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MINISTRY OF AGRICULTURE

PLANT VARIETY RELEASE, PROTECTION AND SEED QUALITY CONTROL DIRECTORATE

CROP VARIETY REGISTER
ISSUE NO. 23

MINISTRY OF AGRICULTURE

PLANT VARIETY RELEASE, PROTECTION AND SEED
QUALITY CONTROL DIRECTORATE



CROP VARIETY REGISTER
ISSUE No. 23

June, 2020
Addis Ababa, Ethiopia

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Committee

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I. Acronyms

ACA	- Awassa College of Agriculture
ADARC	- Adet Agricultural Research Center
ARARC	- Areka Agricultural Research Center
ARARI	- Amhara Regional Agricultural Research Institute
AWARC	- Awassa Agricultural Research Center
AU	- Addiss Ababa University
BARC	- Bako Agricultural Research Center
BNMRC	- Bako National Maize Research Center
DBARC	- DebreBirhan Agricultural Research Center
DZARC	- Debre Zeit Agricultural Research Center
EIAR	- Ethiopian Institute of Agricultural Research
EORC	- Essential Oils Research Center
ESE	- Ethiopian Seed Enterprise
FNRRTC	- Fogera National Rice Research and Training Center
GoPARC	- Gode Pastoral & Agro-Pastoral Research Center
HARC	- Holetta Agricultural Research Center
HU	- Haramaya University
HwU	- Hawassa University
ILRI	- International Livestock Research Institute
JARC	- Jimma Agricultural Research Center
KARC	- Kulumsa Agricultural Research Center
MARC	- Melkassa Agricultural Research Center
MCARC	- Mechara Agricultural Research Center
MoA	- Ministry of Agriculture
NVRC	- National Variety Release Committee
ORARI	- Oromia Regional Agricultural Research Institute
PARC	- Pawe Agricultural Research Center
SARC	- Sinana Agricultural Research Center
ShARC	- Sheno Agricultural Research Center
SoRPARI	- Somali Region Pastoral & Agro-Pastoral Research Institute
SRARC	- Sirinka Agricultural Research Center
SRARI	- South Regional Agricultural Research Institute
WARC	- Werer Agricultural Research Center
TRARI	- Tigray Regional Agricultural Research Institute

II. Preface

The development of improved varieties is intended to help increase production and productivity of crops in the country. To assure this, newly developed varieties are tested by breeders and evaluated for their superiority over existing varieties by professionals (technical committee or TC) and the National Variety Release Committee (NVRC).

Only those varieties that perform well during the evaluation and approved by NVRC are released or registered on plant variety registry book with major their agronomic and morphological descriptions and distributed to users annually.

The Plant Variety Release, Protection and Seed Quality Control Directorate of the Ministry of Agriculture is responsible in organizing all duties related to the evaluation and providing information on the status of the varieties to breeders, institutions and beneficiary.

Accordingly, this 23th issue of the variety register is published with all crop varieties released in 2019/20 cropping season together with their agronomic and morphological descriptors. The list of varieties registered before 2019/20 is also included but only with the name of varieties, their year of release and the institution responsible for their maintenance.

All Statistical data provided in this document with regard to area and production of major food crops is from Central Statistics Authority's Agricultural Sample Survey Bulletin of year 2019/20.

Plant Variety Release, Protection and Seed Quality Control Directorate
Ministry of Agriculture

III. Number of Released Varieties

Table 1. Crops and its released varieties **in 2020 and before 2020** in Ethiopia

No.	Crops	Number of Released Varieties		
		New varieties Released in 2020	Released before 2020	Total
I	Cereal Crops	20	467	487
1	Tef	2	49	51
2	Bread wheat	6	90	96
3	Durum wheat	-	41	41
4	Triticale	-	10	10
5	Emmer Wheat	-	3	3
6	Buck wheat	-	1	1
7	Rice upland type	1	21	22
8	Rice low land	1	10	11
9	Rice irrigated type	-	7	7
10	Maize	4	73	77
11	Sorghum	3	57	60
12	Finger millet	1	25	26
13	Pear millet	-	1	1
14	Fox tail	-	2	2
15	Food barley	1	46	47
16	Malt barley	1	27	28
17	Quinoa	-	1	1
18	Food oat	-	3	3
II	Pulses Crops	10	243	253
1	Faba bean	1	36	37
2	Field pea	-	41	41
3	Dekoko	-	2	2
4	Chick pea Dessi type	1	17	18
5	Chick pea Kabuli types	-	14	14
6	Cowpea	2	6	8
7	Lentil	-	12	12
8	Common bean	1	75	76
9	Soybean	5	27	32

Crop Variety Register

No.	Crops	Number of Released Varieties		
		New varieties Released in 2020	Released before 2020	Total
10	Grass pea	-	1	1
11	Mung bean	-	4	4
12	Adzuki bean	-	1	1
13	Fenugreek	-	7	7
III	Oil Crops	1	124	125
1	Noug	-	5	5
2	Linseed	-	20	20
3	Rapeseed	-	13	13
4	Sesame	-	32	32
5	Groundnut	-	31	31
6	Sunflower	1	16	17
7	Safflower	-	2	2
8	Vernonia	-	1	1
9	Castor	-	2	2
10	Camelina	-	2	2
IV	Tubers, Roots and Vegetable Crops	10	280	290
1	Irish potato	3	36	39
2	Sweet potato	-	29	29
3	Taro	-	3	3
4	Cassava	-	5	5
5	Enset	-	6	6
6	Yam	-	4	4
7	Tomato	1	51	52
8	Garlic	-	7	7
9	Onion	1	28	29
10	Shallot	-	9	9
11	Chili pepper	-	6	6
12	Sweet /Hot pepper	2	23	25
13	Cabbage	-	18	18
14	Carrot	-	2	2
15	Lettuce	-	14	14

Crop Variety Register

No.	Crops	Number of Released Varieties		
		New varieties Released in 2020	Released before 2020	Total
16	Snap bean	-	2	2
17	Water melon	-	8	8
18	Musk melon	-	1	1
19	Green courgette	-	1	1
20	Yellow courgette	-	1	1
21	Broccoli	-	3	3
22	Cauliflower	-	4	4
23	Red beet	-	1	1
24	Snap pea	-	2	2
25	Snow pea	-	2	2
26	Sweet corn	-	1	1
27	Fine bush bean	-	4	4
28	Okra	2	2	4
29	Anchote	-	1	1
30	Amaranthus	-	2	2
31	Packchoi	-	2	2
32	Egg plant	-	1	1
33	Cucumber	-	1	1
34	Summer squash	1	-	1
V	Condiments and Medicinal Plants	-	58	58
1	Coriander	-	6	6
2	Black pepper	-	2	2
3	Ginger	-	2	2
4	Turmeric	-	2	2
5	Cardamom	-	1	1
6	Sweet annie	-	1	1
7	Citronella grass	-	1	1
8	Pyrethrum	-	2	2
9	Cumin			
9a	Black cumin	-	8	8
9b	White cumin	-	2	2
10	Lemmon grass	-	3	3

Crop Variety Register

No.	Crops	Number of Released Varieties		
		New varieties Released in 2020	Released before 2020	Total
11	Peppermint	-	1	1
12	Spear mint	-	2	2
13	Japanese mint	-	1	1
14	Spanish mint		1	1
15	African marigold	-	3	3
16	Geranium	-	1	1
17	Chamomile	-	2	2
18	Lemon verbena	-	1	1
19	Stevia	-	1	1
20	Hibiscus	-	2	2
21	Lavender	-	2	2
22	Majororam	-	1	1
23	Sage	-	1	1
24	Rosmary	-	3	3
25	Lemon scented eucalyptus	-	1	1
26	Vanilla	-	1	1
27	Palmarosa	-	2	2
28	Ethiopian sweet basil	-	2	2
VI	Fruit Crops	-	48	48
1	Banana	-	14	14
2	Mango	-	4	4
3	Pineapple	-	2	2
4	Wine Grape	-	11	11
5	Avocado	-	6	6
6	Ziziphus (kurkura)	-	2	2
7	Fig	-	2	2
8	Papaya	-	3	3
9	Peach	-	2	2
10	Date palm	-	2	2
VII	Forage and Pasture	5	63	68
1	Tree Lucerne	-	2	2
2	Elephant grass	-	4	4

Crop Variety Register

No.	Crops	Number of Released Varieties		
		New varieties Released in 2020	Released before 2020	Total
3	Rhode	-	1	1
4	Panicum	-	1	1
5	Dolicos lablab	-	5	5
6	Phalaries	-	1	1
7	Trifolium	-	1	1
8	Vetch	-	5	5
9	Cow pea	-	4	4
10	Andropogon	-	1	1
11	Pigeon pea	-	5	5
12	Oats	1	9	9
13	Sesbania	-	4	4
14	Pennisetum polystachion	-	1	1
15	Panicum maximum	-	1	1
16	Lupin	-	3	3
17	Alfalfa	-	3	3
18	Pennisetum sphacelatum	-	1	1
19	Perennial grass	-	6	6
20	Desho grass	-	3	3
21	Napier grass	-	2	2
22	Local forage legume	2	-	2
23	Mulberry	2	-	2
VIII	Industrial crops	2	40	42
1	Cotton	2	35	37
2	Kenaf	-	1	1
3	Sugar cane	-	4	4
IX	Stimulants Crops	-	41	41
1	Coffee	-	41	41
2	Tobacco	1	-	1
	Total	49	1364	1413

Group I. Cereal Crops

1. Tef (*Eragrostis tef*)

Tef is a gluten-free an important cereal crop in Ethiopia. In this cropping season (2019/20), cereal crops were grown on **10,478,218.0** hectares of land. Of these, **3,101,177.38** hectares were allocated for Tef and the total production in the Meher season was about **57,357,101.87** quintals.

Outside Ethiopia there is a growing interest in using tef. For example, small scale commercial production of tef has begun in a few areas of the wheat belts of the USA, Canada and Australia. Tef has been introduced to South Africa and cultivated as a forage crop, and in recent years cultivated as a cereal crop in northern Kenya and The Netherlands.

Tef is endemic to Ethiopia and its major diversity is found only in that country. As with several other crops, the exact date and location for the domestication of Tef is unknown. However, there is no doubt that it is a very ancient crop in Ethiopia, where domestication took place before the birth of Christ.

In Ethiopia, tef is traditionally grown as a cereal crop. The grain is ground to flour, which is mainly used for making popular pancake-like local bread called *enjera* and sometimes for making porridge. The grain is also used to make local alcoholic drinks, called *tela* and *katikala*. Tef straw, besides being the most appreciated feed for cattle, is also used to reinforce mud and plaster the walls of tukuls and local grain storage facilities called *gotera*. Tef grain, owing to its high mineral content, has started to be used in mixtures with soybean, chickpea and other grains in the baby food industry. It is the most adapted crop in the diverse agro-ecologies of the country.

1.1 New varieties

1.1.1. Variety name: **DZ-Cr-497 Bishoftu (በሻቃቄ)**

Pedigree: DZ-Cr-387 X Rosea (RIL-133)

1.1.1.1. Agronomic & morphological characteristics

▪ Adaptation area:	High and optimum tef growing area
○ Altitude (m.a.s.l):	1700-2500
○ Rain fall (mm):	700-1200
▪ Seed rate (kg/ha):	10-15
▪ Spacing (cm):	20 between rows
▪ Planting method:	Both broad casting and row sowing
▪ Fertilizer rate (kg/ha):	
○ P ₂ O ₅ :	60 for light soil 60 for black soil
○ N:	40 for light soil 60 for black soil
▪ Days to heading:	46-60
▪ Days to maturity:	94-110
▪ Panicle length (cm):	30-42
▪ 1000 seed weight (g):	0.28-0.31
▪ Plant height (cm):	88-110
▪ Caryopsis color:	Very white
▪ Lemma color:	Variegated (Yellow)
▪ Anther color:	Red
▪ Growth habit:	Semi erect
▪ Panicle form:	Very loose
▪ Crop pest reaction: *	
▪ Grain yield (qt/ha):	
○ Research field:	24-32
○ Farmer's field:	20-28
○ Biomass yield	137.8-138.2

1.1.1.2. Year of release: 2020

1.1.1.3. Breeder/ maintainer: Debre Zeit ARC/EIAR/

* Tolerant to major tef diseases (head smudge and rust)

1.1.2. Variety name: Axumawit (Dz-cr-494(RIL.7)

Pedigree: **(Dz-cr-387 x Alba (RIL.7)**

1.1.2.1. Agronomic & morphological characteristics

▪ Adaptation area:	Optimum to high moisture tef growing areas of Tigray
○ Altitude (m.a.s.l):	1957-2100
○ Rain fall (mm):	-
▪ Seed rate (kg/ha):	15
▪ Spacing (cm):	20 between rows
▪ Planting date:	June 28 – July 10
▪ Fertilizer rate (kg/ha):	
○ P ₂ O ₅ :	37.5
○ N:	46
▪ Days to heading:	64
▪ Days to maturity:	107
▪ Panicle length (cm):	44
▪ 1000 seed weight (g):	-
▪ Plant height (cm):	117
▪ Seed color:	Pale white
▪ Flower color :	Yellow
▪ Panicle color:	
▪ Panicle form:	
▪ Crop pest reaction:*	
▪ Grain yield (qt/ha):	
○ Research field:	19.89
○ Farmer's field:	-
1.1.2.2. Year of release:	2020
1.1.2.3. Breeder/ maintainer:	Axum ARC/TRARI/

* No disease was observed

1.2 Varieties under production

1.2.1. Variety name:	Washera (353*Key muri (RIL 29) 2019 Adet ARC/ARARI/
1.2.1.1. Year of release:	
1.2.1.2. Breeder/Maintainer:	
1.2.2. Variety name:	Jitu (Acc. DZ-01-256) 2019 Bako ARC/ORARI/
1.2.2.1. Year of release:	
1.2.2.2. Breeder/Maintainer:	
1.2.3. Variety name:	Mena (DZ-01-354 X DZ-CR-37-131)) 2019 Sirinka ARC/ARARI/
1.2.3.1. Year of release:	
1.2.3.2. Breeder/Maintainer:	
1.2.4. Variety name:	Bora (DZ-CR-387 X 3774-13 (RIL No.120B) 2019 Debre Zeit ARC/EIAR/
1.2.4.1. Year of release:	
1.2.4.2. Breeder/Maintainer:	
1.2.5. Variety name:	Ebba (Kay muri x 3774-13) (RIL No.18) 2019 Debre Zeit ARC/EIAR
1.2.5.1. Year of release:	
1.2.5.2. Breeder/Maintainer:	
1.2.6. Variety name:	Abay (Acc#225931) 2018 Adet ARC/ARARI/
1.2.6.1. Year of release:	
1.2.6.2. Breeder/Maintainer:	
1.2.7. Variety name:	DURSI (Acc.236952) 2018 Bako ARC/ORARI/
1.2.7.1. Year of release:	
1.2.7.2. Breeder/Maintainer:	
1.2.8. Variety name:	Hiber-1 (DZ-01-974* P1222988) 2017 Adet ARC/ARARI/
1.2.8.1. Year of release:	
1.2.8.2. Breeder/Maintainer:	

Crop Variety Register	
1.2.9. Variety name:	Areka-1 (Dz-01-974 x Dz-01-2788)
1.2.9.1. Year of release:	2017
1.2.9.2. Breeder/Maintainer:	Areka ARC/SRARI/
1.2.10. Variety name:	Flagot (Brown color) [DZ-Cr-442 (RIL No. 77C)]
1.2.10.1. Year of release:	2017
1.2.10.2. Breeder/Maintainer:	Debre Zeit ARC/EIAR
1.2.11. Variety name:	Tesfa [DZ-Cr-457 (RIL .181)]
1.2.11.1. Year of release:	2017
1.2.11.2. Breeder/Maintainer:	Debre Zeit ARC/EIAR
1.2.12. Variety name:	Negus [DZ-Cr-438 (RIL No. 91A)]
1.2.12.1. Year of release:	2017
1.2.12.2. Breeder/Maintainer:	Debre Zeit ARC/EIAR
1.2.13. Variety name:	Dagem [DZ-Cr-438 (RIL No. 91A)]
1.2.13.1. Year of release:	2016
1.2.13.2. Breeder/Maintainer:	Debre Zeit ARC/EIAR
1.2.14. Variety name:	Abola (Quncho x Key)
1.2.14.1. Year of release:	2015
1.2.14.2. Breeder/Maintainer:	Adet ARC /AARC/
1.2.15. Variety:	Kora DZ-Cr-438 (RIL No. 133B)]
1.2.15.1 Year of release:	2014
1.2.15.2. Breeder/Maintainer:	DZARC/EIAR
1.2.16. Variety:	Worekiyu (214746A)
1.2.16.1. Year of release:	2014
1.2.16.2. Breeder/Maintainer:	Sirinka ARC/ARARI/

Crop Variety Register	
1.2.17. Variety:	Boset [DZ-Cr-409 (RIL-50d)]
1.2.17.1 Year of release:	2012
1.2.17.2 Breeder/Maintainer:	DZARC/EIAR
1.2.18. Variety:	Lakech (RIL 273)
1.2.18.1 Year of release:	2009
1.2.18.2 Breeder/Maintainer:	Sirinka ARC/ARARI/
1.2.19. Variety:	Simada DZ- Cr-385 (RIL 295)
1.2.19.1 Year of release:	2009
1.2.19.2 Breeder/Maintainer:	DZARC/EIAR
1.2.20. Variety:	Kena (23-Tafi-Adi-72)
1.2.20.1. Year of Release:	2008
1.2.20.2. Breeder/Maintainer:	Bako ARC
1.2.21. Variety:	Etsub (Dz-01-3186)
1.2.21.1. Year of release:	2008
1.2.21.2. Breeder/Maintainer:	Adet ARC
1.2.22. Variety:	Gemechis DZ-Cr-387 (RIL-127)
1.2.22.1. Year of release:	2007
1.2.22.2. Breeder/Maintainer:	MARC/EIAR
1.2.23. Varieties:	Mechare (Acc. 205953)
1.2.23.1. Year of release:	2007
1.2.23.2. Breeder/Maintainer:	SRARC/ARARI
1.2.24. Variety:	Quncho Dz-Cr-387 (RIL-355)
1.2.24.1 Year of release:	2006
1.2.24.2 Breeder/Maintainer:	DzARC/EIAR

Crop Variety Register		Crop Variety Register	
1.2.25. Variety:	Amarach- (Ho-Cr-136)	1.2.34. Variety:	Gola (DZ-01-2054)
1.2.25.1. Year of release:	2006	1.2.34.1. Year of release:	2003
1.2.25.2. Breeder/Maintainer:	DzARC/EIAR	1.2.34.2. Breeder/Maintainer:	SRARC/ARARI
1.2.26. Variety:	Guduru- (DZ-01-1880)	1.2.35. Variety:	Key Tena (Dark brown)
1.2.26.1. Year of release:	2006	1.2.35.1. Year of release:	(DZ-01-1681)
1.2.26.2. Breeder/Maintainer:	BARC/OARI	1.2.35.2. Breeder/Maintainer:	2002
1.2.27. Variety:	Dima- (DZ-01-2423)	1.2.36. Variety:	DZARC/EIAR
1.2.27.1. Year of release:	2005	1.2.36.1. Year of release:	Koye (DZ-01-1285)
1.2.27.2. Breeder/Maintainer:	ADARC/ARARI	1.2.36.2. Breeder/Maintainer:	2002
1.2.28. Variety:	Yilmana (DZ-01-1868)	1.2.37. Variety:	DZARC/EIAR
1.2.28.1. Year of release:	2005	1.2.37.1. Year of release:	Gerado (DZ-01-1281)
1.2.28.2. Breeder/Maintainer:	ADARC/ARARI	1.2.37.2. Breeder/Maintainer:	2002
1.2.29. Variety:	Dega-Tef (DZ-01-2675)	1.2.38. Variety:	Ambo Toke (DZ-01-1278)
1.2.29.1. Year of release:	2005	1.2.38.1. Year of release:	1999/00
1.2.29.2. Breeder/Maintainer:	DZARC/EIAR	1.2.38.2. Breeder/Maintainer:	HARC/EIAR
1.2.30. Variety:	Gimbichu (DZ-01-899)	1.2.39. Variety:	Holetta Key (Brown color)
1.2.30.1. Year of release:	2005	1.2.39.1. Year of release:	(DZ-01-2053)
1.2.30.2. Breeder/Maintainer:	DZARC/EIAR	1.2.39.2. Breeder/Maintainer:	1998/99
1.2.31. Variety:	Zobel (DZ-01-1821)	1.2.40. Variety:	HARC/EIAR
1.2.31.1. Year of release:	2005	1.2.40.1. Year of release:	Dukem (DZ-01-974)
1.2.31.2. Breeder/Maintainer	SRARC/ARARI	1.2.40.2. Breeder / Maintainer:	1995
1.2.32. Variety:	Genete (DZ-01-146)	1.2.41. Variety:	DZARC/EIAR
1.2.32.1. Year of release:	2005	1.2.41.1. Year of release:	Ziquala (DZ-Cr-358)
1.2.32.2. Breeder/Maintainer:	SRARC/ARARI	1.2.41.2. Breeder/ Maintainer:	1995
1.2.33. Variety:	Ajora (PGRC/E 205396)	1.2.42. Variety:	DZARC/EIAR
1.2.33.1. Year of release:	2004	1.2.42.1. Year of release:	Gibe (DZ-Cr-255)
1.2.33.2. Breeder/Maintainer:	ARARC/SRARI	1.2.42.2. Breeder/ Maintainer:	1993

1.2.43. Variety:	Tseday (DZ-Cr-37)
1.2.43.1. Year of release:	1984
1.2.43.2. Breeder/ Maintainer:	DZARC/EIAR
1.2.44. Variety:	DZ-Cr-82
1.2.44.1. Year of release:	1982
1.2.44.2. Breeder / Maintainer:	DZARC/EIAR
1.2.45. Variety:	DZ-Cr-44
1.2.45.1. Year of release:	1982
1.2.45.2. Breeder / Maintainer:	DZARC/EIAR
1.2.46. Variety:	Magna (DZ-01-196)
1.2.46.1. Year of release:	1978
1.2.46.2. Breeder/Maintainer:	DZARC/EIAR
1.2.47. Variety:	DZ-01-787
1.2.47.1. Year of release:	1978
1.2.47.2. Breeder/ Maintainer:	DZARC/EIAR
1.2.48. Variety:	Enatit (DZ-01-354)
1.2.48.1. Year of release:	1970
1.2.48.2. Breeder / Maintainer:	DZARC/EIAR
1.2.49. Variety:	DZ-01-99
1.2.49.1. Year of release:	1970
1.2.49.2. Breeder / Maintainer:	DZARC/EIAR

2. Bread wheat (*Triticum aestivum*)

Ethiopia is the largest wheat producer in Sub-Saharan Africa. Wheat is one of the major cereal crops in the Ethiopian highlands, which range between 6 and 16°N, 35 and 42°E, and from 1500 to 2800 m. At present, wheat is produced mostly under rain fed conditions. At national level, during **2019/20** cropping season **1,789,372.23 ha** of land is covered by bread & durum wheat and **53,152,703.28** quintals were harvested from these land.

Altitude plays an important role in the distribution of wheat production through its influence on rainfall, temperature, and diseases. In Arsi, Bale and Shewa regions, the soil, moisture and disease conditions within the range of 1900-2300m altitude zone are favorable for the production of early and intermediate maturing varieties of bread wheat. This is estimated to comprise 25% of the total wheat production area, while the remaining 75% falls in the 2300-2700 m altitude zone. There, early, intermediate and late varieties are grown. Soil types used for wheat production vary from well-drained fertile soils to waterlogged heavy vertisols.

So far, different bread wheat varieties have been released and /or registered to satisfy the growing production demands of the farmers in the country.

2.1 New varieties

2.1.1. Variety name: Dursa (ETBW 9578)

Pedigree: NAVJ07/SHORTENED SR26
TRANSLOCATION/3/ATTILA/BAV92//PASTOR)

2.1.1.1. Agronomic & morphological characteristics

- Adaptation area: Low to midland area
 - Altitude (m.a.s.l): 1600– 2100
 - Rain fall (mm): 500 - 800
- Seed rate (kg/ha): 125
- Planting date: Late June to early July
- Fertilizer rate (kg/ha):
 - P₂O₅: 46
 - N: 92
- Days to heading: 59
- Days to maturity: 100
- Plant height (cm): 84
- Growth habit: Erect type
- Ear type: Tapering
- 1000 kernel weight (g): 34
- Hectoliter weight (kg/hl): 71
- Grain color: White
- Crop pest reaction:*
- Quality data:
 - Protein (%): 14.30
 - Wet gluten(%): 48.45
- Grain yield (qt/ha):
 - Research field: 51-62
 - Farmers“ field: 42-61

2.1.1.2. Year of release: 2020

2.1.1.3. Breeder/ maintainer: Kulumsa ARC/EIAR/

* Resistant to rust and septoria

2.1.2. Variety name: Boru (ETBW 9554)

Pedigree: AUAL/MUTUS/6/CNO79//PF70354/MUS/3/
PASTOR/4/BAV92*2/5/FH6-1-7/7/CNO79// PF70354/
MUS/3/PASTOR/4/BAV92*2/5/FH6-1-7)

2.1.2.1. Agronomic & morphological characteristics

- Adaptation area: Mid to highland
 - Altitude (m.a.s.l): 1900– 2780
 - Rain fall (mm): 700 - 1100
- Seed rate (kg/ha): 125-150
- Planting date: Early to Mid July
- Fertilizer rate (kg/ha):
 - P₂O₅: 46
 - N: 92
- Days to heading: 70
- Days to maturity: 128
- Plant height (cm): 94
- Growth habit: Erect
- Ear type: Tapering
- 1000 kernel weight (g): 43
- Hectoliter weight (kg/hl): 71
- Grain color: White
- Crop pest reaction:*
- Quality data:
 - Protein (%): 13.23
 - Wet gluten(%): 33.30
- Grain yield (qt/ha):
 - Research field: 52-70
 - Farmers“ field: 49-53

2.1.2.2. Year of release: 2020

2.1.2.3. Breeder/ maintainer: Kulumsa ARC/EIAR/

*Resistant to rust and septoria

Crop Variety Register

2.1.3. Variety name: Hachalu (ETB 8260)

Pedigree: RANA96/SIDS-1

2.1.3.1. Agronomic & morphological characteristics

▪ Adaptation area:	Highlands of Bale and similar agro ecology
○ Altitude (m.a.s.l):	2000-2500
○ Rain fall (mm):	750-1500
▪ Seed rate (kg/ha):	150
▪ Spacing (cm):	20 between rows
▪ Planting date:	Mid June-early September in Bale based on the agro-ecology
▪ Fertilizer rate (kg/ha):	
○ NPS:	100
○ Urea:	50
▪ Days to heading:	71
▪ Days to maturity:	143
▪ Plant height (cm):	103.7
▪ Growth habit	Erect
▪ Seed color:	Amber
▪ 1000 seed weight (g):	44
▪ Crop pest reaction*:	
▪ Quality	
○ Protein(%):	11.6
○ HLW(kg/hL	83.1
○ Falling number (sec)	26.3
▪ Grain yield (qt/ha):	
○ Research field:	52.9-63.7
○ Farmer's field:	41.9-51.2

2.1.3.2. Year of release: 2020

2.1.3.3. Breeder/ maintainer: Sinana ARC/OARI

*Moderately resistance to yellow rust and stem rust

Crop Variety Register

2.1.4. Variety name: Adola 1 (ETBW 8408)

Pedigree: TILILA/MUBASHIIR-1

2.1.4.1. Agronomic & morphological characteristics

▪ Adaptation area:	Lowlands to Midland of Guji and similar agro ecology
○ Altitude (m.a.s.l):	1600 – 2100
○ Rain fall (mm):	792 - 1126
▪ Seed rate (kg/ha):	150
▪ Spacing (cm):	20 btween rows
▪ Planting date:	First week of September up to last week of September (depending on the onset of rain fall).
▪ Fertilizer rate (kg/ha):	
○ NPS:	121
○ Urea:	50
▪ Days to heading:	62
▪ Days to maturity:	103
▪ Plant height (cm):	75.18
▪ Growth habit:	Erect
▪ 1000 kernel weight (g):	42.6
▪ Hectoliter weight (kg/hl):	81.4
▪ Crop pest reaction: *	
▪ Special merit:	
▪ Seed color:	
▪ Quality	
○ Protein(%):	13.83
○ Zeley index (ml)	67.05
○ Grain Gluten (%)	28.50
▪ Grain yield (qt/ha):	
○ Research field:	27-38
○ Farmer's field:	26-30
2.1.4.2. Year of release:	2020
2.1.4.3. Breeder/ maintainer:	Bore ARC/ORARI/

*Resistant to leaf, yellow and stem rust

2.1.5. Variety name: **Netsanet (ነፃናት) (ETBW 6753)**

Pedigree: CROC_1/AE.SQUARROSA (224)//OPATA/4/
TC14/2*HTG//DUCULA/3/PRINIA

2.1.4.1. Agronomic & morphological characteristics

▪ Adaptation area:	Mid to high land altitude
○ Altitude (m.a.s.l):	2000 – 2800
○ Rain fall (mm):	900 - 1200
▪ Seed rate (kg/ha):	125-150
▪ Planting date:	End of June to early July depend on the onset of rainfall
▪ Fertilizer rate (kg/ha):	
○ P ₂ O ₅ :	46
○ N:	41
▪ Days to heading:	72
▪ Days to maturity:	124
▪ Plant height (cm):	82
▪ 1000 kernel weight (g):	43
▪ Hectoliter weight (kg/hl):	76
▪ Crop pest reaction: *	
▪ Grain color:	White
▪ Quality	
○ Protein(%):	10.5
○ Wet gluten(%):	22.9
○ Starch (%):	62.7
▪ Grain yield (qt/ha):	
○ Research field:	29-36
○ Farmer's field:	24-30
2.1.5.2. Year of release:	2020
2.1.5.3. Breeder/ maintainer:	Srinka ARC/ARARI/

* *Moderately resistance to Yellow and Stem Rust*

2.1.6. Variety name: **Adet-1 (BAJ #1/ALTIGO)**

Pedigree: - MXI15-16|M27|SEPTON|47

2.1.4.1. Agronomic & morphological characteristics

▪ Adaptation area:	Mid to high land altitude
○ Altitude (m.a.s.l):	2220 – 2800
○ Rain fall (mm):	1200 - 1600
▪ Seed rate (kg/ha):	150
▪ Planting date:	End of June to late July
▪ Fertilizer rate (kg/ha):	
○ NPS:	100-225
○ Urea:	161-275
▪ Days to heading:	70
▪ Days to maturity:	128
▪ Plant height (cm):	86.36
▪ Growth habit:	Erect type
▪ 1000 kernel weight (g):	39
▪ Hectoliter weight (kg/hl):	74.73
▪ Crop pest reaction: *	
▪ Grain color:	Amber
▪ Quality	
○ Protein(%):	10.38
○ Wet gluten(%):	21.86
○ Starch (%):	66.3
▪ Grain yield (qt/ha):	
○ Research field:	53.8
○ Farmer's field:	40.3
2.1.6.2. Year of release:	2020
2.1.6.3. Breeder/ maintainer:	Adet ARC/ARARI/

* *Moderately resistant to stem rust, stripe rust & septoria*

2.2 Varieties under production

2.2.1. Variety:	Korem 1 (ETBW7038)
2.2.1.1. Year of registration:	2019
2.2.1.2. Breeder/maintainer:	Alamata ARC (TRARI)
2.2.2. Variety:	Ardi (GLADIUS/2*BAVIS) Irrigated type
2.2.2.1. Year of registration:	2019
2.2.2.2. Breeder/maintainer:	Werer ARC/EIAR
2.2.3. Variety:	Ga'ambro-2 Irrigated type
2.2.3.1. Year of registration:	2019
2.2.3.2. Breeder/maintainer:	Werer ARC/EIAR
2.2.4. Variety:	Balcha (ETB 8260)
2.2.4.1. Year of registration:	2019
2.2.4.2. Breeder/maintainer:	Kulumsa ARC/EIAR/
2.2.5. Variety:	Galan (ETBW8003)
2.2.5.1. Year of registration:	2019
2.2.5.2. Breeder/maintainer:	Sinana ARC/ORARI
2.2.6. Variety:	Hadis (ETBW 6463)
2.2.6.1. Year of registration:	2018
2.2.6.2. Breeder/maintainer:	Alamata ARC (TRARI)
2.2.7. Variety:	Bondena (ETBW 6188)
2.2.7.1. Year of registration:	2018
2.2.7.2. Breeder/maintainer:	Areka ARC/SRARI/
2.2.8. Variety:	Deka (ETBW 7638)
2.2.8.1. Year of registration:	2018
2.2.8.2. Breeder/maintainer:	Kulumsa ARC/EIAR/
2.2.9. Variety:	Hibist (ETBW 7690)
2.2.9.1. Year of registration:	2018
2.2.9.2. Breeder/maintainer:	Sirinka ARC/ARARI/

2.2.10. Variety:	Sinja (Dure/Madda Walabu 2005 SNcr.)
2.2.10.1. Year of registration:	2018
2.2.10.2. Breeder/maintainer:	Sinana ARC/ORARI/
2.2.11. Variety:	JAALANNE (ETBW 6440)
2.2.11.1. Year of registration:	2017
2.2.11.2. Breeder/maintainer:	Haramaya University
2.2.12. Variety:	JAJABO (ETB 6785)
2.2.12.1. Year of registration:	2017
2.2.12.2. Breeder/maintainer:	Holetta ARC/EIAR/
2.2.13. Variety:	Fentale – 2 (Irrigated type) (QAFZAH-2/FERRIUG-2)
2.2.13.1. Year of registration:	2017
2.2.13.2. Breeder/maintainer:	Werer ARC/EIAR/
2.2.14. Variety:	Amibara – 2 (ETBW 5963) (Irrigated Type)
2.2.14.1. Year of registration:	2017
2.2.14.2. Breeder/maintainer:	Werer ARC/EIAR/
2.2.15. Variety:	WANE (ETBW 6130)
2.2.15.1. Year of registration:	2016
2.2.15.2. Breeder/maintainer:	KARC/ EIAR
2.2.16. Variety:	LEMU (ETBW 6861)
2.2.16.1. Year of release:	2016
2.2.16.2 Breeder/maintainer:	KARC/ EIAR
2.2.17. Variety:	Kingbird
2.2.17.1. Year of registration:	2015
2.2.17.2. Breeder/maintainer:	KARC/ EIAR
2.2.18. Variety:	Obora (UTIQUE96/FLAG-1)
2.2.18.1. Year of release:	2015
2.2.18.2 Breeder/maintainer:	Sinana ARC/OARI/

Crop Variety Register		Crop Variety Register	
2.2.19. Variety:	Dambal (AGUILAL/3/ PYN/BAU//MILAN)	2.2.27. Variety:	HONQOLO (ETBW 5879)
2.2.19.1. Year of release:	2015	2.2.27.1. Year of release:	2014
2.2.19.2. Breeder/maintainer:	Sinana ARC /OARI/	2.2.27.2. Breeder/Maintainer:	KARC/EIAR
2.2.20. Variety:	Amibera (Irrigated (DOUKKALA-4(SHUHA- 8/DUCULA))	2.2.28. Variety:	NEJMAH-14 (Lucy)
2.2.20.1. Year of release:	2015	2.2.28.1 Year of release:	2013
2.2.20.2. Breeder seed maintainer:	Werer ARC/EIAR	2.2.28.2 Breeder/Maintainer:	WARC/EIAR
2.2.21. Variety:	Fentale (Irrigated) (MOONTIJ-3 (FERROUG-2/FOW-2)	2.2.29. Variety:	ADEL-6 (SAMAR-13/Pastor-1)
2.2.21.1. Year of release:	2015	2.2.29.1 Year of release:	2013
2.2.21.2. Breeder seed maintainer:	Werer ARC/EIAR	2.2.29.2 Breeder/Maintainer:	WARC/EIAR
2.2.22. Variety:	Bulluq (ETBW 5484) (UTQE96/3/ PYN/BAU//MILAN)	2.2.30. Variety:	Sekota-1 (ETBW4886)
2.2.22.1. Year of release:	2015	2.2.30.1 Year of release:	2013
2.2.22.2. Breeder/maintainer:	Bako ARC/OARI/	2.2.30.2 Breeder/Maintainer:	SDARC/ARARI
2.1.23. Variety:	Liben (ETBW 5653)	2.2.31. Variety:	Sorra (Vo robeycmss 96 YO2555-040Y-020M)
2.2.23.1. Year of release:	2015	2.2.31.1 Year of release:	2013
2.2.23.2. Breeder/maintainer:	Bako ARC / OARI/	2.2.31.2 Breeder/Maintainer:	Sirinka ARC /ARARI
2.2.24. Variety:	BIQA (ETBW 6095)	2.2.32. Variety:	FRTI-1(Mekel4)
2.2.24.1. Year of release:	2014	2.2.32.1 Year of release:	2013
2.2.24.2. Breeder/Maintainer:	KARC/EIAR	2.2.32.2 Breeder/Maintainer:	Mekelle and Alamata ARC/TRARI
2.2.25. Variety:	Mandoyu (Worrakatta/Pastor)	2.2.33 Variety	Jefferson
2.2.25.1. Year of release:	2014	2.2.33.1 Year of release:	2012
2.2.25.2. Breeder/Maintainer:	Sinana ARC/ OARI/	2.2.33.2 Breeder/Maintainer:	OARI/Fedis)/MORRELL
2.2.26. Variety:	Sanate (14F/HAR 1685)	2.2.34 Variety:	Hulluka (ETBW5496)
2.2.26.1. Year of release:	2014	2.2.34.1 Year of release:	2012
2.2.26.2. Breeder/Maintainer:	Sinana ARC/ OARI/	2.2.34.2 Breeder/Maintainer:	KARC/EIAR
		2.2.35. Variety:	Ogolcho (ETBW5520)
		2.2.35.1 Year of release:	2012
		2.2.35.2 Breeder/Maintainer:	KARC/EIAR

Crop Variety Register		Crop Variety Register	
2.2.36 Variety:	Hidase (ETBW5795)	2.2.45 Variety	Kakaba (Picaflor # 1)
2.2.36.1 Year of release:	2012	2.2.45.1 Year of release:	2010
2.2.36.2 Breeder/Maintainer:	KARC/EIAR	2.2.45.2 Breeder/Maintainer:	KARC/EIAR
2.2.37 Variety:	Mekelle- 03 (M17SAWSN-79)	2.2.46. Variety:	Galil
2.2.37.1 Year of release:	2012	2.2.46.1 Year of release:	2010
2.2.37.2 Breeder/Maintainer:	Mekele and Alamata ARC/TARI	2.2.46.2 Breeder/Maintainer:	Hazera Genetics Ltd (Axum Greenline Trading Plc)
2.2.38. Variety	Shorima (ETBW 5483)	2.2.47 Variety:	Inseno-1(BWPRAW 03/36)
2.2.38.1 Year of release:	2011	2.2.47.1 Year of release:	2009
2.2.38.2 Breeder/Maintainer:	KARC	2.2.47.2 Breeder/Maintainer:	AWARC/SARI
2.2.39. Variety:	Hoggana (ETBW 5780)	2.2.48 Variety:	Bolo (HAR-3816)
2.2.39.1 Year of release:	2011	2.2.48.1 Year of release:	2009
2.2.39.2 Breeder/Maintainer:	KARC	2.2.48.2 Breeder/Maintainer:	DBARC
2.2.40. Variety:	Tsehay/HAR3837/	2.2.49 Variety:	Qulqulluu (ETBW-4621)
2.2.40.1 Year of release:	2011	2.2.49.1 Year of release:	2009
2.2.40.2 Breeder/Maintainer:	Debre Birhan ARC/ARARI/	2.2.49.2 Breeder/Maintainer:	Haramaya University
2.2.41 Variety:	MeKelle-01/HUW-468/	2.2.50 Variety:	GASAY (HAR-3730)
2.2.41.1 Year of release:	2012	2.2.50.1 Year of release:	2007
2.2.41.2 Breeder/Maintainer:	KARC/EIAR	2.2.50.2 Breeder/Maintainer:	ADARC/ARARI
2.2.42 Variety:	MeKelle-02/HI-1418/	2.2.51 Variety:	DINKNESH (HAR-3919)
2.2.42.1 Year of release:	2011	2.2.51.1 Year of release:	2007
2.2.42.2 Breeder/Maintainer:	Mekelle ARC/TARI	2.2.51.2 Breeder/Maintainer:	SRARC/ARARI
2.2.43 Variety	Gambo = Quaiu # 2	2.2.52 Varieties:	LIDORO (HK-14-R251)
2.2.43.1 Year of release:	2011	2.2.52.1 Year of release:	2007
2.2.43.2 Breeder/Maintainer:	KARC/EIAR	2.2.52.2 Breeder/Maintainer:	HARC/EIAR
2.2.44 Variety	Danda“a (Danphe#1)	2.2.53 Variety:	MENZE (HAR-3008)
2.2.44.1 Year of release:	2010	2.2.53.1 Year of release:	2007
2.2.44.2 Breeder/Maintainer:	KARC/EIAR	2.2.53.2 Breeder/Maintainer:	DBARC/ARARI

Crop Variety Register

2.2.54 Variety:	SULLA (710/RBC)
2.2.54.1 Year of release:	2007
2.2.54.2 Breeder/Maintainer:	AwARC /SARI
2.2.55 Variety:	Millennium (ETBW-4921)
2.2.55.1 Year of release:	2007
2.2.55.2 Breeder/Maintainer:	KARC/EIAR
2.2.56 Variety:	Jiru (HAR-2896)
2.2.56.1 Year of release:	2006
2.2.56.2 Breeder/Maintainer:	DBARC/ARARI
2.2.57 Variety:	Warkaye (HAR-3820)
2.2.57.1 Year of release:	2006
2.2.57.2 Breeder/Maintainer:	SRARC/ARARI
2.2.58 Variety:	Meraro (11-6-24)
2.2.58.1 Year of release:	2005
2.2.58.2 Breeder/Maintainer:	KARC/EIAR
2.2.59 Variety:	TAY (ET-12 D4/HAR 604 (1)
2.2.59.1 Year of release:	2005
2.2.59.2 Breeder/Maintainer:	ADARC/ARARI
2.2.60 Variety:	Senkegna (HAR 3646)
2.2.60.1 Year of release:	2005
2.2.60.2 Breeder/Maintainer:	ADARC/ARARI
2.2.61 Variety:	Digalu (SHA 7/ KAUZ or HAR 3116)
2.2.61.1 Year of release:	2005
2.2.61.2 Breeder/Maintainer:	KARC/EIAR
2.2.62 Variety:	Tossa (HAR 3123)
2.2.62.1 Year of release:	2004
2.2.62.2 Breeder/Maintainer:	SRARC/ARARI

Crop Variety Register

2.2.63 Variety:	Bobicho (HAR-2419)
2.2.63.1 Year of release:	2002
2.2.63.2 Breeder/Maintainer:	KARC/EIAR
2.2.64 Variety:	Densa (HAR-2562)
2.2.64.1 Year of release:	2002
2.2.64.2 Breeder/Maintainer:	ADARC/ARARI
2.2.65 Variety:	Sirbo (HAR-2192)
2.2.65.1 Year of release:	2001
2.2.65.2 Breeder/Maintainer:	KARC/EIAR
2.2.66 Variety:	Doddota (HAR-2508)
2.2.66.1 Year of release:	2001
2.2.66.2 Breeder/Maintainer:	KARC/EIAR
2.2.67 Variety:	KBG-01 (FH-1-7A or Line 8.3.8)
2.2.67.1 Year of release:	2001
2.2.67.2 Breeder/Maintainer:	KARC/EIAR
2.2.68 Variety:	Dure (HAR-1008)
2.2.68.1 Year of release:	2001
2.2.68.2 Breeder/Maintainer:	SARC/OARI
2.2.69 Variety:	Guna (HAR-2029)
2.2.69.1 Year of release:	2001
2.2.69.2 Breeder/Maintainer:	ADARC/ARARI
2.2.70 Variety:	Sofumar (HAR-1889)
2.2.70.1 Year of release:	1999/00
2.2.70.2 Breeder/Maintainer:	SARC/OARI
2.2.71 Variety:	Madda Walabu (HAR-1480)
2.2.71.1 Year of release:	1999/00
2.2.71.2 Breeder/Maintainer:	SARC/OARI

Crop Variety Register

2.2.72 Variety:	Hawi (HAR-2501)
2.2.72.1 Year of release:	1999/00
2.2.72.2 Breeder/Maintainer:	KARC/EIAR
2.2.73 Variety:	Wetera (HAR-1920)
2.2.73.1 Year of release:	1999/00
2.2.73.2 Breeder/Maintainer:	KARC/EIAR
2.2.74 Variety:	Simba (HAR-2536)
2.2.74.1 Year of release:	1999/00
2.2.74.2 Breeder/Maintainer:	KARC/EIAR
2.2.75 Variety:	Shina (HAR-1868)
2.2.75.1 Year of release:	1998/99
2.2.75.2 Breeder/Maintainer:	ADARC/ARARI
2.2.76 Variety:	Katar (HAR-1899)
2.2.76.1 Year of release:	1998/99
2.2.76.2 Breeder/Maintainer:	KARC/EIAR
2.2.77 Variety:	Tura (HAR-1775)
2.2.77.1 Year of release:	1998/99
2.2.77.2 Breeder/Maintainer:	KARC/EIAR
2.2.78. Variety:	Tuse (HAR-1407)
2.2.78.1 Year of release:	1997
2.2.78.2 Breeder/Maintainer:	KARC/EIAR
2.2.79 Variety:	Abola (HAR-1522)
2.2.79.1 Year of release:	1997
2.2.79.2 Breeder/Maintainer:	KARC/EIAR
2.2.80 Variety:	Megala (HAR-1595)
2.2.80.1 Year of release:	1997
2.2.80.2 Breeder/Maintainer:	KARC/EIAR
2.2.81 Variety:	Galema (HAR-604)
2.2.81.1 Year of release:	1995
2.2.81.2 Breeder/Maintainer:	KARC/EIAR

Crop Variety Register

2.2.82. Variety:	Wabe (HAR-710)
2.2.82.1 Year of release:	1995
2.2.82.2 Breeder/Maintainer:	KARC/EIAR
2.2.83. Variety:	Kubsa (HAR 1685)
2.2.83.1 Year of release:	1995
2.2.83.2 Breeder/Maintainer:	KARC/EIAR
2.2.84. Variety:	Mitike (HAR 1709)
2.2.84.1 Year of release:	1994
2.2.84.2 Breeder/Maintainer:	KARC/EIAR
2.2.85. Variety:	Dashen
2.2.85.1 Year of release:	1984
2.2.85.2 Breeder/Maintainer:	KARC/EIAR
2.2.86. Variety:	Pavon 76
2.2.86.1 Year of release:	1982
2.2.86.2 Breeder/Maintainer:	KARC/EIAR
2.2.87. Variety:	ET-13 A2
2.2.87.1 Year of release:	1981
2.2.87.2 Breeder/Maintainer:	KARC/EIAR
2.2.88. Variety:	K6295-4A
2.2.88.1 Year of release:	1980
2.2.88.2 Breeder/Maintainer:	KARC/EIAR
2.2.89. Variety:	K 6290 bulk
2.2.89.1 Year of release:	1977
2.2.89.2 Breeder/Maintainer:	KARC/EIAR
2.2.90. Variety:	Dereselgne
2.2.90.1 Year of release:	1974
2.2.90.2 Breeder/Maintainer:	KARC/EIAR

3. Durum wheat (*Triticum turgidum var. durum*)

Durum or macaroni wheat is indigenous to Ethiopia and it has been under cultivation since ancient times. Ethiopia is considered to be the center of genetic diversity of this crop. It is a tetraploid wheat species and traditionally grown on heavy black clay soils (Vertisols) of the central and northern highlands of Ethiopia between 1800-2800 meters above sea level. Accurate statistics on area and production of durum wheat in the country are difficult to obtain since they are lumped together with bread wheat.

In Ethiopian, durum wheat is consumed as leavened bread, common bread, macaroni, spaghetti, biscuits, pastries, and in various indigenous food preparations. The straw is mainly used for cattle feed and for fuel at times of scarcity. It has very narrow adaptation and lower yield potential as compared to bread wheat.

Although recommendations may vary from one region to another, the planting of newly improved durum wheat varieties are 2-3 weeks earlier than the normally used land races. In general, the improved varieties of durum wheat are highly beneficial in most of their qualities to agro industries.

3.1 New varieties

- No new variety released in 2020

3.2 Varieties under production

3.2.1. Variety:

Fetan
(CDSS02B00643S-0Y-0M-1Y4M-04Y-0B-2Y)

2018
Debere Ziet ARC/EIAR/

3.2.2. Variety:

Don Matteo
2018
CGS Italian

3.2.3. Variety:

Bullaallaa (Durum
ICARDA/Ethiopia
PDYT-322
2017
Sinana ARC/ORARI/

3.2.4. Variety:

Alemtena
(43IDSNMeh 2011-130)
2015
DZARC/EIAR

3.2.5. Variety:

Tesfaye
(43IDSNMeh 2011-82)
2017
DZARC/EIAR

3.2.6. Variety:

Wehabit(Acc#8208)
2017
Mekelle University

3.2.7. Variety:

Rigeat (Acc#208304)
2017
Mekelle University

Crop Variety Register	
3.2.8. Variety:	Utuba (IDON-MD-2009-off/53/2009)
3.2.8.1. Year of release:	2015
3.2.8.2. Breeder/Maintainer:	DZARC/EIAR
3.2.9 Variety Name:	Mukiye (STJ3 //BCR /LKS4/3/TER-3)
3.2.9.1 Year of release:	2012
3.2.9.2 Breeder/Maintainer:	DZARC/EIAR
3.2.10 Variety Name:	Mangudo (ICAJIHAN 22)
3.2.10.1 Year of release:	2012
3.2.10.2 Breeder/Maintainer:	SARC/OARI
3.2.11 Variety Name:	Dire (CHEN/TE3/ BUSHEN4/3/ AC089CDSS92B1ZOZ)
3.2.11.1 Year of release:	2012
3.2.11.2 Breeder/Maintainer:	SARC/OARI
3.2.12 Variety Name:	TOLTU (4/B/R9096#21001 (980SN Patho))
3.2.12.1 Year of release:	2010
3.2.12.2 Breeder/Maintainer:	SARC/OARI
3.2.13 Variety Name:	Hitosa (CHEN/ALTAR-84)
3.2.13.1 Year of release:	2009
3.2.13.2 Breeder/Maintainer:	DZARC/EIAR
3.2.14 Variety Name:	Denbi (AJAIA/ BUASHEN)
3.2.14.1 Year of release:	2009
3.2.14.2 Breeder/Maintainer:	DZARC/EIAR
3.2.15 Variety Name:	Werer (Mamouri I)
3.2.15.1 Year of release:	2009
3.2.15.2 Breeder/Maintainer:	DZARC/EIAR
3.2.16. Variety Name:	Tate (CD94523)
3.2.16.1 Year of release:	2009
3.2.16.2 Breeder/Maintainer:	SARC/OARI
3.2.17 Variety:	FLAKIT (EN-25)
3.2.17.1 Year of release:	2007
3.2.17.2 Breeder/Maintainer:	SRARC/ARARI
3.2.18 Variety:	OBSA (ALTAR 84 ALTO-1/AJAYA)
3.2.18.1 Year of release:	2006
3.2.18.2 Breeder/Maintainer:	SARC/OARI
3.2.19 Variety:	EJERSA LABUD/NIGERIS 3/Gan (CD 98206)
3.2.19.1 Year of release:	2005
3.2.19.2 Breeder/Maintainer:	SARC/OARI
3.2.20. Variety:	Bakalcha (980SN Gedirfa / Gwerou #15 patho)
3.2.20.1 Year of release:	2005
3.2.20.2 Breeder/Maintainer:	SARC/OARI
3.2.21. Variety:	Kokate -- (DZ-2016-1BZR-10 205-OAK-2AK (23))
3.2.21.1 Year of release:	2005
3.2.21.2 Breeder/Maintainer:	AwARC/SARI
3.2.22. Variety:	Malefia- (CD 191-076 AR-3AP-OAP 2AP-OAP-AL TAR 84/Stn/)
3.2.22.1 Year of release:	2005
3.2.22.2 Breeder/Maintainer:	SRARC/ARARI
3.2.23. Variety:	Oda (DZ 2227)
3.2.23.1 Year of release:	2004
3.2.23.2 Breeder/Maintainer:	SARC/OARI
3.2.24. Variety:	Ilani (DZ 2234)
3.2.24.1 Year of release:	2004
3.2.24.2 Breeder/Maintainer:	SARC/OARI

Crop Variety Register		Crop Variety Register	
3.2.25. Variety:	Megenagna (DZ - 2023)	3.2.35. Variety:	Asasa (DZ 2085)
3.2.25.1 Year of release:	2004	3.2.35.1 Year of release:	1997
3.2.25.2 Breeder/Maintainer:	ADARC/ARARI	3.2.35.2 Breeder/Maintainer:	DZARC/EIAR
3.2.26. Variety:	Mosobo (DZ - 2178)	3.2.36. Variety:	Arsi-Robe (TOB 66)
3.2.26.1 Year of release:	2004	3.2.36.1 Year of release:	1996
3.2.26.2 Breeder/Maintainer:	ADARC/ARARI	3.2.36.2 Breeder/Maintainer:	DZARC/EIAR
3.2.27. Variety:	Mettaya (DZ - 2212)	3.2.37. Variety:	Quami (CD-75533-A)
3.2.27.1 Year of release:	2004	3.2.37.1 Year of release:	1996
3.2.27.2 Breeder/Maintainer:	ADARC /ARARI	3.2.37.2 Breeder/Maintainer:	DZARC/EIAR
3.2.28. Variety:	Selam (DZ – 1666-2)	3.2.38. Variety:	Bichena (DZ 393-4)
3.2.28.1 Year of release:	2004	3.2.38.1 Year of release:	1995
3.2.28.2 Breeder/Maintainer:	ADARC/ARARI	3.2.38.2 Breeder/Maintainer:	DZARC/EIAR
3.2.29. Variety:	Laste (Tob –2)	3.2.39. Variety:	Kilinto (DZ 918)
3.2.29.1 Year of release:	2002	3.2.39.1 Year of release:	1994
3.2.29.2 Breeder/Maintainer:	SRARC/ARARI	3.2.39.2 Breeder/Maintainer:	DZARC/EIAR
3.2.30. Variety:	Lelisso (DZ-1605)	3.2.40. Variety:	Foka
3.2.30.1 Year of release:	2002	3.2.40.1 Year of release:	1993
3.2.30.2 Breeder/Maintainer:	SARC/OARI	3.2.40.2 Breeder/Maintainer:	DZARC/EIAR
3.2.31. Variety:	Yerer (CD 94026-4Y)	3.2.41. Variety:	Boohai
3.2.31.1 Year of release:	2002	3.2.41.1 Year of release:	1982
3.2.31.2 Breeder/Maintainer:	DZARC/EIAR	3.2.41.2 Breeder/Maintainer:	DZARC/EIAR
3.2.32. Variety:	Ude (CD 95294-2Y)		
3.2.32.1. Year of release:	2002		
3.2.32.2. Breeder/Maintainer:	DZARC/EIAR		
3.2.33. Variety:	Ginchi (DZ-1050)		
3.2.33.1. Year of release:	1999/00		
3.2.33.2. Breeder/Maintainer:	DZARC/EIAR		
3.2.34. Variety:	Robe (DZ-1640)		
3.2.34.1. Year of release:	1998/99		
3.2.34.2. Breeder/Maintainer:	DZARC/EIAR		

4. Triticale (*X-Triticosecale*)

Triticale (*X-Triticosecale*) is a man-made crop developed by crossing wheat (*Triticum turgidum* or *Triticum aestivum*) with Rye (*Secale cereale*). In Ethiopia triticale is a recent introduction. Triticale can be cultivated in a wide range of agro-ecologies, ranging from sea level to over 3000 m.a.s.l. Drought and frost tolerance are the primary advantages that triticale has over other cereal crops. It also exhibits better performance under acidic and degraded soils compared with many other cereals. Triticale has high biomass production and regrowth capacity for grazing. The yield advantage over wheat and barley is also significant.

Triticale is adapted to a wide range of soil conditions ranging from sandy to clay soil types. It requires an average of 500-600 mm rainfall, well distributed during the growing season. However, it can also perform well with as little as 350 mm of seasonal rainfall.

Most cultural practices for growing wheat can be applied directly to triticale. Consequently, the fertilization, seedbed preparation, seeding depth and seeding methods used for wheat are acceptable for triticale. Triticale can be used for making injera, pasta, pastry, bread, tella and beer. Triticale bread and injera products have been well accepted by farmers in South Gondar.

4.1. New varieties

- No new variety released in 2020

4.2 Varieties under production

4.2.1 Variety Name:	Kombolcha (Acc.2012MS #51)
4.2.1.1 Year of release:	2019
4.2.1.2. Breeder/Maintainer:	Bako ARC/ORARI/
4.2.2 Variety Name:	ETCL-161 (CHIMA)
4.2.2.1 Year of release:	2017
4.2.2.2. Breeder/Maintainer:	Holetta ARC/EIAR
4.2.3 Variety Name:	Zenkatie (TCL 59)
4.2.3.1 Year of release:	2013
4.2.3.2. Breeder/Maintainer:	Adet ARC
4.2.4 Variety:	Abdissa (TCL-76)
4.2.4.1 Year of release:	2013
4.2.4.2. Breeder/Maintainer:	BARC/OARI
4.2.5 Variety:	Moti (TCL-61)
4.2.5.1 Year of release:	2013
4.1.5.2. Breeder/Maintainer:	BARC/OARI
4.2.6. Variety:	Dersolign (ADTR-085)
4.2.6.1. Year of release:	2012
4.2.6.2. Breeder/Maintainer:	ADARC
4.2.7 Variety:	TT2 (DILFEKAR)
4.2.7.1. Year of release:	2007
4.2.7.2. Breeder/Maintainer:	KARC/EIAR

4.2.8. Variety:	TT14 (LOGAW SHIBO)
4.2.8.1. Year of release:	2007
4.2.8.2. Breeder/Maintainer:	KARC/EIAR
4.2.9. Variety:	Minet (USGEN 19)
4.2.9.1 Year of release:	2002
4.2.9.2 Breeder/Maintainer:	ADARC/ARARI
4.2.10 Variety:	Snan (95t62-APL9-M)
4.2.10.1 Year of release:	2002
4.2.10.2 Breeder/Maintainer:	ADARC/ARARI

5. Emmer wheat (*Triticum dicoccum*)

Emmer wheat (*Triticum dicoccum*) is not strictly African; it is originated in the Near East. Indeed, it is one of the first cereals ever domesticated and was part of the early agriculture of the Fertile Crescent.

Farmers have it in fields perhaps as far back as 10,000 years ago. For several thousand years it remained a major cereal throughout the Middle East and North Africa. Then people switched to durum wheat, the type now used worldwide to make spaghetti, macaroni and other pastas. Farmers preferred it because its grain was free threshing (the seed fell out of its husk quite easily), and during the past 2,000 years or so the older form, emmer wheat, became an abandoned wheat. At national level, during **2019/20** cropping season **21,281.80** ha of land is covered by Emmer (aja) wheat and about **457,543.61** quintals are produced in this cropping season.

Emmer, locally known as *Aja*, is used in various ways. Some is ground into flour and baked into special bread (*Kita*). Some is crushed and cooked with milk or water to make porridge (*Genfo*). And some is mixed with boiling water and butter to produce gruel. With emmer's high protein content and smooth and easily digestible starch, infants and nursing mothers especially favor the gruel.

5.1. New varieties

- No new variety released in 2020

5.2 Varieties under production

5.2.1 Variety:

Haydaroo (Sinana-01/DZ2212//Sinana-01)

2017

5.2.1.1 Year of release:

5.2.1.2 Breeder/Maintainer:

Sinana ARC/OARI/

5.2.2 Variety:

Lammesso (ACC-224885-2)

2005

5.2.2.1 Year of release:

5.2.2.2 Breeder/Maintainer:

SARC/OARI

5.2.3 Variety:

Sinana-01 (Acc. 216074-1)

2001

5.2.3.1 Year of release:

5.2.3.2 Breeder/Maintainer:

SARC/ OARI

6. Buck wheat (*Fagopyrum esculentum* Moench)

Buck wheat (*Fagopyrum esculentum* Monenich) is a recent introduction where its cultivation_and use is new to Ethiopia. It is relatively low yielder compared to other grain crops, however, its unique characters such as its ability to perform better relatively on poor soils and its quick maturity, suiting areas with very short rains and as a catch crop where other crops failed or planting is delayed, makes it important.

Though the grain is used in ways similar to cereals, buckwheat is a non-cereal, broadleaved herbaceous plant that flowers prolifically over a period of several weeks belonging to polygonaceae family.

The grain is a source of human food where the flour and /or groats could be used for making different recipes either solely or mixed with other cereal grains; it is also a good feed source to poultry and livestock. The extended nectar supply, for a month or more, for bees makes buckwheat popular among beekeepers. Besides, it is also an important smother and green manure crop.

6.1. New varieties

- No new variety released in 2020

6.2. Varieties under production

6.2.1 Variety:

Shashe (Japan)

6.2.1.1 Year of release:

2010

6.2.1.2 Breeder/Maintainer:

DZARC/EIAR

7. Rice (*Oryza sativa L.* or *Oryza glaberrima*)

Rice is the seed of the monocot plants. As a cereal grain, it is the most important staple food for a large part of the world's human population, especially in East and South Asia, the Middle East, Latin America, and the West Indies. It is the grain with the second-highest worldwide production, after maize (corn).

Since a large portion of maize crops are grown for purposes other than human consumption, rice is the most important grain with regard to human nutrition and caloric intake, providing more than one fifth of the calories consumed worldwide by the human species. As a traditional food plant in Africa, its cultivation declined in colonial times, but its production has the potential to improve nutrition, boost food security, and foster rural development and support sustainable land care.

Rice is an annual short day cereal crop (even though some varieties are long day) and grown widely in tropical countries; it needs about 1,800 mm of precipitation annually. At national level, during **2019/20** cropping season **57,575.72** ha of land is covered by this crop with a total yield estimate of about **1,706,301.01** qt. The highest yield is obtained in warm temperature and soil with high clay silt content. Seeds are sown in nurseries at the rate of 60 kg/ha and transplanted to the field 4-6 plants per hill when seedlings are well grown. It needs 90-200 days to mature depending on varieties.

It is a recently introduced cereal crop into Ethiopia and cultivated in Fogera (South Gondar), Pawe (Northwestern part of Ethiopia), Gambela and Southeastern part of the country (irrigated rice). It is also produced in western parts in a small scale. There is lots of potential rice producing areas in Ethiopia.

7. 1. New varieties

7a.1. Upland type

7a.1.1. Variety name: **Pawe-2 (PARC DAT-V-3-2013)**

7a.1.1.1. Agronomic and morphological characteristics:

- Adaptation area: Pawe, Fogera, Assosa, , Gondar, Maitsebri and similar ecologies
- Altitude(masl): 750-1860
- Rain fall(mm): 1100-1457
- Seed rate (kg/ha): 60
- Planting date: Mid June to early July depending on the onset of rainfall
- Spacing (cm): 25 between rows for row drill planting
- Fertilizer rate (kg/ha) and time of application:
 - P₂O₅: 23 (all at planting)
 - N : 69 (1/3 at planting, 1/3 at tillering and 1/3 at panicle initiation)
- Days to heading: 80
- Days to maturity: 118
- Panicle length (cm): 21.1
- Plant height (cm): 97.5
- Thresh ability: Easy
- Lodging incidence: None
- Shattering: Moderately resistant
- Seed size(mm): Slender shape [length (9.2): width (2.5) =7.14]
- Growth habit: Erect
- No. of grains per panicle: 152
- 1000 seed weight (g): 12.34

Crop Variety Register

▪ Caryopsis color:	White
▪ Crop pest reaction:	Resistant to major rice disease
▪ Grain yield (qt/ha):	
○ Research field:	50.59
○ Farmers field:	48.47
7a.1.1.2. Year of release:	2020
7a.1.1.3. Breeder/maintainer:	Pawe ARC/EIAR/

Crop Variety Register

7a. 2 Varieties under production

7a.2.1 Variety name:	Azmera (ART16-5-9-22-2-1-1-B-1-2)
7a.2.1.1 Year of release:	2019
7a.2.1.2 Breeder/maintainer:	Fogera National Rice Research and Training Center /EIAR
7a.2.2 Variety name:	Maitsebri-3 (ARCCU16Bar-9-9-24-4-B-1)
7a.2.2.1 Year of release:	2018
7a.2.2.2 Breeder/maintainer:	Shire-Maitsebri ARC(TARI)
7a.2.3. Variety name:	Fogera 1 (ART15-7-16-30-2-B-B)
7a.2.3.1 Year of release:	2016
7a.2.3.2 Breeder/maintainer:	Fogera NRRTC/, EIAR/
7a.2.4 Variety:	Maytsebri-2 (ARCCU16 Bar-4-14-2-2-B-1)
7a.1.4.1 Year of release:	2016
7a.1.4.2 Breeder/maintainer:	Shire – Maitsebri ARC /TARI/
7a.2.5 Variety name:	ADET (WAB450-1-B-P-462-HB)
7a.2.5.1 Year of release:	2014
7a.2.5.2 Breeder/maintainer:	Adet ARC (ARARI)
7a.2.6 Variety:	Maytsebri-1 (NERICA 13)
7a.1.6.1 Year of release:	2014
7a.1.6.2 Breeder/maintainer:	Maitsebri ARC (TARI)
7a.2.7. Variety:	NERICA-12 (WAB880-1-38-20-17-P1-HB)
7a.2.7.1 Year of release:	2013
7a.2.7.2 Breeder/Maintainer:	Adet ARC

Crop Variety Register		Crop Variety Register	
7a.2.8. Variety:	Hidasse (WAB 515-B- 16A1-2)	7a.2.17. Variety:	NERICA-3 (WAB-450-IB-P-28-HB)
7a.2.8.1 Year of release:	2012	7a.2.17.1 Year of release:	2006
7a.2.8.2 Breeder/Maintainer:	Adet ARC	7a.2.17.2 Breeder/Maintainer:	PARC/ EIAR
7a.2.9. Variety:	Chewaqa (YIN LU20)	7a.2.18. Variety:	Kokit (IRAT-209)
7a.2.9.1 Year of release:	2013	7a.2.18.1 Year of release:	1999/00
7a.2.9.2 Breeder/Maintainer:	Bako ARC/OARI	7a.2.18.2 Breeder/Maintainer:	ADARC/ARARI
7a.2.10. Variety:	ANDASSA (AD-012)	7a.2.19. Variety:	Tigabe (IREM-194)
7a.2.10.1 Year of release:	2007	7a.2.19.1 Year of release:	1999/00
7a.2.10.2 Breeder/Maintainer:	ADARC/ARARI	7a.2.19.2 Breeder/Maintainer:	ADARC/ARARI
7a.2.11. Variety:	TANA (AD-048)	7a.2.20. Variety:	Gumara (IAC-164)
7a.2.11.1 Year of release:	2007	7a.2.20.1 Year of release:	1999/00
7a.2.11.2 Breeder/Maintainer:	ADARC/ARARI	7a.2.20.2 Breeder/Maintainer:	ADARC/ARARI
7a.2.12. Variety:	GETACHEW (AD-01)	7a.2.21. Variety:	Pawe-1 (M-55)
7a.2.12.1 Year of release:	2007	7a.2.21.1 Year of release:	1998/99
7a.2.12.2 Breeder/Maintainer:	ADARC/ARARI	7a.2.21.2 Breeder/Maintainer:	PARC/EIAR
7a.2.13. Variety:	NERICA-2		
7a.2.13.1 Year of release:	2007		
7a.2.13.2 Breeder/ Maintainer:	GoPARC/ SoRPARI		
7a.2.14. Variety:	NERICA-1		
7a.2.14.1 Year of release:	2007		
7a.2.14.2 Breeder/Maintainer:	GoPARC/ SoRPARI		
7a.2.15. Variety:	SUPARICA-1 (WAB-450)		
7a.2.15.1 Year of release:	2006		
7a.2.15.2 Breeder/Maintainer:	PARC/ EIAR		
7a.2.16. Variety:	NERICA-4 (WAB-450-IB-P-9/1)		
7a.2.16.1 Year of release:	2006		
7a.2.16.2 Breeder/Maintainer:	PARC/ EIAR		

7b.1 Low land rice**7b.1. New varieties****7b.1.1. Variety name: Selam (Yungeng 31)****7b.1.1.1. Agronomic and morphological characteristics:**

▪ Adaptation area:	Fogera, Jimma, Dembiya, Shire-maitsebri
○ Altitude(masl):	1350-1810
○ Rain fall(mm):	1296-1561
▪ Seed rate (kg/ha):	60
▪ Planting date:	Early June to late June depending on the onset of rainfall
▪ Spacing (cm):	25 between rows for row drill planting
▪ Fertilizer rate (kg/ha):	
○ P ₂ O ₅	23
○ N	69
▪ Days to heading:	93
▪ Days to maturity:	132
▪ Panicle length (cm):	20
▪ Plant height (cm):	91
▪ Threshability:	Fair
▪ Lodging tolerance:	Good
▪ Shattering:	Fair
▪ Seed size:	Medium
▪ Growth habit:	Erect
▪ No. of grains per panicle:	129
▪ Cold tolerance:	Very good
▪ 1000 seed weight (g):	25
▪ Caryopsis color:	White
▪ Crop pest reaction:	Moderate resistance to major rice diseases
▪ Grain yield (q/t/ha):	
○ Research field:	52
○ Farmers field:	48
7b.1.1.2. Year of release:	2020
7b.1.1.3. Breeder/maintainer:	Fogera NRR & TC/EIAR/

7b.2. Variety under production**7b.2.1 Variety:**Abay (ARCC16
Bar-21-5-12-3-1-2-1)
2017

Fogera NRRT/CIAR/

7b.2.2 Variety:Erib
(WAB880-1-32-1-2-P1-HB)
2017
Fogera NRRT/CIAR/**7b.2.2.1 Year of release:**
7b.2.2.2 Breeder/maintainer:**7b.2.3 Variety:**
7b.2.3.1 Year of release:
7b.2.3.2 Breeder/maintainer:Shaga (Scrid017-1-4-4-4-1)
2017
Fogera NRRT/CIAR/**7b.2.4 Variety:**
7b.2.4.1 Year of release:
7b.2.4.2 Breeder/maintainer:Wanzaye (Scrid006-3-2-3-2)
2017
Fogera NRRT/CIAR/**7b.2.5 Variety:**
7b.2.5.1 Year of release:
7b.2.5.2 Breeder/maintainer:Fogera2 (KOMBOKA)
2016
Fogera NRRT/CIAR/**7b.2.6 Variety:****7b.2.6.1 Year of release:**
7b.2.6.2 Breeder/maintainer:Hiber (IRGA370-38-1-1F-B1-1)
2013
Adet ARC(AARC)**7b.2.7. Variety:****7b.2.7.1 Year of release:**
7b.2.7.2 Breeder/Maintainer:Edget (WAB189-B-B-B-8-HB)
2011
ADARC/ARARI**7b.2.8 Variety:****7b.2.8.1 Year of release:**
7b.2.8.2 Breeder/Maintainer:VRH 606
2013
ViBHA Seeds Ethiopia PLC

Crop Variety Register

7b.2.9 Variety:	VRH 640
7b.2.9.1. Year of release:	2013
7b.2.9.2. Breeder/Maintainer:	ViBHA Seeds Ethiopia PLC
7b.2.10 Variety:	VRH 654
7b.2.10.1 Year of release:	2013
7b.2.10.2 Breeder/Maintainer:	ViBHA Seeds Ethiopia PLC

Crop Variety Register

7c. Irrigated rice

- No new variety released in 2020

7c. 2 Varieties under production

7c.2.1 Variety:	NERICA-6
7c.2.1.1 Year of release:	2011
7c.2.1.2 Breeder/Maintainer:	GoPARC/SoRPARI
7c.2.2 Variety:	NERICA-15
7c.2.2.1 Year of release:	2011
7c.2.2.2 Breeder/Maintainer:	GoPARC/SoRPARI
7c.2.3 Variety:	Kallafo-1/FOFIFA-3737/)
7c.2.3.1 Year of release:	2010
7b.2.3.2 Breeder/Maintainer:	GoPARC/SoRPARI
7c.2.4 Variety:	NERICA-14 (upland type)
7c.2.4.1 Year of release:	2010
7c.2.4.2 Breeder/Maintainer:	GoPARC/SoRPARI
7c.2.5 Variety:	SHEBELLE
	(IR 688059-76-3-3-3-2)
7b.2.5.1 Year of release:	2007
7b.2.5.2 Breeder/Maintainer:	GoPARC/SoRPARI
7c.2.6 Variety:	GODE-1 (BG-90-2)
7c.2.6.1 Year of release:	2007
7c.2.6.2 Breeder/Maintainer:	GoPARC/SoRPARI
7c.2.7 Variety:	HODEN (MTU-1001)
7c.2.7.1 Year of release:	2007
7c.2.7.2 Breeder/Maintainer:	GoPARC/SoRPARI

8. Maize (*Zea mays* L.)

Maize originated in Central America and was introduced to West Africa in the early 1500 A.D by the Portuguese traders. It was introduced to Ethiopia in 16th or 17th century. Today maize is one of the most important food crops worldwide. It is grown in most parts of the world over a wide range of environmental conditions, ranging between 50° latitude north and south of equator. It also grows from sea level to over 3000 meters above sea level.

In Ethiopia, maize grows from moisture stress areas to high rainfall areas and from lowlands to the highlands. It is largely produced in Western, Central, Southern and Eastern parts of the country. In 2019/20 cropping season 2,274,305.93 hectares of land was covered with maize with an estimated production not less than 96,357,345.00 quintals.

In our country maize is produced mainly for food, especially, in major maize producing regions particularly for low-income groups, it is also used as staple food. Maize is consumed as "Injera" Porridge, Bread and "Nefro." It is also consumed roasted or boiled as vegetables at green stage. In addition to the above, it is used to prepare local alcoholic drinks known as "Tella" and "Arekie." The leaf and stalk are used for animal feed and also dried stalk & cob are used for fuel. It is also used as industrial raw material for oil & glucose production.

8.1. New variety

8.1.1. Variety name: **MH141 (WE7210)**

CML539/WMB0001//WMA2002

8.1.1.1. Agronomic and morphological characteristics

- Area of adaptation: Recommended to the low land and mid-altitude dry agro ecologies of Ethiopia.
1000-1800
- Altitude (m.a.s.l): 500-1000
- Rainfall (mm) : 25
- Seed rate (kg/ha): Mid June to late june
(immediately after on the onset of rany)
- Planting date
- Fertilizer rate (kg)
○ NPS: 46 at melkassa and as recommended for other locations
- Urea: 64 at Melkassa, and as recommended for other locations
- Days to anthesis: 71.4
- Days to silking: 72
- Days to maturity: 141
- 1000 kernel weight (gm): 384.75
- Ear height (cm): 100
- Plant height (cm): 181
- Seed color: White
- Pollen color: Pale yellow
- Grain type: Semi-flint
- Grain size: Medium
- Crop pest reaction: Resistant to turicum leaf blight (TLB) and common leaf rust.

Crop Variety Register

- Yield (qt/ha)
 - Research field: 92.5
 - Farmers' field: 65
- 8.1.1.2. Year of release: 2020
- 8.1.1.3. Breeder/maintainer: Melkassa ARC/EIAR/

Crop Variety Register

8.1.2. Variety name: **BH520 W1 (Nada)**

8.1.2.1. Agronomic and morphological characteristics

- Area of adaptation: Recommended to the mid-altitude sub-humid agro-ecologies of Ethiopia
 - Altitude (m.a.s.l): 1000-1800
 - Rainfall (mm): 900-1500
- Seed rate (kg/ha): 25
- Planting date Mid to late May
(immediately after the onset of the rainy season)
- Fertilizer rate (kg)
 - P₂O₅: 69 at Bako, and as recommended for other locations\
 - N: 138
- Male flowering (tasseling): 88.2
- Female flowering (silking): 89.5
- Days to maturity: 155
- 1000 kernel weight (gm): 370
- Grain size: Medium
- Ear height (cm): 134.1
- Plant height (cm): 237.3
- Seed color: White
- Pollen Color: Pale yellow
- Silk color: Pink
- Grain type: Semi-flint
- Kernel row arrangement: Straight
- Ear number of row of grains 14-18
- Crop pest reaction*: Resistant to gray leaf spot (GLS), turcicum leaf blight (TLB) and common leaf rust

Crop Variety Register

- Yield (qt/ha)
 - Research field: 90-130
 - Farmers' field: 76-100
- 8.1.2.2. Year of release: 2020
- 8.1.2.3. Breeder/maintainer: Bako NMRC/EIAR

Crop Variety Register

- 8.1.3. Variety name: **BOS20W1 Sweet corn (White)**
- 8.1.3.1. Agronomic and morphological characteristics
- Area of adaptation: Recommended to the mid-altitude sub-humid and the Rift Valley of Ethiopia.
 - Altitude (m.a.s.l): 1000-1800
 - Rainfall (mm): 900-1500
 - Seed rate (kg/ha): 25
 - Spacing(cm): 75 between rows and 30 between plants
 - Planting date Mid to late May
 - (immediately after the onset of the rainy season)
 - Fertilizer rate (kg)
 - P₂O₅: 69 at Bako, and as recommended for other locations\
 - N: 138
 - Male flowering (tasselling): 69.3
 - Female flowering (silking): 71.1
 - Days to maturity: 140
 - Grain Size: Medium
 - Ear height (cm): 112
 - Plant height (cm): 220
 - Seed color: Yellow
 - Pollen Color: Pale yellow
 - Silk color: Largely white
 - Grain type: Shriveled when dry
 - Total sugar % (fresh) : 6.49
 - Total sugar % (dry): 34.33
 - Kernel row arrangement: Straight
 - Crop pest reaction*: Resistant to gray leaf spot (GLS), turcicum leaf blight

Crop Variety Register	
▪ Yield (qt/ha)	(TLB) and common leaf rust
○ Research field:	51.1 (at immature stage, depend on how early harvested at dough growth stage)
○ Farmers“ field:	-
8.1.3.2. Year of registration:	2020
8.1.3.3. Breeder/maintainer:	Bako NMRC/EIAR
Crop Variety Register	
8.1.4. Variety name: BOS20Y1 Sweet corn (Yellow)	
8.1.4.1. Agronomic and morphological characteristics	
▪ Area of adaptation:	Recommended to the mid-altitude sub-humid and the Rift Valley of Ethiopia.
○ Altitude (m.a.s.l):	1000-1800
○ Rainfall (mm) :	900-1500
▪ Seed rate (kg/ha):	25
▪ Spacing(cm):	75 between rows and 30 between plants
▪ Planting date	Mid to late May (immediately after the onset of the rainy season)
▪ Fertilizer rate (kg)	
○ P ₂ O ₅ :	69 at Bako, and as recommended for other locations\
○ N:	138
▪ Male flowering (tasselling):	68.9
▪ Female flowering (silking):	71.2
▪ Days to maturity:	140
▪ Grain size:	Medium
▪ Ear height (cm):	104
▪ Plant height (cm):	212
▪ Seed color:	Yellow
▪ Pollen Color:	Pale yellow
▪ Silk color:	Largely white
▪ Grain type:	Shriveled when dry
▪ Total sugar % (fresh) :	6.45
▪ Total sugar % (dry):	34.11
▪ Crop pest reaction*:	Resistant to gray leaf spot (GLS), turicum leaf blight (TLB) and common leaf rust

▪ Yield (qt/ha)	
○ Research field:	57.4 (at immature stage, depend on how early harvested at dough growth stage)
○ Farmers“ field:	-
8.1.4.2. Year of registration:	2020
8.1.4.3. Breeder/maintainer:	Bako NMRC/EIAR

8.2. Varieties under production

8.2.1. Variety:	DK7500
8.2.1.1. Year of registration:	2019
8.2.1.2. Breeder/maintainer:	Bayer Life Science Ethiopia PLC
8.2.2. Variety:	CP.201 (IQT5024 X FIF3)
8.2.2.1. Year of release:	2019
8.2.2.2. Breeder/maintainer:	CPP.Seeds PLC
8.2.3. Variety:	CP.838 (SKQPP422 X IFF3)
8.2.3.1. Year of release:	2019
8.2.3.2. Breeder/maintainer:	CPP.Seeds PLC
8.2.4. Variety:	Kortu (P2809W)
8.2.4.1. Year of registration:	2017
8.2.4.2. Breeder/maintainer:	Dupont Pioneer Hi-Bred Seeds Ethiopia
8.2.5. Variety:	BH549 Ilu አቶ (BKL4/ BKL003)
8.2.5.1. Year of release:	2017
8.2.5.2. Breeder/maintainer:	Bako National Maize Research Program/ EIAR
8.2.6. Variety:	Afran Qaloo (HrU 28)
8.2.6.1. Year of release:	2017
8.2.6.2. Breeder/maintainer:	Haramaya University
8.2.7. Variety:	Baate (HrU 22)
8.2.7.1. Year of release:	2017
8.2.7.2. Breeder/maintainer:	Haramaya University
8.2.8. Variety:	DK008
8.2.8.2. Year of registration:	2017
8.2.8.3. Breeder/maintainer:	Bayer Life Science Ethiopia PLC

Crop Variety Register		Crop Variety Register	
8.2.9. Variety:	Leku / DK777 /	8.2.18. Variety:	CPS 6
8.2.9.2. Year of registration:	2017	8.2.18.2. Year of registration:	2013
8.2.9.3. Breeder/maintainer:	Bayer Life Science Ethiopia PLC	8.2.18.3. Breeder/maintainer:	CPP SEEDS PLC
8.2.10. Variety:	AMH852Q	8.2.19. Variety:	CPS 10
8.2.10.1. Year of release:	2016	8.2.19.2. Year of registration:	2013
8.2.10.2. Breeder/maintainer:	AmboPlant Protection Research Center/EIAR/	8.2.19.3. Breeder/maintainer:	CPP SEEDS PLC
8.2.11 Variety	AMH853	8.2.20. Variety:	BH546 (CML395 X CML202X BKL1)
8.2.11.1..Year of release:	2016	8.2.20.1. Year of release:	2013
8.2.11.2. Breeder/Maintainer	AmboPlant Protection Research Center/EIAR/	8.2.20.2. Breeder/Maintainer:	Bako N M RC/EIAR
8.2.12. Variety:	Damote (P3506W)	8.2.21. Variety:	BH547
8.2.12.1. Year of registration:	2015	8.2.21.1. Year of release:	(BKL2/CML312/BKL3/)
8.2.12.2. Breeder/maintainer:	DuPont Pioneer Hi-Bred Seeds Ethiopia	8.2.21.2. Breeder/Maintainer:	2013
8.2.13 Variety	SPRH1 Hybrid	8.2.22. Variety:	Bako N M RC/EIAR
8.2.13.1..Year of release:	2015	8.2.22.1. Year of release:	Melkasa-1Q
8.2.13.2. Breeder/Maintainer	Bako N M RC/EIAR	8.2.22.2. Breeder/Maintainer:	2013
8.2.14. Variety:	SBRH1 Hybrid	8.2.23. Variety:	Melkasa ARC/EIAR
8.2.14.1. Year of release:	2015	8.2.23.1. Year of release:	(Melkasa Hybrid 140)
8.2.14.2. Breeder/Maintainer:	Bako N M RC/EIAR-	8.2.23.2. Breeder/Maintainer:	(CML444CZL0003)'/
8.2.15. Variety:	BHQP548 Hybrid	8.2.23.3. Year of release:	/CZL0814
8.2.12.1. Year of release:	2015	8.2.23.4. Breeder/Maintainer:	2013
8.2.12.2. Breeder/Maintainer:	Bako N M RC/EIAR	8.2.23.5. Variety:	Melkasa ARC/EIAR
8.2.16. Variety:	Gibe3 Open Pollinated	8.2.24. Variety:	PAC 781
8.2.16.1. Year of release:	2015	8.2.24.1. Year of registration:	2013
8.2.16.2. Breeder/Maintainer:	Bako N M RC/EIAR	8.2.24.2. Breeder/Maintainer:	GCT Trading
8.2.17. Variety:	SC 719	8.2.25. Variety:	Galaxy
8.2.17 1.Year of registration:	2014	8.2.25.1. Year of registration:	2013
8.2.17.2. Breeder/Maintainer:	Seed Co Zimbabwe (plc)	8.2.25.2. Breeder/Maintainer:	GCT Trading

Crop Variety Register		Crop Variety Register	
8.2.26 Variety:	MH 130 (CML440/CML445// ZIMLINE/KAT BC124#)	8.2.34 Variety:	GIBE 2
8.2.26.1 Year of release:	2012	8.2.34.1 Year of release:	2011
8.2.26.2. Breeder/Maintainer	MARC /EIAR	8.2.34.2. Breeder/Maintainer:	Bako NMRC /EIAR
8.2.27 Variety	HQ 138	8.2.35 Variety:	Shala (P2859W)
8.2.27.1 Year of release:	2012	8.2.35.1 Year of registration:	2011
8.2.27.2. Breeder/Maintainer:	MARC /EIAR	8.2.35.2. Breeder/Maintainer:	Pioneer Hi-bred seeds Ethiopia Plc
8.2.28 Variety:	Giba –Awash Fendisha	8.2.36. Variety:	Jibat (AMH851)
8.2.28.1 Year of release:	2012	8.2.36.1 Year of release:	2009
8.2.28.2. Breeder/Maintainer:	Bako NMRC/EIAR	8.2.36.2. Breeder/Maintainer:	Ambo Plant Protection Research Center EIAR/
8.2.29 Variety:	Webi (AMH760Q)	8.2.37. Variety:	ZAMA
8.2.29.1 Year of release:	2012	8.2.37.1. Year of register:	2009
8.2.29.2. Breeder/Maintainer:	APRC (EIAR)	8.2.37.2. Breeder/Maintainer:	Red Speckled Ethiopia Trading
8.2.30 Variety:	Limu (P3812W)	8.2.38 Variety:	Morka (UCBS ₁ C ₂)
8.2.30.1. Year of registration:	2012	8.2.38.1 Year of release:	2008
8.2.30.2. Breeder/Maintainer:	Pioneer hi-bred seeds in Ethiopia	8.2.38.2 Breeder/Maintainer:	JARC/CIAR
8.2.31 Variety:	SC-403	8.2.39 Variety:	Kello-1 (BHQPY-545)
8.2.31.1 Year of registration:	2012	8.2.39.1 Year of release:	2008
8.2.31.2 Breeder/Maintainer:	Seedco	8.2.39.2 Breeder/Maintainer:	EIAR/ Bako National Maize Research Project
8.2.32 Variety:	Hawassa-1 (ESE-237)	8.2. 40 Variety:	Melkasa- 6Q
8.2.32.1 Year of release:	2012	8.2. 40.1. Year of release:	(Pool 15 C ₇ QPM
8.2.32.2 Breeder/Maintainer:	Ethiopia Seed Enterprise (ESE)	8.2. 40.2. Breeder/maintainer:	2008
8.2.33 Variety:	BH661 (CML395 x CML202 x 142-1-e)	8.2.41 Variety:	EIAR/MARC
8.2.33.1 Year of release:	2011	8.2.41.1. Year of release:	Melkasa-7 (Pop 147 C ₁)
8.2.33.2. Breeder/Maintainer:	Bako NMRC/EIAR	8.2.41.2 .Breeder/maintainer:	2008
		8.2.42 Variety:	EIAR/MARC
		8.2.42.1 Year of release:	Melkasa- 5 (SADVIB#)
		8.2.42.2 Breeder/maintainer:	2008

Crop Variety Register	
8.2.43 Variety:	AMH850-“Wenchi”
8.2.43.1 Year of release:	2008
8.2.43.2 Breeder/maintainer:	EIAR/Ambo Plant Protection Research Center
8.2.44 Variety:	Shone (Phb30G19)
8.2.44.1 Year of registration:	2006
8.2.44.2 Breeder/Maintainer:	Pioneer Hi-Breed Seeds Ethiopia P.L.C.
8.2.45. Variety:	Aba raya (Sc 627)
8.2.45.1 Year of registration:	2006
8.2.45.2 Breeder/Maintainer:	Syngenta Agro-services AG-Ethiopia
8.2.46 Variety:	Melkassa-4 (ECA-EE-36)
8.2.46.1 Year of release:	2006
8.2.46.2 Breeder/Maintainer:	MARC/EIAR
8.2.47 Variety:	Bako-1 SC-22XFH-625-263 XCML - 197 (BH-544)
8.2.47.1 Year of release:	2006
8.2.47.2 Breeder/Maintainer:	Bako National Maize Research Project/EIAR
8.2.48 Variety:	Arganne (AMH-800)
8.2.48.1 Year of release:	2005
8.2.48.2 Breeder/Maintainer:	EIAR/Ambo Highland maize research center
8.2.49 Variety:	Hora (Ambo 2 syn1)
8.2.49.1 Year of release:	2005
8.2.49.2 Breeder/Maintainer:	EIAR/Ambo Plant Protection Research Center Highland Maize Research Project/
8.2.50 Variety:	BH -543 (SC-22 x124-b (109) X cml -197)
8.2.50.1 Year of release:	2005
8.2.50.2 Breeder/Maintainer:	EIAR/Bako National Maize

Crop Variety Register	
8.2.51 Variety:	Bereda SC 715 hybrid (SP13w x SP57w x sp59w)
8.2.51.1 Year of registration:	2005
8.2.51.2 Breeder/Maintainer:	Syngenta
8.2.52 Variety:	Beles SC 713 hybrid (SP13w Xsp51w)
8.2.52.1 Year of registration:	2005
8.2.52.2 Breeder/Maintainer:	Syngenta
8.2.53 Variety:	Toga (ESE-203 hybrid)
8.2.53.1 Year of release:	2005
8.2.53.2 Breeder/Maintainer:	Ethiopian Seed Enterprise
8.2.54 Variety:	Melkassa -2 (ZM-521)
8.2.54.1 Year of release:	2004
8.2.54.2 Breeder/Maintainer:	MARC/EIAR
8.2.55 Variety:	Melkassa-3 (SADVE)
8.2.55.1 Year of release:	2004
8.2.55.2 Breeder/Maintainer:	MARC/EIAR
8.2.56 Variety:	BH-670 (A-7033xF-7215x144-7-b)
8.2.56.1 Year of release:	2002
8.2.56.2 Breeder/Maintainer:	BARC/EIAR
8.2.57 Variety:	BH-QP-542 (CML-144XCML-159 X CML-176)
8.2.57.1 Year of release:	2002
8.2.57.2 Breeder/Maintainer:	BARC/EIAR
8.2.58 Variety:	Gusaw (Gambella Composite)
8.2.58.1 Year of release:	2002
8.2.58.2 Breeder/Maintainer:	BARC/EIAR

Crop Variety Register	
8.2.59 Variety:	BH-541 (NSCM-41-188/32/X CML-197)
8.2.59.1 Year of release:	2002
8.2.59.2 Breeder/Maintainer:	BARC/EIAR
8.2.60 Variety:	Gibe Comp-1 (MMRC-51)
8.2.60.1 Year of release:	2001
8.2.60.2 Breeder/Maintainer:	BARC/EIAR
8.2.61 Variety:	Melkassa-1
8.2.61.1 Year of release:	2001
8.2.61.2 Breeder/Maintainer:	MARC/EIAR
8.2.62 Variety:	Raare-1(EV-1)
8.2.62.1 Year of release:	1997/98
8.2.62.2 Breeder/Maintainer:	AU
8.2.63 Variety:	Tesfa (ACV6)
8.2.63.1 Year of release:	1996
8.2.63.2 Breeder/Maintainer:	ACA
8.2.64 Variety:	Fetene (ACV3)
8.2.64.1 Year of release:	1996
8.2.64.2 Breeder/Maintainer:	ACA
8.2.65 Variety:	Kuleni
8.2.65.1 Year of release:	1995
8.2.65.2 Breeder/Maintainer:	BARC/EIAR
8.2.66 Variety:	BH540
8.2.66.1 Year of release:	1995
8.2.66.2 Breeder/Maintainer:	BARC/EIAR
8.2.67 Variety:	Jabi (PHB 3253)
8.2.67.1 Year of registration:	1995
8.2.67.2 Breeder/Maintainer:	Pioneer Hi-Bred Seeds Ethiopia P.L.C

Crop Variety Register	
8.2.68 Variety:	BH 660
8.2.68.1 Year of release:	1993
8.2.68.2 Breeder/Maintainer:	/BARC/EIAR
8.2.69 Variety:	BH 140
8.2.69.1 Year of release:	1988
8.2.69.2 Breeder/Maintainer:	BARC/EIAR
8.2.70 Variety:	Guto
8.2.70.1 Year of release:	1988
8.2.70.2 Breeder/Maintainer:	BARC/EIAR
8.2.71 Variety:	Katumani
8.2.71.1 Year of release:	1974
8.2.71.2 Breeder/Maintainer:	BARC/EIAR/
8.2.72 Variety:	Alemaya Composite
8.2.72.1 Year of release:	1973
8.2.72.2 Breeder/Maintainer:	Haramaya University
8.2.73 Variety:	A-511
8.2.73.1 Year of release:	1973
8.2.73.2 Breeder/Maintainer:	AwARC

9. Sorghum (*Sorghum bicolor*)

S. bicolor is the cultivated species of sorghum; its wild relatives make up the botanical genus *Sorghum*. It is cultivated for its edible grain. *Sorghum* originated in northern Africa, and is now cultivated widely in tropical and subtropical regions. *S. bicolor* is typically an annual, but some cultivars are perennial. It grows in clumps that may reach over 4 meters high. The grain is small, ranging from 3 to 4 mm in diameter. Sweet sorghums are sorghum cultivars that are primarily grown for foliage; they are shorter than those grown for grain.

The species can grow in arid soils and withstand prolonged droughts. It has four features which make it one of the most drought resistant crops of all i.e., i) it has a very large root-to-leaf surface area ii) in times of drought it will roll its leaves to lessen water-loss by transpiration iii) if drought continues, it will go into dormancy rather than dying and iv) its leaves are protected by a waxy cuticle.

Sorghum is one of the major crops produced in Ethiopia, and it is the fourth important crop in terms of area coverage and volume of production. It is adapted to a wide range of environment, and hence can be produced in the high lands, medium altitude and low land areas. It is widely produced more than any other crops, in the areas where there is moisture stress. In **2019/20** cropping season, sorghum is produced on about **1,828,182.49** ha of land from which **52,655,800.59** quintals of yield are obtained.

Sorghum is used in various ways in our country. The grains are used for human foods such as Porridge, "Nefro," infant food, syrup, and local beverages known as "Tella"" and "Arekie"". Also the leaf and stalk are used for animal feed and further the stalks are also used for construction of houses and fences, and as fuel wood.

9.1. New variety

9.1.1. Variety name: **Marara [ETSL 101371 (Acc.212642)]**

9.1.1.1. Agronomic and morphological characteristics

▪ Adaptation area:	Western Oromia (Bako, Gute, Uke, Billo Bosh and similar agro ecologies
○ Altitude (masl):	1200-1950
○ Rainfall(mm):	950-1250
▪ Seed rate (kg/ha):	12
▪ Spacing(cm):	75 between rows and 15 between plants
▪ Planting date:	early to mid may
▪ Fertilizer rate(kg/ha):	
○ NPS:	100 all at planting
○ Urea:	100 Split Application (half at planting , half 35 days after emergence)
▪ Days to flowering:	99
▪ Days to maturity:	156
▪ Plant height(cm):	366.5
▪ 1000 seed weight (g):	26.5
▪ Seed color:	Red
▪ Growth habit:	Erect
▪ Panicle type:	Semi compact
▪ Crop pest reaction*:	
▪ Grain yield (qt/ha):	
○ Research station:	46-53.5
○ Farmers" field:	39-51
9.1.1.2. Year of release:	2020
9.1.1.3. Breeder/ maintainer:	Bako ARC/ORARI/

*Tolerant to major sorghum diseases (Leaf, Head disease),
Tolerant to Bird attack

9.1.2. Variety name: **Beletew (ICSR24005)**

9.1.2.1. Agronomic and morphological characteristics

- Adaptation Area: Debrebirhan (Shewarobit, Ataye, Merhabete), Kobo (Sirinka), Tach Armachiho (Gondar) and similar agroecology
 - Altitude (masl): 1200-1500
 - Rainfall(mm): 800-1100
- Seed rate (kg/ha): 10-13 for row sowing
15-20 for broadcasting
- Spacing (cm): 75 between rows; 15 between plants
- Planting date: First and second week of July
- Fertilizer rate(kg/ha):
 - NPS: 121
 - Urea: 90
- Days to heading : 73
- Days to maturity: 127
- Plant height(cm): 144
- 1000 seed weight (g): 23
- Inflorescence compactness and shape: Semi-compact; oval
- Seed color: White
- Crop pest reaction*:
 - Research station: 43
 - Farmers'' field: -

9.1.2.2. Year of release: 2020

9.1.2.3. Breeder/ maintainer: Debrebrehan ARC/ARARI/

* Resistant to sorghum midge insect pest, and free from Anthracnose disease

9.1.3. Variety name: **Sadii (SLRC-046)**

9.1.3.1. Agronomic and morphological characteristics

- Adaptation area: Kellem Wollega, West Wollega zones and similar agro-ecologies
 - Altitude (masl): 1400-1900
 - Rainfall(mm): 1000-2100
- Seed rate (kg/ha): 10 for row sowing
- Spacing(cm): 75 between rows
- Planting date: 15 between plants
- Fertilizer rate(kg/ha):
 - NPS: Late May to early June
 - Urea : 100 at planting time
- Days to flowering: 100 half at planting and half at knee stage
- Days to maturity: 131
- Plant height(cm): 183
- 1000 seed weight (g): 344
- Seed color: 32.48
- Inflorescence compactness: Gray
- Crop pest reaction*:
 - Research station: Semi Compact
 - Farmers'' field: 131
- Grain yield (qt/ha):
 - Research station: 50.17
 - Farmers'' field: 48.3

9.1.3.2. Year of release: 2020

9.1.3.3. Breeder/ maintainer: Haro sebu ARC/ORARI

* Tolerant to major pest of sorghum (Stem borer, Anthracnose leaf blight, leaf spot, die back etc.

9.2. Varieties under production

9.2.1. Variety:

ጥላሁን (Tilahun)
14MWLSDT7114
(2005MI5060/E-36-1)

9.2.1.1. Year of release:

2019

9.2.1.2. Breeder/ maintainer:

Melkasa ARC/EIAR/

9.2.2. Variety:

SIMA (Kalu)

9.2.2.1. Year of release:

2019

9.2.2.2. Breeder/ maintainer:

Sirinka ARC/ARARI/

9.2.3. Variety:

Elemo (Acc.237261))

9.2.3.1. Year of release:

2019

9.2.3.2. Breeder/ maintainer:

Mechara ARC/ORARI

9.2.4. Variety:

Fadis 01
(M-36121 X P- 9403)

9.2.4.1. Year of release:

2019

9.2.4.2. Breeder/ maintainer:

Fedis ARC/ORARI

9.2.5. Variety:

9058 (ESH-5)
(P9511A/PRL020817)

9.2.5.1. Year of release:

2018

9.2.5.2. Breeder/ maintainer:

Melkasa ARC/EIAR/

9.2.6. Variety:

Mentebteb (Debir)
(Malt sorghum)

9.2.6.1. Year of release:

2018

9.2.6.2. Breeder/ maintainer:

Melkasa ARC/EIAR

9.2.7. Variety:

የጊዢ (07MW6085)
(97BK6129/85MW4138)

9.2.7.1. Year of release:

2017

9.2.7.2. Breeder/ maintainer:

Melkasa ARC/EIAR/

9.2.8. Variety:

ክርት (2005M15064)

(Early maturing type)

2017

Melkasa ARC/EIAR/

9.2.9. Variety:

Alene (WSV-387 x E-36-2)

2017

Sirinka ARC/ARARI

9.2.10. Variety:

ESH-4 (PU209A/PU304)

2016

MARC/EIAR

ከራለ (ACC#70583)

2016

MARC/EIAR

ጃሩ (Jiru) (yellow)

/ETS-2752)

2016

MARC/EIAR

ደባብ (ETS 639/SRN-39)

2015

MARC/EIAR

Adukara

2015

Assosa ARC/EIAR

Assosa-1 (Bambasi no-9)

2015

Assosa AR/EIAR

9.2.15. Variety:

9.2.15.1 Year of release:

9.2.15.2 Breeder/ maintainer: -

9.2.16. Variety:

9.2.16.1. Year of release

9.2.16.2. Breeder/maintainer

Fendisha-1

2015

Haramaya University

Crop Variety Register	
9.2.17. Variety:	ESH-3 የኢ.ፌ.ዲ. - 3 (ICSA-15 X M-5568)
9.2.17.1. Year of release:	2014
9.2.17.2. Breeder/Maintainer:	MARC/EIAR
9.2.18. Variety	PAC 537
9.2.18.1. Year of release:	2013
9.2.18.1. Breeder/Maintainer:	GCT/MARC (Advanta Seed International)
9.2.19. Variety	Chemedha (Acc- BRC-18)
9.2.19.1. Year of release:	2013
9.2.19.2. Breeder/Maintainer:	BARC/OARI
9.2.20. Variety:	Gemedi (ACC-BCC-5)
9.2.20.1 Year of release:	2013
9.2.20.2. Breeder/Maintainer:	BARC/OARI
9.2.21. Variety:	Dekeba (ICSR 24004)
9.2.21.1. Year of release:	2012
9.2.21.2. Breeder/Maintainer:	MARC/EIAR
9.2.22. Variety:	Mesay (Meko X Gobye-2)
9.2.22.1. Year of release:	2011
9.2.22.2. Breeder/Maintainer:	SARC/ARARI
9.2.23. Variety	Dagem (97 MW 6130)
9.2.23.1. Year of release:	2011
9.2.23.2. Breeder/Maintainer:	MARC/EIAR
9.2.24. Variety:	Chare/PGRC/E#222880/
9.2.24.1. Year of release:	2011
9.2.24.2. Breeder/Maintainer:	DBARC/ARARI/
9.2.25. Variety:	Melkam (WSV 387)
9.2.25.1. Year of release:	2009
9.2.25.2. Breeder/Maintainer:	MARC/EIAR
Crop Variety Register	
9.2.26. Variety:	ESH-1
9.2.26.1 Year of release:	2009
9.2.26.2. Breeder/Maintainer:	MARC/EIAR
9.2.27. Variety:	ESH-2
9.2.27.1 Year of release:	2009
9.2.27.2. Breeder/Maintainer:	MARC/EIAR
9.2.28. Variety:	GEDO (Striga resistant)
9.2.28.1 Year of release:	2007
9.2.28.2 Breeder/Maintainer:	SRARC/ARARI
9.2.29 Variety:	87 BK -4122 (GEREMEW) (Food type)
9.2.29.1 Year of release:	2007
9.2.29.2 Breeder/Maintainer:	MARC/EIAR
9.2.30 Variety:	RED SWAZI (Malting type)
9.2.30.1 Year of Registration:	2007
9.2.30.2 Breeder/Maintainer:	MARC/EIAR
9.2.31. Variety:	MACIA (Malting type)
9.2.31.1 Year of Registration:	2007
9.2.31.2. Breeder/Maintainer:	MARC/EIAR
9.2.32 Variety:	Sorghum EMAHOY (Pw01-092)
9.2.32.1 Year of release:	2007
9.2.32.2 Breeder/Maintainer:	PARC/EIAR
9.2.33 Variety:	RAYA (PGRC/ EX222878XKAT369-1)
9.2.33.1 Year of release:	2007
9.2.33.2 Breeder/Maintainer:	SRARC/ARARI

Crop Variety Register

9.2.34 Variety:	MISKIR (PGRC/E#69441XP-9401) (Early maturing)
9.2.34.1 Year of release:	2007
9.2.34.2 Breeder/Maintainer:	SRARC/ARARI
9.2.35. Variety:	GIRANA-1 (Early maturing)
9.2.35.1 Year of release:	2007
9.2.35.2 Breeder/Maintainer:	SRARC/ARARI
9.2.36 Variety:	Lalo (BRC-245)
9.2.36.1 Year of release:	2006
9.2.36.2 Breeder/Maintainer:	BARC/OARI
9.2.37 Variety:	Dano (BRC-378)
9.2.37.1 Year of release:	2006
9.2.37.2 Breeder/Maintainer:	BARC/OARI
9.2.38 Variety:	Chelenko ETS 1176
9.2.38.1 Year of release:	2005
9.2.38.2 Breeder/Maintainer:	MARC/EIAR
9.2.39 Variety:	Hormat -- (ICSV 1112 BF)
9.2.39.1 Year of release:	2005
9.2.39.2 Breeder/Maintainer:	SRARC/ARARI
9.2.40 Variety:	Abuare (90MW 5353)
9.2.40.1 Year of release:	2003
9.2.40.2 Breeder/Maintainer:	SRARC/ARARI
9.2.41. Variety:	Birhan (Key#8566)
9.2.41.1 Year of release:	2002
9.2.41.2 Breeder/Maintainer:	SRARC/ARARI
9.2.42 Variety:	Teshale (3443-2-0P)
9.2.42.1 Year of release:	2002
9.2.42.2 Breeder/Maintainer:	SRARC/ARARI and MARC/EIAR

Crop Variety Register

9.2.43 Variety:	Yeju (ICSV 111 Inc)
9.2.43.1 Year of release:	2002
9.2.43.2 Breeder/Maintainer:	/SRARC/ARARI
9.2.44 Variety:	Aba-Melko (Sartu)
9.2.44.1 Year of release:	2001
9.2.44.2 Breeder/Maintainer:	JARC/EIAR
9.2.45 Variety:	Muyra-1 (EST-1005)
9.2.45.1 Year of release:	2000
9.2.45.1 Breeder/Maintainer:	HU
9.2.46 Variety:	Muyra-2 (EST-567)
9.2.46.1 Year of release:	2000
9.2.46.2 Breeder/Maintainer:	HU
9.2.47 Variety:	Gubiye (P-9401)
9.2.47.1 Year of release:	2000
9.2.47.2 Breeder/Maintainer:	MARC/EIAR
9.2.48 Variety:	ABSHIR (P-9403)
9.2.48.1 Year of release:	2000
9.2.48.2 Breeder/Maintainer:	MARC/EIAR
9.2.49 Variety:	MEKO-1 (M – 36121)
9.2.49.1 Year of release:	1997
9.2.49.2 Breeder/Maintainer:	MARC/EIAR
9.2.50 Variety:	Baji (85 MW 5334)
9.2.50.1 Year of release:	1996
9.2.50.2 Breeder/Maintainer:	MARC/EIAR
9.2.51 Variety:	Chiro (Coll#4)
9.2.51.1 Year of release:	1996
9.2.51.2 Breeder/Maintainer:	MARC/EIAR
9.2.52 Variety:	Birmash
9.2.52.1 Year of release:	1989
9.2.52.2 Breeder/Maintainer:	MARC/EIAR

9.2.53 Variety:	Seredo
9.2.53.1 Year of release:	1986
9.2.53.2 Breeder/Maintainer:	MARC/EIAR
9.2.54 Variety:	Dinkimash
9.2.54.1 Year of release:	1986
9.2.54.2 Breeder/Maintainer:	MARC/EIAR
9.2.55 Variety:	IS 9302
9.2.55.1 Year of release:	1981
9.2.55.2 Breeder/Maintainer:	MARC/EIAR
9.2.56. Variety:	76TI# 23
9.2.56.1 Year of release:	1979
9.2.56.2 Breeder/Maintainer:	MARC/EIAR
9.2.57 Variety:	Gambella 1107
9.2.57.1 Year of release:	1976
9.2.57.2 Breeder/Maintainer:	MARC/EIAR

10. Finger millet (*Eleusine coracana*.)

Finger millet, Amharic የንብ "Dagusa" also known as African millet, is an annual plant widely grown as a cereal in the arid areas of Africa and Asia. Finger millet is originally native to the Ethiopian Highlands and was introduced into India approximately 4000 years ago. It is very adaptable to higher elevations and is grown in the Himalaya up to 2,300 meters in elevation. The cultivation of this crop is relatively easy and it has been found to be reliable under circumstances where other cereal crops would have failed due to drought or would have given negligible yield.

Though millets can produce good yield on marginal soils, they also respond very well to fertilizer application and good management. It grows on a wide range of soils but prefer reasonably fertile sandy soils. According to the Central Statistics Agency report of **2019/20** cropping season, finger millet was produced on about **455,580.47** ha of land from which **11,259,578.67** quintals were obtained during the Meher season. The nutritional value of the grain is high and it is used as an important staple food and generally consumed as porridge.

In Ethiopia, finger millet is produced in North Gonder, East Gojam, some parts of Tigray and West Wollega. The seed should be planted into a well-prepared seedbed, not deeper than 2-3 cm. Finger millet requires a well-distributed rainfall during growth, due to its extensive but shallow root system. Whilst moisture requirement is rather high, the crop should be grown on well drained soils with average annual rainfall above 800-900mm.

10.1 New variety

10.1.1. Variety name: Metekili (Acc. 005pw-2012)

10.1.1.1. Agronomic and morphological characteristics

▪ Adaptation Area:	Western part of Ethiopia, (Awil and Metekel Zone) & similar agro ecologies.
○ Altitude (masl):	1000-2000
○ Rainfall(mm):	1200-1700
▪ Seed rate(kg/ha):	8 for row planting and 15 for broad casting
▪ Spacing (cm):	40 between rows & 10 between plants
▪ Planting date:	Early June
▪ Fertilizer rate(kg/ha):	
○ DAP:	100 all at planting time
○ Urea:	50 (half at planting, half 30 days after emergence)
▪ Days to heading:	105
▪ Days to maturity :	155
▪ 1000 seed weight(g):	3
▪ Plant height(cm):	93.7
▪ Finger length(Cm) :	11.4
▪ Finger per ear:	8.8
▪ Finger type:	Semi loose with double strand
▪ Seed color:	Brown red
▪ Growth habit:	Erect
▪ Crop pest reaction*:	
▪ Yield (qt/ha):	
○ Research field:	28-38
○ Farmers'' field:	25.5- 30
10.1.1.2. Year of release:	2020
10.1.1.3. Breeder/Maintainer:	Pawe ARC/EIAR/

*Resistant to Blast diseases under natural condition

10.2 Varieties under production

10.2.1. Variety:

Kumsa [BKFM 0063 (1)]

2019

Shire-MaitsebribARC
(TARI)

10.2.2. Variety:

Jabi (ጃብ) (PGRC/E)

Acc. 229626

2019

Adet ARC/ARARI

10.2.3. Variety:

Tekeze-1

(SMARC coll.L60)

2018

Shire-MaitsebribARC
(TARI)

10.2.3.1. Year of release:

10.2.3.2. Breeder/Maintainer:

Diga-2 (Acc.BKFM0010)

2018

Bako ARC/ORARI

Bako-09 (Acc.214995)

2017

Bako ARC/ORARI

መብ (GBK- 011119A)

2016

Melkassa ARC/EIAR

አክሳ (ACC #229355)

2016

Melkassa ARC/EIAR

10.2.6. Variety:

10.2.6.1. Year of release:

10.2.6.2. Breeder/Maintainer:

10.2.7. Variety:

10.2.7.1. Year of release:

10.2.7.2. Breeder/maintainer:

10.2.8. Variety:

10.2.8.1. Year of release:

10.2.8.2. Breeder/Maintainer:

Crop Variety Register	
10.2.9. Variety:	Urji (Acc. 242617)
10.2.9.1. Year of release:	2016
10.2.9.2. Breeder/Maintainer:	BARC/OARI
10.2.10. Variety:	Mereb-1 (KNE#622)
10.2.10.1. Year of release:	2016
10.2.10.2. Breeder/Maintainer:	Axum ARC/TARI
10.2.11. Variety:	Kako-1(LR005)
10.2.11.1. Year of release:	2015
10.2.11.2. Breeder/Maintainer:	Jinka ARC/SARI
10.2.12. Variety:	Addis-01 (Acc.203544)
10.2.12.1. Year of release:	2015
10.2.12.2. Breeder/maintainer:	AAU and (OARI/BARC)
10.2.13. Variety:	Tessema (ተሰማ)
	ACC # 229469:
10.2.13.1. Year of release:	2014
10.2.13.2. Breeder/Maintainer:	EIAR/MARC
10.2.14. Variety:	Gudetu (<i>Acc.215990</i>)
10.2.14.1. Year of release:	2014
10.2.14.2. Breeder/Maintainer:	BARC/OARI
10.2.15. Variety:	Mecha (መሻ)
	(PGRC/E Acc # 229371)
10.2.15.1. Year of release:	2014
10.2.15.2. Breeder/Maintainer:	ADARC/ARARI
10.2.16. Variety:	Necho (PGRC/E 203572)
10.2.16.1 Rear of release:	2011
10.2.16.2. Breeder/maintainer:	ADARC/ARARI
10.2.17. Variety:	Debatsi (Éví=)
10.2.17.1 Rear of release:	2010
10.2.17.2. Breeder/maintainer:	EIAR/PARC

Crop Variety Register	
10.2.18. Variety	BAREDA (BRE 356-1)
10.2.18.1. Year of release:	2009
10.2.18.2. Breeder / maintainer:	BARC/OARI
10.2.19 .Variety:	GUTE (229373)
10.2.19.1. Year of release:	2009
10.2.19.2. Breeder / maintainer:	BARC/OARI
10.2.20. Variety:	WAMA (KNE#392)
10.2.20.1 Year of release:	2007
10.2.20.2 Breeder/Maintainer:	BARC/OARI
10.2.21. Variety:	BARUDA (Pw01-075)
10.2.21.1 Year of release:	2007
10.2.21.2 Breeder/Maintainer:	PARC/EIAR
10.2.22 Variety:	Degu (PGRC/E 215874)
10.2.22.1 Year of release:	2005
10.2.22.2 Breeder/Maintainer:	ADARC/ARARI
10.2.23 Variety:	Boneya (KNE#411)
10.2.23.1 Year of release:	2002
10.2.23.2 Breeder/Maintainer:	BARC/OARI
10.2.24 Variety:	Padet (KNE # 409)
10.2.24.1 Year of release:	1998/99
10.2.24.2 Breeder/Maintainer:	MARC/EIAR
10.2.25 Variety:	Tadesse (KNR # 1098)
10.2.25.1 Year of release:	1998/99
10.2.25.2 Breeder/Maintainer:	MARC/EIAR

11. Pearl millet (*Pennisetum glaucum* (L.)R. Br.)

Pearl millet is the most widely grown type of millet. Grown in Africa and the Indian subcontinent since prehistoric times, it is generally accepted that pearl millet originated in Africa and was subsequently introduced into India. Its origin has been traced to tropical Africa. The center of diversity for the crop is in the Sahel zone of West Africa. Cultivation subsequently spread to east and southern Africa, and southern Asia.

Pearl millet is well adapted to production systems characterized by drought, low soil fertility, and high temperature. It performs well in soils with high salinity or low pH. Because of its tolerance to difficult growing conditions, it can be grown in areas where other cereal crops, such as maize or wheat, would not survive. Earliness, high tillering capacity and also tolerance to pests are important traits to minimize risks in drought prone-areas. In this connection there are no other alternative crops except early maturing sorghum varieties in most drought-prone areas. Hence, pearl millet, being a rapid-growing warm-weather crop can importantly be used as a substitute or emergency crop.

Pearl millet is a new crop for Ethiopian farmers both in terms of cultivation and utilization, indicating the urgent need for further study. Millet being a highly cross-pollinated crop, maintenance of seed-purity is a challenge that needs higher attention. The seeds of millet ripen first in the upper part of the head and then successively downward.

11.1 New varieties

- No new variety released in 2020

11.2 Varieties under production

11.2.1. Variety:	KOLA-1 (ICMV-221)
11.2.1.1 Year of release:	2007
11.2.1.2 Breeder/Maintainer:	MARC/EIAR

12. Foxtail millet (*Setaria italic*)

It is the second-most widely planted species of millet, and the most important in East Asia. It has the longest history of cultivation among the millets, having been grown in China since sometime in the sixth millennium BC. Other names for foxtail millet include Italian millet, German millet, Chinese millet, and Hungarian millet.

It is an annual grass with slim, vertical, leafy stems which can reach a height of 120–200 cm. The seed head is a dense, hairy panicle 5–30 cm long. The small seeds, around 2 mm in diameter, are encased in a thin, papery hull which is easily removed in threshing. Seed color varies greatly between varieties.

In China, foxtail millet is the most common millet and one of the main food crops, especially among the poor in the dry northern part of that country. In Europe and North America it is planted at a moderate scale for hay and silage, and to a more limited extent for birdseed.

It is a warm season crop, typically planted in late spring.. Its early maturity and efficient use of available water make it suitable for rising in dry areas.

Nutrient composition is similar to common millet, approximately 11% of protein, 4% oil, 6.7% of crude fibre. Foxtail millet grain has higher content of essential amino acids, vitamins (thiamine, riboflavin, niacin).

12.1 New varieties

- No new variety released in 2020

12.2 Varieties under production

12.2.1. Variety:

Fetan- (铁芒1)

(E10 (Zhangzagu-1))

2011

Zhangjiakou Agricultural Research Acadamy (china)

12.2.2. Variety:

Fetan- (铁芒)

(E7 (Bagu-214))

2011

Zhangjiakou Agricultural Research Acadamy (China)

13. Food barley (*Hordeum vulgare*)

Barley belongs to the genus *Hordeum* L. in the tribe Triticeae of the family Poaceae. The earliest cultivation of barley is believed to have begun some 8,000 to 10,000 years ago in the area of the Middle East known as the Fertile Crescent. The crop is now grown worldwide with greater concentration in temperate areas and high altitudes of the tropics and subtropics. The greatest diversity of barley in terms of morphological types, genetic races, disease-resistant lines, and endemic morphotypes exists in Ethiopia.

Barley has been produced in Ethiopia, since ancient times. Barley is one of the most important staple food crops in the highlands of Ethiopia. It has great importance in social and food habit of the people. Both food and malting barley are produced in the country. At the national level in **2019/20** cropping season, **950,742.01** ha of land is covered by food and malt barley and over **23,780,102.92** quintals are produced. It is used to prepare various types of food and local and industrial beverages.

Barley is cropped twice a year. The main season, locally known as Meher, relies on June to September rainfall. The major barley producing regions are Oromiya, Amhara, Tigray, and Southern Nations, which account for about 99.5% of the total annual barley production. Currently, barley grain is used for the preparation of different foodstuffs, such as injera, porridge, kolo, and local drinks, such as tela, horde, and beer. The straw is used as animal feed, especially during the dry season. It is also useful for thatching roofs and as bedding.

13.1 New varieties

13.1.1. Variety name: **Negele (LMON IBYT-MRA 12-11)**

13.1.2.1. Agronomic and morphological characteristics

▪ Adaptation Areas:	Low land Areas of Arsi, West Arsi and Similar areas
○ Altitude (m.a.s.l):	1500-2400
○ Rainfall(mm):	>500
○ Soil type:	Well drained reddish brown
▪ Seed rate(kg/ha):	125
▪ Planting date :	Mid June to early July
▪ Fertilizer rate (kg/ha):	
○ N:	18
○ P ₂ O ₅ :	46
▪ Days to heading :	58
▪ Days to maturity :	98
▪ Plant height (cm) :	74
▪ Growth habit:	Erect
▪ 1000 seed weight(gm):	43.7
▪ Seed color:	Cream white
▪ Row type :	Six row
▪ Crop pest reaction:*	
▪ Yield (qt/ha);	
○ Research field :	19.19 (in serious moisture stress condition)
○ Farmer's field:	54.35 (optimum moisture) -
13.1.2.2. Year of release:	2020
13.1.2.3. Breeder/maintainer:	Kulumsa ARC/EIAR

*Resistant to scald and net blotch

13.2 Varieties under production

13.2.1. Variety:	Hagere (Feres gama)
13.2.1.1 Year of Release:	2018
13.2.1.2 Breeder/Maintainer:	Debere Birhan ARC/ARARI
13.2.2. Variety:	Adoshe
13.2.2.1 Year of Release:	(QUINA/MJA//SCARRLETT 2018
13.2.2.2 Breeder/Maintainer:	Sinana ARC/ORARI
13.2.3. Variety:	Debark-1 (Acc. 221300)
13.2.3.1 Year of Release:	2017
13.2.3.2 Breeder/Maintainer:	Gonder ARC/ARARI
13.2.4. Variety:	HB1965 (Awragebs/ IBON64/91 – Local cross)
13.2.4.1 Year of Release:	2017
13.2.4.2 Breeder/Maintainer:	Holetta ARC/EIAR
13.2.5. Variety:	HB1966 (F2 SxS 121/99 (ICARDA selection)
13.3.5.1 Year of Release:	2017
13.3.5.2 Breeder/Maintainer:	Holetta ARC/EIAR
13.2.6. Variety:	Illala-01(ERETH07-51)
13.2.6.1 Year of Release:	2016
13.2.6.2 Breeder/Maintainer:	Mekelle ARC/TARI
13.2.7. Variety:	Illala-02 (ERETH07-80)
13.2.7.1 Year of Release:	2016
13.2.7.2 Breeder/Maintainer:	Mekelle ARC/TARI
13.2.8. Variety:	Robera (ACC.218956)
13.3.8.1 Year of Release:	2016
13.3.8.2 Breeder/Maintainer:	Sinana ARC/OARI/

13.2.9. Variety	ADENA (SXH-08-F4-S-143)
13.2.9.1 Year of release:	2016
13.2.9.2 Breeder/Maintainer:	Mekelle University
13.2.10. Variety:	Wolelay (SXH-08-F4-T-10)
13.2.10.1 Year of release:	2016
13.2.10.2 Breeder/Maintainer:	Mekelle University
13.2.11. Variety:	Walker
13.2.11.1 Year of Release:	2012
13.2.11.2 Breeder/Maintainer:	OARI (Fedis)/MORRELL
13.2.12. Variety:	Golden eye
13.2.12.1 Year of Release:	2012
13.2.12.2 Breeder/Maintainer:	OARI (Fedis)/MORRELL
13.2.13. Variety:	Aquila
13.3.13.1 Year of Release:	2012
13.3.13.2 Breeder/Maintainer:	OARI (Fedis)/MORRELL
13.2.14. Variety:	Cross # 41/98
13.2.14.1 Year of release:	2012
13.2.14.2 Breeder/Maintainer:	HARC/EIAR
13.2.15. Variety:	EH 1493/F6.32H.3
13.2.15.1 Year of release:	2012
13.2.15.2 Breeder/Maintainer:	HARC/EIAR
13.2.16. Variety:	Gobe (CBSS96M00487T- D-1M-1Y-2M-OY)
13.2.16.1 Year of release:	2012
13.2.16.2 Breeder/Maintainer:	KARC/EIAR
13.2.17. Variety:	Fetina (SXH, T182)
13.2.17.1 Year of release:	2012
13.2.17.2 Breeder/Maintainer:	Mekelle University

Crop Variety Register	
13.2.18 Variety:	Hriti (SXH, S106)
13.2.18.1 Year of release:	2012
13.2.18.2 Breeder/Maintainer:	Mekelle University
13.2.19. Variety:	Abdane (Aruso/EH956/F2-8H-6-4SNR FBC99G0003-21)
13.2.19.1 Year of Release:	2011
13.2.19.2 Breeder/Maintainer:	SARC
13.2.20. Variety:	FELAMIT
13.2.20.1 Year of Release:	2011
13.2.20.2 Breeder/Maintainer:	Mekelle University
13.2.21. Variety:	Diribe (7 th EMBSN 19/98)
13.2.21.1 Year of Release:	2010
13.2.21.2 Breeder/Maintainer:	KARC/EIAR
13.2.22. Variety:	TILLA (EMBSN 14/98)
13.2.22.1 Year of release:	2007
13.2.22.2 Breeder/Maintainer:	ADARC/ARARI
13.2.23. Variety:	AGEGNEHU (218950-08)
13.2.23.1 Year of release:	2007
13.2.23.2 Breeder/Maintainer:	SRARC /ARARI
13.2.24 Variety:	GUTA (Acc. 3260-18)
13.2.24.1 Year of release:	2007
13.2.24.2 Breeder/Maintainer:	SARC /OARI
13.2.25 Variety:	GABULA (Acc. 231222/MS)
13.2.25.1 Year of release:	2007
13.2.25.2 Breeder/Maintainer:	AwARC/SARI
13.2.26 Variety:	Bentu (EMBSN 5 th 2/95-3-3-3)
13.2.26.1 Year of release:	2006
13.2.26.2 Breeder/Maintainer:	KARC/EIAR
13.2.27 Variety:	Desta (EMBSN 5 th 46/95-9-9-5)
13.2.27.1 Year of release:	2006
13.2.27.2 Breeder/Maintainer:	KARC/EIAR
13.2.28 Variety:	HB-1307 (EH-1700/F ₇₁ .B ₁ .63)
13.2.28.1 Year of release:	2006
13.2.28.2 Breeder/Maintainer:	HARC/EIAR
13.2.29 Variety:	SHIRE (3297-06)
13.2.29.1 Year of release:	2005
13.2.29.2 Breeder/Maintainer:	KARC/EIAR
13.2.30 Variety:	Biftu (Shasho # 22 GO-1 (Sn 98B))
13.2.30.1 Year of release:	2005
13.2.30.2 Breeder/Maintainer:	SARC/ OARI
13.2.31. Variety:	Dafo (Aruso (42) 4 (Sn 99G))
13.2.31.1 Year of release:	2005
13.2.31.2 Breeder/Maintainer:	SARC/ OARI
13.2.32 Variety:	Yedogit (BI 95 IN 198)
13.2.32.1 Year of release:	2005
13.2.32.2 Breeder/Maintainer:	SRARC/ARARI
13.2.33 Variety:	Dinsho (Wadago-4)
13.2.33.1 Year of release:	2004
13.2.33.2 Breeder/Maintainer:	SARC/ OARI

Crop Variety Register

13.2.34 Variety: Estayish (218963-4)
13.2.34.1 Year of release: 2004
13.2.34.2 Breeder/Maintainer: SRARC/ARARI

13.2.35. Variety: Trit (215235-2)
13.2.35.1 Year of release: 2004
13.2.35.2 Breeder/Maintainer: ARARI/SRARC

13.2.36. Variety: Mulu (3371-03)
13.2.36.1 Year of release: 2004
13.2.36.2 Breeder/Maintainer: ADARC/ARARI

13.2.37. Variety: Setegn (3369-17)
13.2.37.1 Year of release: 2004
13.2.37.2 Breeder/Maintainer: ADARC/ARARI

13.2.38. Variety: Harbu (Aruso Bale # 10-1)
13.2.38.1 Year of release: 2004
13.2.38.2 Breeder/Maintainer: SARC/OARI

13.2.39. Variety: 4731-7
13.2.39.1 Year of release: 2004
13.2.39.2 Breeder/Maintainer: DBARC/ARARI

13.2.40 Variety: 4748-16
13.2.40.1 Year of release: 2004
13.2.40.2 Breeder/Maintainer: DBARC/ARARI

13.2.41. Variety: Shedho (3381-01)
13.2.41.1 Year of release: 2003
13.2.41.2 Breeder/Maintainer: SRARC/ARARI

13.2.42 Variety: Dimtu (3369-19)
13.2.42.1 Year of release: 2001
13.2.42.2 Breeder/Maintainer: HARC/EIAR

Crop Variety Register

13.2.43 Variety: Meserach (Kulumsa 1/88/)
13.2.43.1 Year of release: 1997/98
13.2.43.2 Breeder/Maintainer: SHARC/ARARI

13.2.44 Variety: Abay/(3357-10)
13.2.44.1 Year of release: 1997/98
13.2.44.2 Breeder/Maintainer: ADARC/ARARI

13.2.45 Variety: Shege
13.2.45.1 Year of release: 1995
13.2.45.2 Breeder/Maintainer: HARC/EIAR

13.2.46 Variety: HB-42
13.2.46.1 Year of release: 1984
13.2.46.2 Breeder/Maintainer: HARC/EIAR

14. Malt barley (*Hordeum distichon*)

Malt barley is characterized as two-rowed and six rowed barley in which only the middle spiklet of each three produces seed, the other two being sterile or male. Malt is the major (90%) raw material for beer production. Modern malting in Ethiopia started in 1974 at St. George brewery. Assela Malt factory was established in 1984 with the aim of supplying malt to local breweries.

Malting is a process in which the grain is germinated and the very young seedlings are then dried to produce malt for brewing beer. Malt contains enzymes, which converts starch to fermentable sugars. A by-product of brewing is yeast, which is used in baking and for the production of vitamin-rich yeast extracts.

Arsi and Bale are the major producing regions of malt barley. Highlands of Shewa and similar areas are also producing larger quantities of malt barley. As the crop has been cultivated since ancient times many types of varieties are produced in our country. Malt barley has double purposes in Ethiopia; it is used for food (bread, and several traditional dishes) and also for malting. Consequently, there are different competing alternative channels for the crop making it sustainable source of income for smallholder farmers in the country.

14.1 New Variety

14.1.1. Variety name: Iftuu (Mn Brite)

14.1.1.1. Agronomic and morphological characteristics

▪ Adaptation Areas:	High land Areas of Arsi, Central Shoa and Similar areas 2300-2800 >700 100 Mid June to end July As per recommendation to the specific growing areas with due consideration to Nitrogen fertilization not to increase the grain protein above 11.5%
○ Altitude (m.a.s.l):	80
○ Rainfall(mm):	143
▪ Seed rate(kg/ha):	97.7
▪ Planting date :	Erect type
▪ Fertilizer rate (kg/ha):	Cream white
▪ Days to heading :	Two-row
▪ Days to maturity :	
▪ Plant height (cm) :	
▪ Growth habit:	
▪ Seed color:	
▪ Row type:	
▪ Crop pest reaction:*	
▪ Grain and malt quality	
○ Protein (%):	10.32
○ Extract(%):	80.82
○ HLW (kg/hl):	-
○ Screening Recovery (%) = (2.5 +2.8)2.2mm:	-
▪ 1000 kernel weight(g):	51
▪ Yield (qt/ha):	49.38- 64.65
○ Research field :	
○ Farmer's field:	
14.1.1.2. Year of release:	2020
14.1.1.3. Breeder/maintainer:	Kulumsa ARC/EIAR

*Resistant to Scald and net blotch

14.2 Varieties under production

14.2.1. Variety:

RGT Planet (Pedigree:
Tamtam x Concerto)

14.2.1.1. Year of release:

2019

14.2.1.2. Breeder /Maintainer:

Soufflet malt Ethiopia PLC
/Holetta ARC/EIAR

14.2.2. Variety:

Henrike (Pedigree:
Marnie x Bolina)

14.2.2.1. Year of release:

2019

14.2.2.2. Breeder /Maintainer:

Boort malt PLC
/Holetta ARC/EIAR

14.2.3. Variety:

Waro
(LIBRA T95/DIMALT)

14.2.3.1 Year of release:

2019

14.2.3.2 Breeder/Maintainer:

Sirinka ARC /ARARI/

14.2.4. Variety:

Fatima
(Sunshine x Tamtam)

14.2.4.1. Year of release:

2018

14.2.4.2. Breeder /Maintainer:

Soufflet malt Ethiopia PLC
/Holetta ARC/EIAR

14.2.5. Variety:

Raya 1(MU-MB 1440/L94)

14.2.5.1. Year of release:

2018

14.2.5.2. Breeder /Maintainer:

Mekelle University

14.2.6. Variety:

MOATA

14.2.6.1 Year of release:

2018

14.2.6.2 Breeder/Maintainer:

Sinana ARC / ORARI

14.2.7. Variety:

Explorer (Marine x Beatrix)

14.2.7.1. Year of release:

2017

14.2.7.2. Breeder /Maintainer:

General Malting Service
(GMS)/Holetta ARC/EIAR14.2.8. Variety: HB1963
14.2.8.1. Year of release: 2016
14.2.8.2. Breeder /Maintainer: Holetta ARC/EIAR14.2.9. Variety: HB1964
14.2.9.1 Year of release: 2016
14.2.9.2 Breeder/Maintainer: Holetta ARC/EIAR14.2.10. Variety: Singitan (IBON-MRA)
14.2.10.1 Year of release: 2016
14.2.10.2. Breeder/Maintainer: Sinana ARC//OARI14.2.11. Variety: HKBL 1512-5 (Fanaka)
14.2.11.1. Year of release: 2015
14.2.11.2. Breeder /Maintainer: Diageo/Meta
Abo/HARC/EIAR14.2.12. Variety: Traveler
14.2.12.1 Year of release: 2013
14.2.12.2 Breeder/Maintainer: Heinken/ HARC/EIAR14.2.13. Variety: Grace
14.2.13.1 Year of release: 2013
14.2.13.2. Breeder/Maintainer: Heinken/ HARC/EIAR14.2.14 Variety: IBON 174/03
14.2.14.1. Year of Release: 2012
14.2.14.2. Breeder/Maintainer: HARC/EIAR14.2.15 Variety: Sabini
14.2.15.1. Year of Release: 2011
14.2.15.2. Breeder/Maintainer: KARC/EIAR14.2.16 Variety: Bahati
14.2.16.1. Year of Release: 2011
14.2.16.2. Breeder/Maintainer: KARC/EIAR

Crop Variety Register

14.2.17. Variety:	EH1847/F4.2p.5.2 (BEA/IBON64/91)
14.2.17.1. Year of Release:	2011
14.2.17.2. Breeder/Maintainer:	HARC/ EIAR
14.2.18 Variety:	ፋ፻ ጥስታ (EH1609-F5-B3-10)
14.2.18.1. Year of Release:	2010
14.2.18.2. Breeder/Maintainer:	Adet ARC (ARARI
14.2.19 Variety:	Bekoji-1 (EH1293/ F2-18 B-11-1-14-18)
14.2.19.1. Year of Release:	2010
14.2.19.2. Breeder/Maintainer:	KARC/EIAR
14.2.20. Variety	Kiflu-B (Miscal-21)
14.2.20.1 Year of release:	2006
14.2.20.2 Breeder/Maintainer:	HARC/EIAR
14.2.21 Variety	Haruna Nijo
14.2.21.1 Year of release:	2006
14.2.21.2 Breeder/Maintainer:	KARC/EIAR
14.2.22 Variety	CDC Select
14.2.22.1 Year of release:	2006
14.2.22.2 Breeder/Maintainer:	HARC/EIAR
14.2.23. Variety	HB - 1533
14.2.23.1 Year of release:	2004
14.2.23.2 Breeder/Maintainer:	HARC/EIAR
14.2.24 Variety:	HB-52
14.2.24.1 Year of release:	2001
14.2.24.2 Breeder/Maintainer:	HARC/EIAR

Crop Variety Register

14.2.25 Variety:	HB-120
14.2.25.1 Year of release:	1994
14.2.25.2 Breeder/Maintainer:	HARC/EIAR
14.2.26 Variety:	Holker
14.2.26.1 Year of release:	1979
14.2.26.2 Breeder/Maintainer:	HARC/EIAR
14.2.27 Variety:	Beka
14.2.27.1 Year of release:	1976
14.2.27.2 Breeder/Maintainer:	HARC/EIAR

15. Quinoa (*Chenopodium quinoa* Willd)

15.1 New varieties

- No new variety released in 2020

15.2 Varieties under production

15.2.1 Variety :

Yenewa **PZP** (Titicaca)

15.2.1.1 Year of registration:

2016

15.2.1.2 Breeder/Maintainer:

Dan church and Melkassa
ARC/EIAR

16. Food oat (*Avena sativa*)

16.1 New varieties

- No new variety released in 2020

16.2 Varieties under production

16.2.1. Variety name:

'Hulegeb' (Goslin)

16.2.1.1. Year of release:

2019

16.2.1.2. Breeder/ maintainer:

Adet ARC/ARARI

16.2.2. Variety name:

'Tena' (Souris: ND961161)

16.2.2.1. Year of release:

2019

16.2.2.2. Breeder/ maintainer:

Adet ARC/ARARI

16.2.3. Variety name:

SORATAF (79Ab382 (Tx)
(80SA.94))

16.2.3.1. Year of release:

2017

16.2.3.2. Breeder/ maintainer:

Holetta ARC/EIAR/

Group II. Food legume /Pulse/ Crops

1. Faba bean (*Vicia faba*)

Ethiopia is probably one of the primary centers of diversification for faba bean. Although the small-seeded type of the Ethiopian faba bean is not well studied, there are some reports of tremendous diversity in protein content, chocolate spot and leaf rust resistance.

Faba bean is produced in many regions of Ethiopia. The major producing regions are Tigray, Gondar, Gojjam, Wollega, Wollo, Gamo, Gofa and Shoa. In addition, it is grown in pockets in the rest of the country's high land and semi-high land regions with altitudes ranging from 1800-3000 meters above sea level. In **2019/20** cropping season, the total area under cultivation is estimated to be **466,697.68** ha of land from which **10,067,518.28** quintals are produced.

It is widely used for food and has high protein content. Due to its nitrogen fixing capacity it is used in crop rotation with the nationally important cereal crops like wheat, tef and barley.

1.1. New varieties

1.1.1 Variety name: Chalew (EH060088-1)

1.1.1.1. Agronomic and morphological characteristics

▪ Adaptation Area:	For water logging vertisol areas such as Adadi, Enewari, Arsi-Robe, Sagure, Ambo, Sinja and similar agro-ecologies.
○ Altitude (m.a.s.l) :	1800-2800
○ Rain fall (mm) :	700-1100
▪ Seed rate (kg/ha) :	185
▪ Planting date :	Mid of June to Early July
▪ Fertilizer rate (kg/ha):	
○ P2O5 :	100
○ N:	18
▪ Days to flowering :	53
▪ Days to maturity :	136
▪ Plant height (cm) :	120
▪ Growth habit :	Indeterminate
▪ 1000 seed weight (gm) :	736
▪ Seed color :	Light green
▪ Flower color:	White with black spot
▪ Cotyledon Color:	Ceramic
▪ Pod color:	Green
▪ Crop pest reaction: *	
▪ Yield (qt/ha) :	
○ Research field :	25-45
○ Farmers" field :	22-35

1.1.1.2 Year of Release: 2020

1.1.1.3 Breeder/Maintainer: Holetta ARC/EIAR

* Moderately resistant to root rot and chocolate spot rust.

1.2 Varieties under production

1.2.1 Variety: EH011088-3

Moybon (ሞብን)

2019

Sinana ARC/ORARI

EH00021-1 Tosha (ቶሻ)

2019

Sinana ARC/ORARI

Mugulat

(Sell.98Lat.11135)

2017

Mekelle ARC/TRARI

Alloshe (አሎሱ)

(EH03043-1)

2017

Sinana ARC/ORARI

Numan (ኅማን) EH 06007-2

2016

KARC/EIAR

ASHEBEKA (አሻበካ)

(EH01075-4)

2015

KARC/EIAR

HASHENGE (ILB 4358

2015

Alamata ARC/TARI

Crop Variety Register	
1.2.8. Variety:	DIDE'A ደደ’ (EH01048-1)
1.2.8.1 Year of release:	2014
1.2.8.2 Breeder/Maintainer:	KARC/EIAR
1.2.9. Variety:	GORA (EK 01024-1-2)
1.2.9.1 Year of release:	2013
1.2.9.1 Breeder/Maintainer:	KARC/EIAR
1.2.10. Variety:	EH00099-1(Bobicho-05)
1.2.10.1 Year of release:	2013
1.2.10.2 Breeder/Maintainer:	Hawassa ARC
1.2.11. Variety:	Mosisaa (: EH-99047-1
1.2.11.1 Year of release:	2013
1.2.11.2 Breeder/maintainer:	Sinana ARC (ORARI)
1.2.12. Variety:	Bule-04(EH00102-5)
1.2.12.1 Year of release:	2012
1.2.12.2 Breeder/maintainer:	HWARC/SARI
1.2.13. Variety:	TUMSA (EH99051-3) ታምሳ
1.2.13.1 Year of release:	2010
1.2.13.2 Breeder/maintainer:	HARC/EIAR
1.2.14. Variety:	Hachalu (EH00102-4-1) ሃቻሉ
1.2.14.1 Year of release:	2010
1.2.14.2 Breeder/maintainer:	HARC/EIAR
1.2.15. Variety:	Angacha-1 (TFB-097)
1.2.15.1 Year of release:	2009
1.2.15.2 Breeder/maintainer:	Hawassa research center
1.2.16. Variety:	DOSHA (COLL 155/00-3)
1.2.16.1. Year of release:	2009
1.2.16.2. Breeder/maintainer:	HARC/EIAR
Crop Variety Register	
1.2.17. Variety:	Gachena (ETH91001-13-2)
1.2.17.1. Year of release:	2008
1.2.17.2 Breeder/maintainer:	HU (Haramaya University)
1.2.18 Variety:	Walki (EH96049-2) ወልኪ
1.2.18.1 Year of release:	2008
1.2.18.2 Breeder/Maintainer:	HARC/EIAR
1.2.19 Variety:	OBSE (EH95073-1)
1.2.19.1 Year of release:	2007
1.2.19.2 Breeder/Maintainer:	HARC/EIAR
1.2.20. Variety:	Moti (EH 95078-6)
1.2.20.1 Year of release:	2006
1.2.20.1 Breeder/Maintainer:	HARC/EIAR
1.2.21 Variety:	Gabelcho (EH 96009-1)
1.2.21.1 Year of release:	2006
1.2.21.2 Breeder/Maintainer:	HARC/EIAR
1.2.22 Variety:	Adet-Hanna (PGRC/E 25041-2-2)
1.2.22.1 Year of release:	2005
1.2.22.2 Breeder/Maintainer:	ADARC/ARARI
1.2.23 Variety:	Selale (Selale Kasim 91-13)
1.2.23.1 Year of release:	2002
1.2.23.2 Breeder/Maintainer:	HARC/ EIAR
1.2.24 Variety:	Wayu (Wayu 89-5)
1.2.24.1 Year of release:	2002
1.2.24.2 Breeder/Maintainer:	HARC/EIAR
1.2.25 Variety:	Degaga (R-878-3)
1.2.25.1 Year of release:	2002
1.2.25.2 Breeder/Maintainer:	HARC/EIAR

Crop Variety Register	
1.2.26 Variety:	Dagm (Grarjarso 89-8)
1.2.26.1 Year of release:	2002
1.2.26.2 Breeder/Maintainer:	SHARC/ ARARI
1.2.27 Variety:	Lalo (Selale kasim 89-4)
1.2.27.1 Year of release:	2002
1.2.27.2 Breeder/Maintainer:	SHAR/ ARARI
1.2.28 Variety:	Holetta (BP 1802-1-2)
1.2.28.1 Year of release:	2001
1.2.28.2 Breeder/Maintainer:	HAR/EIAR
1.2.29 Variety:	Shallo (EH011-22-1)
1.2.29.1 Year of release:	1999/00
1.2.29.2 Breeder/Maintainer:	SARC/OARI
1.2.30. Variety:	Tesfa (75 TA 2626-1-2-1)
1.2.30.1 Year of release:	1995/96
1.2.30.2 Breeder/Maintainer:	HARC/EIAR
1.2.31 Variety:	Messay
1.2.31.1 Year of release:	1995/96
1.2.31.2 Breeder/Maintainer:	HARC/EIAR
1.2.32 Variety:	Bulga 70
1.2.32.1 Year of release:	1994/95
1.2.32.2 Breeder/Maintainer:	HARC/EIAR
1.2.33 Variety:	Kassa
1.2.33.1 Year of release:	1980
1.2.33.2 Breeder/Maintainer:	HARC/ EIAR
1.2.34 Variety:	KUSE /2-27-33/
1.2.34.1 Year of release:	1979
1.2.34.2 Breeder/Maintainer:	HARC/EIAR
Crop Variety Register	
1.2.35 Variety:	NC-58
1.2.35.1 Year of release:	1978
1.2.35.2 Breeder/Maintainer:	HARC/EIAR
1.2.36 Variety:	CS-20-DK
1.2.36.1 Year of release:	1977
1.2.36.2 Breeder/Maintainer:	HARC/ EIAR

2. Field pea (*Pisum sativum*)

Field pea, one of the oldest crops in the country, has a unique subspecies developed in Ethiopia called *P. sativum* subsp. *abyssinicum*. The existing field pea germplasm in the country has a phenotypic diversity and tolerance/resistance to diseases. Field pea is highly produced in the North, South, West and Central parts of Ethiopia. In addition, it is grown in pockets in the rest of the country's high land and semi highland regions with altitudes ranging from 1800-3000 meters above sea level.

It is widely used for food because of its highest protein contents. In Ethiopia, the annual consumption of pea seeds per person is estimated about 6 - 7 kg. Main dishes include 'shiro wot' (split pea seeds ground and made into stew) and 'kik wot' (split pea seeds boiled and made into stew). Snacks include 'eshet' (fresh green field pea seeds either eaten raw or roasted), 'nifro' (boiled dry or fresh green pea seeds) and 'endushdash' (seeds soaked first and then roasted). In local markets white and cream colored seeds are preferred for 'kik' making, and grey colored seeds for 'shiro' making.

In Ethiopia in the **2019/20** cropping season **223,657.49** ha of land was covered with field pea and the annual production was estimated at about **3,905,635.50** quintals.

2.1 New varieties

- No new variety released in 2020

2.2 Varieties under production

2.2.1 Variety:	Jeldu (ጀልዕ) (EH07006-5) Kik type 2019 Holetta ARC/EIAR
2.2.2 Variety:	Lammif (EH08010-3) Shiro type 2017 Bako ARC (ORARI)
2.2.3 Variety:	Jiidhaa (EH08033-2) Kik type 2017 Bako ARC (ORARI)
2.2.4 Variety:	Yewaginesh (የወጊነሽ) (EH-03-002) 2017 Sekota Dry land ARC/ARARI/
2.2.5 Variety:	Hortu (ሮርቱ) (EH-0281-8) Mainly for Kiki 2017 Sinana ARC/ORARI/
2.2.6 Variety:	Weyib (ወይብ) (EH03014-1) Mainly for Shiro and Caning 2017 Sinana ARC/ORARI/

Crop Variety Register

2.2.7 Variety:	BURSA (በርሃን) (EH05027-2)
2.2.7.1. Year of Release:	2015
2.2.7.2. Breeder/Maintainer:	KARC/EIAR
2.2.8 Variety:	BILALLO (EH 02-002-3)
2.2.8.1 Year of release:	2012
2.2.8.2 Breeder/maintainer:	KARC/EIAR
2.2.9 Variety:	Haranna (Cool 38/00-4)
2.2.9.1 Year of release:	2012
2.2.9.2 Breeder/maintainer:	SARC/OARI
2.2.10 Variety:	Teshale (EH99005-7)
2.2.10.1 Year of release:	2012
2.2.10.2 Breeder/maintainer:	AARC/EIAR
2.2.11 Variety:	GEDO-1 (EH99002-1)
2.2.11.1 Year of release:	2010
2.2.11.2 Breeder/maintainer:	BARC/OARI
2.2.12 Variety:	LATU ልብ (EH 02-036-2)
2.2.12.1 Year of release:	2010
2.2.12.2 Breeder/maintainer:	KARC/EIAR
2.2.13 Variety:	BURKITU (EH99004-2)
2.2.13.1 Year of release:	2009
2.2.13.2 Breeder/maintainer:	HARC/EIAR
2.2.14 Variety:	Senk (GFP 233)
2.2.14.1 Year of release:	2009
2.2.14.2 Breeder/maintainer:	SRARC/ARARI
2.2.15 Variety:	Agrit (IFP 308-4)
2.2.15.1 Year of release:	2009
2.2.15.2 Breeder/maintainer:	SRARC/ARARI

Crop Variety Register

2.2.16 Variety:	Meti (NI-21)
2.2.16.1 Year of release:	2008
2.2.16.2. Breeder/maintainer:	HU (Haramaya University)
2.2.17 Variety:	Ambericho (IG-51664)
2.2.17.1 Year of release:	2008
2.2.17.2 Breeder/ maintenance	SRARI/ArARC
2.2.18 Variety:	URJI (Acc. 32615-1)
2.2.18.1 Year of release:	2007
2.2.18.2 Breeder/Maintainer:	SARC/OARI
2.2.19 Variety:	Megeri (Helina)
2.2.19.1 Year of release:	2006
2.2.19.2 Breeder/Maintainer:	HARC/EIAR
2.2.20 Variety:	Gume (EH96026-1-4)
2.2.20.1 Year of release:	2006
2.2.20.2 Breeder/Maintainer:	HARC/EIAR
2.2.21 Variety:	Bamo (Flagman)
2.2.21.1 Year of release:	2005
2.2.21.2 Breeder/Maintainer:	BARC /OARI
2.2.22 Variety:	Bariso (EH 90011-1-2)
2.2.22.1 Year of release:	2005
2.2.22.2 Breeder/Maintainer:	BARC /OARI
2.2.23 Variety:	Arjo-1(EH 90025-1)
2.2.23.1 Year of release:	2005
2.2.23.2 Breeder/Maintainer:	BARC/OARI
2.2.24 Variety:	Weyitu (EH 90-006-2)
2.2.24.1 Year of release:	1999/00
2.2.24.2 Breeder/Maintainer:	SARC/OARI
2.2.25 Variety:	Tullu-dimtu
2.2.25.1 Year of release:	1999/00
2.2.25.2 Breeder/Maintainer:	SARC/OARI

Crop Variety Register

2.2.26. Variety:	Wolmera
2.2.26.1 Year of release:	1999/00
2.2.26.2 Breeder/Maintainer:	HARC/EIAR
2.2.27 Variety:	Hursa (KFP-103/B/)
2.2.27.1 Year of release:	1997
2.2.27.2 Breeder/Maintainer:	SARC/OARI
2.2.28 Variety:	Adet 1
2.2.28.1 Year of release:	1997
2.2.28.2 Breeder/Maintainer:	ADARC/ARARI
2.2.29 Variety:	Sefinesh
2.2.29.1 Year of release:	1997
2.2.29.2 Breeder/Maintainer:	ADARC/ARARI
2.2.30 Variety:	Holetta
2.2.30.1 Year of release:	1995/96
2.2.30.2 Breeder/Maintainer:	HARC/ EIAR
2.2.31 Variety:	Adi
2.2.31.1 Year of release:	1995/96
2.2.31.2 Breeder/Maintainer:	HARC/EIAR
2.2.32 Variety:	Hassabe
2.2.32.1 Year of release:	1995
2.2.32.2 Breeder/Maintainer:	HARC/EIAR
2.2.33 Variety:	Milky
2.2.33.1 Year of release:	1995/96
2.2.33.2 Breeder/Maintainer:	HARC/EIAR
2.2.34 Variety:	Markos
2.2.34.1 Year of release:	1994/95
2.2.34.2 Breeder/Maintainer:	HARC/EIAR

Crop Variety Register

2.2.35 Variety:	Dadimos
2.2.35.1 Year of release:	1994/95
2.2.35.2 Breeder/Maintainer:	SARC/OARI
2.2.36 Variety:	Tulu (PGRC/E32 21-181)
2.2.36.1 Year of release:	1994/95
2.2.36.2 Breeder/Maintainer:	SARC/OARI
2.2.37 Variety:	Tegegnech
2.2.37.1 Year of release:	1993/94
2.2.37.2 Breeder/Maintainer:	HARC/ EIAR
2.2.38 Variety:	Nc-95 Haik
2.2.38.1 Year of release:	1981
2.2.38.2 Breeder/Maintainer:	HARC/EIAR
2.2.39 Variety:	G22763-2c
2.2.39.1 Year of release:	1981
2.2.39.2 Breeder/Maintainer:	HARC/EIAR
2.2.40 Variety:	Mohanderfer
2.2.40.1 Year of release:	1979
2.2.40.2 Breeder/Maintainer:	HARC/EIAR
2.2.41 Variety:	FP DZ
2.2.41.1 Year of release:	1979
2.2.41.2 Breeder/Maintainer:	HARC/EIAR

3. Dekoko (*Pisum sativum* var. *abyssinicum*)

Dekoko is a pulse crop cultivated and developed in Ethiopia. The crop is known to grow in few pocket areas especially in South Tigray and North Wello regions. Dekoko grows from mid-altitude areas to highland areas. Although it is a cool season crop like field pea, the crop has an ability to grow in the low land areas such as Chercher where the elevation is 1720 m. a. s. l. In higher areas, however, Dekoko needs late sowing (from mid July to early August) and a soil free of water logging condition. As Dekoko is a crop that matures within three months of planting, it is usually weeded once or twice before it produces tendrils and flowers but latter stages it is difficult to differentiate the root with weeds and usually uprooted with weed plants. The crop grows best on different types of soils with well-drained.

Dekoko usually needs less amount of water and can be fruit full by only two or three rain showers. Hence, the acceptance of the crop by farming communities is extremely high due to earliness and delicious for food. The communities in South Tigray call the crop as the dero-wot/chicken stew/ of the poor to appreciate its taste and food preference. The crop is the most popular one and the local price for Dekoko is usually more than twice the price for faba-bean and field pea. However the crop has been neglected so far due to its localized cultivation nature.

3.1 New variety

- No new variety released in 2020

3.2 Varieties under production

3.2.1. Variety:	RAYA-1 (TK-006/08 Al)
3.2.1.1. Year of release:	2015
3.2.1.2. Breeder/Maintainer-	Alamata ARC/TARI
3.2.2. Variety:	RAYA-2 (TA-015/08 Sr)
3.2.2.1. Year of release:	2015
3.2.2.2. Breeder/Maintainer-	Alamata ARC/TARI

4. Chickpea (*Cicer arietinum*)

Chickpea was first produced in the Middle East about 7, 000 years ago. At present, it is produced in over 40 countries represented in all continents. However, the most important chickpea producing countries are India, Turkey, Pakistan, Iran, Mexico, Australia, Ethiopia, Myanmar, and Canada. About 95% of chickpea cultivation and consumption is in the developing countries. In Ethiopia, the earliest finding of chickpea is reported in 1520 BC. Ethiopia is the largest producer of chickpea in Africa accounting for about 46% of the continent's production during 1994-2006. It is also the seventh largest producer worldwide and contributes about 2% to the total world chickpea production

There are two types of chickpea produced globally, namely *desi* and *kabuli* chickpeas. *Kabuli* chickpeas have a larger cream-colored seed with a thin seed coat whereas the *desi* type has a smaller, reddish brown-colored seed with a thick seed coat. On average, world production consists of about 75% of *desi* and 25% of *kabuli* types. Although *Kabuli* types can be profitably adapted in the country, Ethiopia traditionally produces largely the *desi* types. Morphologically, *desi* types have pink flowers while the *Kabuli* types are characterized by white flowers. It is grown at the end of the main rainy season using residual soil moisture. This allows farmers to practice double cropping, which in turn increases productivity of scarce land resource and serves as an additional source of income.

Chickpea is one of the major highland pulse crop widely grown in the highland and semi-highland regions of Ethiopia mainly on clay soil and fixes atmospheric nitrogen in soils and thus improves soil fertility and saves fertilizer costs in subsequent crops. In **2019/20** cropping season, **208,837.91** hectares of land was covered with chickpea and the production was estimated at about **4,351,932.14** quintals. Because of its multiple importance, the crop is widely produced by the Ethiopian farmers. Chickpea is widely used for food for its high protein content. Apart from this, because of its ability to fix nitrogen it is used in crop rotation with the nationally important cereal crops like wheat, tef and barley.

4a. Dесси Type

4a.1. New varieties

4a.1.1 Variety name: Eshete (DZ-2012 CK-0254/ICCV-10515/)

4a.1.1.1 Agronomic and morphological characteristics

▪ Adaptation areas:	Low to mid altitude areas of the country like Aris Negelle, Alem Tena, Minjar, Debre Zeit, Kokate and similar environments
○ Altitude (m.a.s.l):	700-1900
○ Rain fall (mm)	500-1000
▪ Seed rate (kg/ha)	Ranges over 60 -95 Kg depending on HSW
▪ Plating date:	Mid of August to early September
▪ Fertilizer rate (kg/ha):	No
○ P ₂ O ₅ :	No
○ N:	50-60
▪ Days to flowering:	119-138
▪ Days to maturity:	42-65
▪ Plant height (cm):	Erect
▪ Growth habit:	19-29 on average 17
▪ 1000 seed weight (g)	Light brown
▪ Seed coat color:	Purple
▪ Flower color:	Small seed size
▪ Garin size:	
▪ Crop pest reaction*:	
▪ Yield (qt/ha)	
○ Research field	10-18
○ Farmers' field	10-14
4a.1.1.2 Year of release	2020
4a.1.1.3 Breeder/ Maintainer:	D/ziet ARC (EIAR)

* Resistance to fusarium wilt root rot complex and Ascochyta blight (1st of its kind in desi types)

4a.2 Varieties under production

4a.2.1 Variety:	(ICCV-93954 (MITIK)
4a.2.1.1 Year of release:	2019
4a.2.1.2 Breeder/Maintainer:	Sirinka ARC (ARARI)
4a.2.2 Variety:	ICCV-07108 (Melba) (መልባ)
4a.2.2.1 Year of release:	2019
4a.2.2.2 Breeder/Maintainer:	Sinana ARC (ORARI)
4a.2.3 Variety:	Geletu (ICCX-090013-F2-P276-BP)
4a.2.3.1 Year of release:	2019
4a.2.3.2 Breeder/Maintainer:	D/zeit ARC (EIAR)
4a.2.4 Variety:	(Maritu) ዘርዝር Acc.41053
4a.2.4.1 Year of release:	2018
4a.2.4.2 Breeder/Maintainer:	Wollo University
4a.2.5 Variety:	Dimtu (ICCV-10107)
4a.2.5.1 Year of release:	2016
4a.2.5.2 Breeder/Maintainer:	D/zeit ARC
4a.2.6 Variety:	Teketay (ICCV-00104)
4a.2.6.1 Year of release:	2013
4a.2.6.2 Breeder/Maintainer:	D/zeit ARC
4a.2.7 Variety:	Dalota
4a.2.7.1 Year of release:	2013
4a.2.7.2 Breeder/Maintainer:	D/zeit ARC/EIAR
4a.2.8 Variety:	Minjar (ICCV-03107)
4a.2.8.1 Year of release:	2010
4a.2.8.2 Breeder/Maintainer:	EIAR/ DZARC

4a.2.9 Variety:	Naatolii (ICCX-910112-6)
4a.2.9.1 Year of release:	2007
4a.2.9.2 Breeder/Maintainer:	DZARC/EIAR
4a.2.10. Variety:	Mastewal (ICCV-92006)
4a.2.10.1 Year of release:	2006
4a.2.10.2 Breeder/Maintainer:	DBARC/ARARI
4a.2.11. Variety:	Fetenech (ICCV-92069)
4a.2.11.1 Year of release:	2006
4a.2.11.2 Breeder/Maintainer:	SRARC/ARARI
4a.2.12. Variety:	Kutaye (ICCV-92033)
4a.2.12.1 Year of release:	2005
4a.2.12.2 Breeder/Maintainer:	SRARC/ARARI
4a.2.13 Variety:	Akaki (DZ-10-9-2)
4a.2.13.1 Year of Release:	1995
4a.2.13.2 Breeder/ Maintainer:	DZARC/ EIAR
4a.2.14. Variety:	Worku (DZ-10-16.2)
4a.2.14.1 Year of Release:	1994
4a.2.14.2 Breeder/ Maintainer:	DZARC/EIAR
4a.2.15 Variety:	Mariye
4a.2.15.1 Year of Release:	1985
4a.2.15.2 Breeder/ Maintainer:	DZARC / EIAR
4a.2.16. Variety:	DZ –10-4
4a.2.16.1 Year of Release:	1974
4a.2.16.2 Breeder/ Maintainer:	DZARC/EIAR
4a.2.17 Variety:	DZ –10-11
4a.2.17.1 Year of Release:	1974
4a.2.17.2 Breeder/ Maintainer:	DZARC/EIAR

4b. Kabuli types**4. b.1 New varieties**

- No new variety released in 2020

4b. 2 Varieties under production

4b.2.1 Variety:	KOKA (ICCV-04305)
4b.2.1.1 Year of registration	2019
4b.2.1.2 Breeder/ Maintainer	Deber Zeit ARC/EIAR
4b.2.2 Variety:	(Hora) DZ-2012 CK-001 /FLIP 04 -9C
4b.2.2.1 Year of registration	2016
4b.2.2.2 Breeder/ Maintainer	DZARC/EIAR
4b.2.3 Variety:	(Dhera) DZ-2012 CK-009 /FLIP 0163
4b.2.3.1 Year of registration	2016
4b.2.3.2 Breeder/ Maintainer	DZARC/EIAR
4b.2.4 Variety:	Kobo (ICCV-01308)
4b.2.4.1 Year of registration	2012
4b.2.4.2 Breeder/ Maintainer	Sirinka ARC/ARARI
4b.2.5 Variety:	Akuri (ICCV-03402)
4b.2.5.1 Year of registration	2011
4b.2.5.2 Breeder/ Maintainer	SARC/ARARI
4b.2.6 Variety	KASECH (FLIP-95-31C)
4b.2.6.1 Year of registration:	2011
4b.2.6.2 Breeder/ Maintainer	SARC/ARARI
4b.2.7 Variety	Monino (ACOS DUIBIE)
4b.2.7.1 Year of registration	2009
4b.2.7.2 Breeder/ Maintainer	ACOS and EIAR/D/DZARC

4b.2.8 Variety: Yelbey (ICCV-14808)
 4b.2.8.1 Year of release: 2006
 4b.2.8.2 Breeder/Maintainer: SRARC/ARARI

4b.2.9 Variety: Teji (FLIP-97-266c)
 4b.2.9.1 Year of release: 2005
 4b.2.9.2 Breeder/Maintainer: DZARC/EIAR

4b.2.10 Variety: EJERI (FLIP-97-263c)
 4b.2.10.1 Year of release: 2005
 4b.2.10.2 Breeder/Maintainer: DZARC/EIAR

4b.2.11 Variety: Habru (FLIP 88-42C)
 4b.2.11.1 Year of release: 2004
 4b.2.11.2 Breeder/Maintainer: DZARC/EIAR

4b.2.12 Variety: Chefe (ICCV-92318)
 4b.2.12.1 Year of release: 2004
 4b.2.12.2 Breeder/Maintainer: DZARC/EIAR

4b.2.13. Variety: Shasho (ICCV-93512)
 4b.2.13.1 Year of Release: 1999/00
 4b.2.13.2 Breeder/ Maintainer: DZARC/EIAR

4b.2.14 Variety: Arerti (FLIP 89-84C)
 4b.2.14.1 Year of Release: 1999/00
 4b.2.14.2 Breeder/ Maintainer: DZARC/EIAR

5. Cowpea (*Vigna unguiculata*)

Cowpea has been cultivated for many centuries in the developing world and well adapted to the stressful growing condition of the tropics and has excellent nutritional qualities. It is a grain legume, which can be grown in relatively infertile sandy soils with a minimum annual rainfall of 200mm. It is a fast growing, drought resistant crop, which also improves soil fertility by fixing atmospheric nitrogen. Cowpea grain typically contains 230-250g/kg crude protein (CP) and 500-670 g/kg starch on a dry matter (DM) basis and cowpea forage, i.e. the crop residue after harvesting grain, 210g CP and 600g digestible dry matter per kg DM.

The forage is used as a ruminant feed by smallholder farmers in West Africa, Asia and South America and therefore offers potential for use in the drier regions of Ethiopia. Under such conditions cowpea forage is usually superior to other forage legumes in terms of both quantity and quality. Cowpea crop is grown as a green manure and also a cover crop to increase soil fertility, retain moisture and reduce soil erosion.

Cowpea is primarily used in the form of dry seed cooked as a pulse in a large variety of dishes. Green beans or cut green pods used as a vegetable are of secondary importance. In some areas of semi humid tropics the cowpea provides more than half the plant protein in human diets. Sometimes cowpea is also grown for forage and as a cover crop.

5.1 New varieties

5.1.1 Variety name: **Jergade (NLLP_CPC-145-21)**

5.1.1.1 Agronomic and morphological characteristics

▪ Adaptation areas:	Lowland areas of the country like Melkassa, Meisso, Babile, Jinka, Kobo and similar agro -ecologies
○ Altitude (m.a.s.l):	1100-1600
○ Rain fall (mm)	450-800
▪ Seed rate (kg/ha)	25-30 (for raw planting)
▪ Spacing (Cm):	60 between row X 20 between plants
▪ Plating date:	At lowland areas like rift valley, early July
▪ Fertilizer rate (kg/ha):	
○ DAP/NPS:	100
○ UREA	50 (if not inoculated by rhizobia)
▪ Days to flowering:	48
▪ Days to maturity:	81
▪ Plant height (cm):	70
▪ Growth habit:	Determinate
▪ 100 seed weight (g)	14.17
▪ Seed color:	Cream
▪ Flower color:	Pink
▪ Number of seeds per pod:	11.3
▪ Number of pods per plant:	19.3
▪ Cooking quality:	
○ Percent non-soakers (%):	0.53
○ Cooking time (minute):	21.3
▪ Crop pest reaction*:	
▪ Yield (qt/ha)	
○ Research field	19.7-28
○ Farmers" field	18-25
5.1.1.2 Year of release	2020
5.1.1.3 Breeder/ Maintainer:	Melkassa ARC (EIAR)

* Resistance to bacterial blight diseases

5.1.2 Variety name: Kechene (NLLP_CPC-103B)

5.1.2.1 Agronomic and morphological characteristics

▪ Adaptation areas:	Lowland areas of the country like Melkassa, Meisso, Babile, Jinka, Kobo and similar agro -ecologies
○ Altitude (m.a.s.l):	1100-1600
○ Rain fall (mm)	450-800
▪ Seed rate (kg/ha):	25-30
▪ Spacing (cm):	60 between row x 20 between plants)
▪ Plating date:	At lowland areas like rift valley, early July
▪ Fertilizer rate (kg/ha):	
○ DAP/NPS:	100
○ UREA	50 (if not inoculated by rhizobia)
▪ Days to flowering:	48
▪ Days to maturity:	98
▪ Plant height (cm):	74.7
▪ Growth habit:	Determinate/erect
▪ 100 seed weight (g)	16.17
▪ Seed color:	Pink
▪ Flower color:	Pink
▪ Number of seeds per pod:	11.17
▪ Number of pods per plant:	16.83
▪ Cooking quality:	
○ Percent non-soakers (%):	0.4
○ Cooking time (minute):	23.2
▪ Crop pest reaction*:	
▪ Yield (qt/ha):	
○ Research field	17.8-30
○ Farmers' field	16-23
5.1.2.2 Year of release	2020
5.1.2.3 Breeder/ Maintainer:	Melkassa ARC (EIAR)

* Resistance to bacterial blight diseases

5.2 Varieties under production

5.2.1 Variety:	Keti (IT99K-1122)
5.2.1.1 Year of release:	2012
5.2.1.2 Breeder/ Maintainer:	MARC /EIAR
5.2.2 Variety:	82D-889
5.2.2.1 Year of release:	2008
5.2.2.2 Breeder/ Maintainer:	MARC /EIAR
5.2.3 Variety:	Bole (85D-3517-2)
5.2.3.1 Year of Release:	2006
5.2.3.2 Breeder/ Maintainer:	MARC /EIAR
5.2.4 Variety:	IT (98k-131-2)
5.2.4.1 Year of Release:	2006
5.2.4.2 Breeder/ Maintainer:	AwARC/SRARI
5.2.5 Variety:	Asrat (ITS 92KD-279-3)
5.2.5.1 Year of Release:	2001
5.2.5.2 Breeder/ Maintainer:	SRARC/ARARI
5.2.6 Variety:	Bekur (838 689 4)
5.2.6.1 Year of Release:	2001
5.2.6.2 Breeder/ Maintainer:	SRARC/ARARI

6. Lentil (*Lens culinaris*)

Lentil is one of the highland crops widely grown in Ethiopia. It is largely produced in the highland & semi-highland regions of the country mainly on clay soil. During **2019/20** cropping season, **87,443.89** hectares of land is covered with Lentil and about **1,193,288.93** quintals were produced. This crop is widely used for food because of its high protein content.

Apart from this, due to its ability to fix nitrogen, it is used in crop rotation with the nationally important crops. Although the above-mentioned realities indicate the national importance of lentil, the national yield is only about 8.35 quintals per hectare.

The Lentil is a much-branched annual, up to 18 inches high, with slender, angular stems. Its leaves are pinnate, with 4-7 pairs of more or less oval leaflets, about $\frac{1}{2}$ inches long. The small white flowers are papilionaceous with a large upper petal, two lateral petals, and two narrow petals between these.

6.1. New varieties

- No new variety released in 2020

6.2 Varieties under production

6.2.1 Variety:	Baredu (FLIP-2011-17L)
6.2.1.1. Year of release:	2019
6.2.1.2. Breeder/Maintainer:	Debere Ziet ARC/ EIAR
6.2.2 Variety:	Jiru (R-186 x FLIP 86-38L-2)
6.2.2.1. Year of release:	2015
6.2.2.2. Breeder/Maintainer:	Debre Birhan ARC/ARARI
6.2.3. Variety:	Dembí (El – 142 x r-186-3)
6.2.3.1. Year of release:	2013
6.2.3.2. Breeder/Maintainer:	D/Ziet ARC/EIAR
6.2.4 Variety:	Derso (Alemaya) FLIP-88-411-02-AK-14)
6.2.4.1 Year of release:	2012
6.2.4.2 Breeder/Maintainer:	EIAR/DZARC
6.2.5 Variety:	Teshale (FLIP 96-46L)
6.2.5.1 Year of release:	2004
6.2.5.2 Breeder/Maintainer:	DZARC/ EIAR
6.2.6 Variety:	Alem Tena (FLIP 96-49L)
6.2.6.1 Year of release:	2004
6.2.6.2 Breeder/Maintainer:	DZARC/ EIAR
6.2.7 Variety:	Assano (Flip 88-46)
6.2.7.1 Year of release:	2003
6.2.7.2 Breeder/Maintainer:	SARC/ OARI

6.2.8 Variety:	Alemaya 98(Flip 89-63L)
6.2.8.1 Year of release:	1997/98
6.2.8.2 Breeder/Maintainer:	DZARC/EIAR
6.2.9 Variety:	Gudo (Flip 84-78L)
6.2.9.1 Year of Release:	1995
6.2.9.2 Breeder/ Maintainer:	DZARC/ EIAR
6.2.10. Variety:	ADA (Flip- 86-14L)
6.2.10.1 Year of Release:	1995
6.2.10.2 Breeder/ Maintainer:	DZARC/ EIAR
6.2.11 Variety:	Chalew (NEL 358)
6.2.11.1 Year of Release:	1984
6.2.11.2 Breeder / Maintainer:	DZARC/ EIAR
6.2.12 Variety:	Checole (ENAL-2704)
6.2.12.1 Year of Release:	1984
6.2.12.2 Breeder/ Maintainer:	DZARC/ EIAR

7. Common bean (*Phaseolus vulgaris*)

Haricot bean also known as common bean is an herbaceous annual plant domesticated independently in ancient Mesoamerica and the Andes, and now grown worldwide for its edible bean, popular both dry and as a green bean. The common bean is a highly variable species with a long history. Bush varieties form erect bushes 20–60 cm tall, while pole or running varieties form vines 2–3 m long. All varieties bear alternate, green or purple leaves, divided into three oval, smooth-edged leaflets, each 6–15 cm long and 3–11 cm wide. The white, pink, or purple flowers are about 1 cm long, and give way to pods 8–20 cm long, 1–1.5 cm wide, green, yellow, black or purple in color, each containing 4–6 beans. The beans are smooth, plump, and kidney-shaped, up to 1.5 cm long, range widely in color, and are often mottled in two or more colors.

Haricot bean is one of the lowland pulse crops produced in the hot humid regions of Ethiopia. It has been known as an export crop for long period of time contributing to the foreign exchange earnings of the country. It is also grown as a food crop consumed in traditional dishes. Dry beans are mostly prepared as 'nifro' (boiled grain mixed with sorghum or maize), can be used for preparing 'wot' (local stew) and also the boiled split beans are eaten mixed with 'kocho' in south Ethiopia. Fresh beans (mature, whole non-dried grain) are popular for their taste and crack ability. The protein content is (22%) and its amino acid composition is high in lysine, which complements cereals and other staple foods in the diet. The current national average yield of haricot bean is 17 quintals per hectare. In the **2019/20** cropping season, the total area and total production was estimated to be **281,083.49** hectares and **4,855,470.93** quintals respectively

7.1 New varieties

7.1.1 Variety name: Mi'oftu (DAB-410)

7.1.1.1 Agronomic and morphological characteristics

▪ Adaptation areas:	East & West Hararghe and similar agro-ecologies
○ Altitude (m.a.s.l):	1500-2200
○ Rain fall (mm)	500-1200
▪ Planting date:	Mid of June to mid July
▪ Spacing (cm):	40 between rows 10 between plants
▪ Seed rate (kg/ha)	
○ Row planting	118.30
○ Broadcasting:	125-130
▪ Fertilizer rate (kg/ha)	
○ DAP:	100
○ Urea:	-
▪ Days to flowering	43
▪ Days to maturity	96
▪ Plant height (cm):	31.8
▪ Growth habit:	Type IIa(Indeterminate bush)
▪ Flower color:	White
▪ 100 seed weight (g)	46.4
▪ Seed color:	Red speckled
▪ Seed market class:	Speckled
▪ Pods per plant :	8-9
▪ Seeds per pods:	4-5
▪ Leaf color:	Light green
▪ Crop pest reaction *	
▪ Yield (q/ha)	24-37 at high potential areas (Haramaya & Hirna) 12-15 at Babile & Fedis
○ Research field	10-24
○ Farmers' field	2020
7.1.1.2 Year of release	Haramaya University
7.1.1.3 Breeder/ Maintainer:	* Resistant to Rust, Anthracnose, Halo blight, CBB and ALS

7.2 Varieties under production

7.2.1 Variety:

7.2.1.1 Year of release:

7.2.1.2 Breeder/Maintainer:

Haro Sabu-1 (SCR33)

Small Red Bean

2019

Haro Sabu ARC/ORARI

(Dumala) /ዶማል/ DAB-437

Speckled bean

2019

Sinana ARC/ORARI

(Hundaf) (ሁንዳፍ) DAB 277

Red Mottled

2019

Sinana ARC/ORARI

NUA 517 (Keye Bure

Metene) Large mottled

2019

Melkassa ARC/EIAR/

SCR15 (Keyyo)

Small Red Bean

2019

Melkassa ARC/EIAR/

SCN-11 (Awash Tikure)

Small black bean

2019

Melkassa ARC/EIAR/

RAZ-42 (Nekeze ayfere)

Small white bean

2019

Melkassa ARC/EIRA

Crop Variety Register

7.2.8. Variety:	Wabero (ዋዕር) White bean ICN Bansi X S X B 405/405/5C-1C-1C-51 2018 Sinana ARC/ORARI
7.2.8.1 Year of release:	
7.2.8.2 Breeder/Maintainer:	
7.2.9. Variety:	Gobu ገብ (Selian-97) Red bean 2018 Sinana ARC/ORARI
7.2.9.1 Year of release:	
7.2.9.2 Breeder/Maintainer:	
7.2.10. Variety:	DOYO (ዶዮ) SAB 627 White speckled bean 2018 Sinana ARC/ORARI
7.2.10.1. Year of release:	
7.2.10.2. Breeder/Maintainer:	
7.2.11. Variety:	SCR-26 (ስርሱ) Small red 2017 Hawassa ARC/SRARI
7.2.11.1 Year of release:	
7.2.11.2 Breeder/Maintainer:	
7.2.12. Variety:	DAB-277 (ዳልቻቸት) Large red speckled 2017 Hawassa ARC/SRARI
7.2.12.1 Year of release:	
7.2.12.2 Breeder/Maintainer:	
7.2.13. Variety:	MR14152-43-2P Small red 2017 Srinka ARC/ARARI
7.2.13.1. Year of release:	
7.2.13.2. Breeder/Maintainer:	
7.2.14. Variety:	Gorossa (Biofort large seeded-5) Large red mottled 2017 Melkassa ARC/EIRA
7.2.14.1. Year of release:	
7.2.14.2. Breeder/Maintainer:	
7.2.15. Variety:	Kello (F10B.sel new Bilfa 58) Large yellow 2017 Melkassa ARC/EIRA
7.2.15.1. Year of release:	
7.2.15.2. Breeder/Maintainer:	

Crop Variety Register

7.2.16. Variety:	Awash Mitin (Bifort small seeded -15) Small white 2017 Melkassa ARC/EIRA
7.2.16.1. Year of release:	
7.2.16.2. Breeder/Maintainer:	
7.2.17. Variety:	Derash (BZ-2) Large speckled 2017 Melkassa ARC/EIRA
7.2.17.1. Year of release:	
7.2.17.2. Breeder/Maintainer:	
7.2.18. Variety:	Zo asho (DAB 96) large red 2017 Melkassa ARC/EIRA
7.2.18.1. Year of release:	
7.2.18.2. Breeder/Maintainer:	
7.2.19. Variety:	Ado (SAB 736) 2015 MARC /EIAR
7.2.19.1 Year of release:	
7.2.19.2 Breeder/Maintainer:	
7.2.20. Variety:	Tafach (SAB 632) 2015 MARC /EIAR
7.2.20.1 Year of release:	
7.2.20.2 Breeder/Maintainer:	
7.2.21. Variety:	SER 119 2014 EIAR/MARC
7.2.21.1. Year of release:	
7.2.21.2. Breeder/Maintainer:	
7.2.22. Variety:	SER 125 2014 EIAR/M ARC
7.2.22.1. Year of release:	
7.2.22.2. Breeder/Maintainer:	
7.2.23. Variety:	Remeda (AFR-702-1) 2014 HwRC/ SARI
7.2.23.1 Year of release:	
7.2.23.2 Breeder/Maintainer:	
7.2.24 Variety:	Tatu (ETAW-01-L-7-6K) 2014 HwRC/ SARI
7.2.24.1 Year of release:	
7.2.24.2 Breeder/Maintainer:	

Crop Variety Register		
7.2.25. Variety:	Waju (ETAW-01-L-1-7A)	
7.2.25.1 Year of release:	2014	
7.2.25.2 Breeder/Maintainer:	HwRC/ SARI	
7.2.26. Variety:	Ada (KAT B1)	
7.2.26.1. Year of release:	2013	
7.2.26.2. Breeder/Maintainer:	Melkasa ARC	
7.2.27 Variety:	Dandesu (KAT B69)	
7.2.27.1 Year of release:	2013	
7.2.27.2 Breeder/Maintainer:	Melkasa ARC	
7.2.28 Variety:	Awash-2	
7.2.28.1 Year of release:	2013	
7.2.28.2 Breeder/Maintainer:	Melkasa ARC	
7.2.29 Variety:	Fedis (ECAB0060)	
7.2.29.1 Year of release:	2012	
7.2.29.2 Breeder/maintainer:	Haramaya University	
7.2.30 Variety:	Hirna (ECAB 0203)	
7.2.30.1 Year of release:	2012	
7.2.30.2 Breeder/maintainer:	Haramaya University	
7.2.31 Variety:	Babile (ECAB 0247)	
7.2.31.1 Year of release:	2012	
7.2.31.2 Breeder/maintainer:	Haramaya University	
7.2.32 Variety:	Hundane (K-132)	
7.2.32.1 Year of release	2012	
7.2.32.2 Breeder/maintainer:	Haramaya University	
7.2.33 Variety:	Tinike (RXR-10)	
7.2.33.1 Year of release:	2012	
7.2.33.2 Breeder/maintainer:	Haramaya University	
7.2.34 Variety:	Dandesu (BRC-Acc.No-4)	
7.2.34.1 Year of release:	2012	
7.2.34.2 Breeder/maintainer:	BARC/EIAR	

Crop Variety Register		
7.2.35 Variety:	SARI-1(CAW-02-04-11-4-1)	
7.2.35.1 Year of release:	2011	
7.2.35.2 Breeder/maintainer:	AwA RC	
7.2.36 Variety:	Morka (ECAB-0056)	
7.2.36.1 Year of release:	2011	
7.2.36.2 Breeder/maintainer:	MARC/ EIAR	
7.2.37 Variety:	GLP-2	
7.2.37.1 Year of release:	2011	
7.2.37.2 Breeder/maintainer:	MARC/ EIAR	
7.2.38 Variety:	LEHODE (DA-NAZCR-02-12)	
7.2.38.1 Year of release	2010	
7.2.38.2 Breeder/maintainer:	SARC/ARARI	
7.2.39 Variety:	Loko (AFR-716)	
7.2.39.1 Year of release:	2009	
7.2.39.2 Breeder/maintainer:	BARC/OARI	
7.2.40 Variety:	A197 X OM NAZ Cr 02-11	
7.2.40.1 Year of release:	2008	
7.2.40.2 Breeder/maintainer:	EIAR/MARC	
7.2.41. Variety:	Deme (SUG-131)	
7.2.41.1 Year of release:	2008	
7.2.41.2 Breeder/Maintainer:	EIAR/MARC	
7.2.42. Variety:	Kufanzik (MX-8754-9M)	
7.2.42.1 Year of registration:	2008	
7.2.42.2 Breeder/maintainer:	Haramaya University (HU)	
7.2.43. Variety:	Dursitu (DOR- 811)	
7.2.43.1 Year of registration:	2008	
7.2.43.2 Breeder/maintainer:	Haramaya University (HU)	

Crop Variety Register

7.2.44. Variety	SNNPR-120 (Hawassa Dume)
7.2.44.1 Year of registration:	2008
7.2.44.2 Breeder/maintainer:	SARIAWRC
7.2.45 Variety:	CRANSCOPE (Red speckled)
7.2.45.1 Year of registration:	2007
7.2.45.2 Breeder/Maintainer:	MARC/EIAR
7.2.46 Variety:	MONTCALM /ACOS RED (Red kidney)
7.2.46.1 Year of registration:	2007
7.2.46.2 Breeder/Maintainer:	MARC/EIAR
7.2.47 Variety:	GABISA (VAX-2)
7.2.47.1 Year of registration:	2007
7.2.47.2 Breeder/Maintainer:	BARC/OARI
7.2.48 Variety:	Chercher canning type (STTT-165-96) -
7.2.48.1 Year of release:	2006
7.2.48.2 Breeder/Maintainer:	HU
7.2.49. Variety:	Haramaya (G-843) Food type
7.2.49.1 Year of release:	2006
7.2.49.2 Breeder/Maintainer:	HU
7.2.50. Variety:	Chore (STTT-165-92) - canning type
7.2.50.1 Year of release:	2006
7.2.50.2 Breeder/Maintainer:	MARC/EIAR
7.2.51 Variety:	Bobe-red (XAN-310) - Food type
7.2.51.1 Year of release:	2006
7.2.51.2 Breeder/Maintainer:	MARC/EIAR

Crop Variety Register

7.2.52 Variety:	Melkadima (RAB-484) - Food type
7.2.52.1 Year of release:	2006
7.2.52.2 Breeder/Maintainer:	MARC/EIAR
7.2.53 Variety:	Batagonia (RWV-482) - Food type
7.2.53.1 Year of release:	2005
7.2.53.2 Breeder/Maintainer:	AwARC/ SRARI
7.2.54 Variety:	Anger (EMP-376) - Food type
7.2.54.1 Year of release:	2005
7.2.54.2 Breeder/Maintainer:	BARC/ OARI
7.2.55 Variety:	Tibe (812-BRC-28) - Food type
7.2.55.1 Year of release:	2004
7.2.55.2 Breeder/Maintainer:	BARC/ OARI
7.2.56 Variety:	Wedo (MAM-41) - Food type
7.2.56.1 Year of release:	2003
7.2.56.2 Breeder/Maintainer:	SRARC/ ARARI
7.2.57 Variety:	Ibbado (AFR-722) - Food type
7.2.57.1 Year of release:	2003
7.2.57.2 Breeder/Maintainer:	ARARC /SRARI
7.2.58 Variety:	Omo-95 (RWR-719) - Food type
7.2.58.1 Year of release:	2003
7.2.58.2 Breeder/Maintainer:	ARARC /SRARI

Crop Variety Register

7.2.59 Variety:	Nasir (Dicta-105) - Food type
7.2.59.1 Year of release:	2003
7.2.59.2 Breeder/Maintainer:	MARC/EIAR
7.2.60 Variety:	Dimtu (DOR-554) - Food type
7.2.60.1 Year of release:	2003
7.2.60.2 Breeder/Maintainer:	MARC/EIAR
7.2.61 Variety:	Tabor (A-788) - Food type
7.2.61.1 Year of release:	1998/99
7.2.61.2 Breeder/Maintainer:	ARARC/SRARI
7.2.62 Variety:	Zebra 98(GX-1175-3) - Food type
7.2.62.1 Year of release:	1998/99
7.2.62.2 Breeder/Maintainer:	MARC/EIAR
7.2.63 Variety:	Gobe Rasha-1(ICA-15541) - Food type
7.2.63.1 Year of release:	1998/99
7.2.63.2 Breeder/Maintainer:	MARC/EIAR
7.2.64 Variety:	Beshbesh/Melk 97 (Originally „Cross 5“) - Food type
7.2.64.1 Year of release:	1997/98
7.2.64.2 Breeder/Maintainer:	MARC/EIAR
7.2.65 Variety:	Melke/Areka 97 (Originally „cross 14“)- Food type
7.2.65.1 Year of release:	1997/98
7.2.65.2 Breeder/Maintainer:	MARCEIAR
7.2.66 Variety:	Ayenew- Food type
7.2.66.1 Year of release:	1997
7.2.66.2 Breeder/Maintainer:	HU

Crop Variety Register

7.2.67 Variety:	Gofta- Food type
7.2.67.1 Year of release:	1997
7.2.67.2 Breeder/Maintainer:	HU
7.2.68 Variety:	Atndaba /A-262/- Food type
7.2.68.1 Year of release:	1997
7.2.68.2 Breeder/Maintainer:	MARC/EIAR
7.2.69 Variety:	Red Wolaita- Food type
7.2.69.1 Year of release:	1974
7.2.69.2 Breeder/Maintainer:	MARC/EIAR
7.2.70 Variety:	AR04GY- Canning type
7.2.70.1 Year of release:	2005
7.2.70.2 Breeder seed Maintainer	MARC/EIAR
7.2.71 Variety:	Nazareth-2 (TA04JI) - Canning type
7.2.71.1 Year of release:	2005
7.2.71.2 Breeder seed Maintainer:	MARC/EIAR
7.2.72. Variety:	Melka Awash-98 (PAN- 182) - Canning type
7.2.72.1 Year of release:	1998/99
7.2.72.2 Breeder/Maintainer:	MARC/EIAR
7.2.73 Variety:	Roba - Canning type
7.2.73.1 Year of release:	1990
7.2.73.2 Breeder/Maintainer:	MARC/EIAR
7.2.74. Variety:	Awash - Canning type
7.2.74.1 Year of release:	1990
7.2.74.2 Breeder/Maintainer:	MARC/EIAR
7.2.75 Variety:	Mexican 142- Canning type
7.2.75.1 Year of release:	1973
7.2.75.2 Breeder/Maintainer:	MARC/EIAR

8. Soybean (*Glycine max*)

Soybean (U.S.) or soya bean (UK) (*Glycine max*) is a species of legume native to East Asia. The plant is classed as an oilseed and pulse. Fat-free (defatted) soybean meal is a primary, low-cost, source of protein for animal feeds and most prepackaged meals; soy vegetable oil is another valuable product of processing the soybean crop. Soybeans can produce at least twice as much protein per hectare as any other major vegetable or grain crop, 5 to 10 times more protein per acre than land set aside for grazing animals to make milk, and up to 15 times more protein per acre than land set aside for meat production.

Soybean is an internationally known important pulse crop. It is used for different purposes. In the **2019/20** cropping season, this crop covers about **54,543.26** hectares of land with an estimated production not less than **1,256,232.03** quintals. Since the oil content is high (16% and above) it is used for edible oil production. The by-product is cheap and an important source of protein for both human consumption & animal feed. It can also be used as Soya milk and Soya meat.

In Ethiopia FAFA Food Factory has imported and used soybeans to prepare balanced food for infants and adults. Recently the factory is trying to improve the food value of other food types by mixing with Soya bean flour. This indicates that the importance of Soybean in the market is increasing gradually.

8.1 New varieties

8.1.1. Variety name: Pawe-78 (Tgx-1990-21F)

8.1.1.1. Agronomic and morphological characteristics

▪ Adaptation area:	Pawe, Assossa, Metema, Sirinka, Humera, and similar agroecological areas.
○ Altitude (m.a.s.l):	650-1300
○ Rainfall (mm):	450-1586
▪ Seed rate (kg ha ⁻¹):	60-70
▪ Spacing(cm):	
○ Between rows:	40
○ Between plants:	5
▪ Planting date:	2nd July to last week of July
▪ Fertilizer rate (kg ha ⁻¹):	
○ DAP:	100
○ UREA	--
▪ Days to 50% flowering:	63
▪ Days to 95% maturity:	105
▪ Plant height(cm):	80.5
▪ Growth habit:	Determinate
▪ Seed coat color:	Yellowish white
▪ Seed shape:	Flattened
▪ Pubescence color:	Brown
▪ Hilum color:	Brown
▪ Flower color:	Pink
▪ Leaf shape:	Triangular
▪ 100 seed weight (g):	13.96
▪ Oil content (%):	22.37
▪ Protein content (%):	36.9
▪ Maturity group:	Early set
▪ Disease reaction*:	
▪ Yield (q/ha-1):	
○ Research field:	24.1-28.4
○ Farmers field:	19.1-23.3
8.1.1.2 Year of release/register:	2020
8.1.1.3 Breeder/Maintainer:	Pawe ARC/EIAR

* Tolerant to frog eye leaf spot and resistant to bacterial blight, brown leaf spot, leaf blotch and rust

8.1.2. Variety name: Tana Beles (Tgx-1990-59F)

8.1.2.1. Agronomic and morphological characteristics

▪ Adaptation area:	Pawe, Assossa, Bako, Areka, Jimma, and similar agroecological areas.
○ Altitude (m.a.s.l):	800-1860
○ Rainfall (mm):	800-1586
▪ Seed rate (kg ha^{-1}):	60-70
▪ Spacing(cm):	<ul style="list-style-type: none"> ○ Between rows: 60 ○ Between plants: 5
▪ Planting date:	2 nd June to last week of June
▪ Fertilizer rate (kg ha^{-1}):	<ul style="list-style-type: none"> ○ DAP: 100 ○ UREA --
▪ Days to 50% flowering:	69
▪ Days to 95% maturity:	128
▪ Plant height(cm):	80.8
▪ Growth habit:	Semi-determinate
▪ Seed coat color:	Yellowish white
▪ Seed shape:	Round
▪ Pubescence color:	Brown
▪ Hilum color:	Brown
▪ Flower color:	Pink
▪ Leaf shape:	Pointed ovate
▪ 100 seed weight (g):	14.8
▪ Oil content (%):	22.7
▪ Protein content (%):	39.4
▪ Maturity group:	Late set
▪ Disease reaction*:	
▪ Yield (q/ha^{-1}):	<ul style="list-style-type: none"> ○ Research field: 27.1-35.6 ○ Farmers field: 16-25.3

8.1.2.2 Year of release/register: 2020

8.1.2.3 Breeder/Maintainer: Pawe ARC/EIAR

* *Tolerant to frog eye leaf spot and resistant to bacterial blight,
brown spot, leaf blotch and rust*

8.1.3. Variety name: Gute (PM-12-3)

8.1.3.1. Agronomic and morphological characteristics

▪ Adaptation area:	--
○ Altitude (m.a.s.l):	1650-1900
○ Rainfall (mm):	1000-1200
▪ Seed rate (kg ha^{-1}):	60-70
▪ Spacing(cm):	<ul style="list-style-type: none"> ○ Between rows: 60 ○ Between plants: 10
▪ Planting date:	Mid June
▪ Fertilizer rate (kg ha^{-1}):	<ul style="list-style-type: none"> ○ NPS: 100 at planting ○ UREA --
▪ Days to 50% flowering:	74
▪ Days to 95% maturity:	141
▪ Plant height(cm):	-
▪ Growth habit:	Indeterminate
▪ Seed coat color:	Light yellow
▪ Seed shape:	Round
▪ Seed size:	Medium
▪ Seed coat luster:	Dull
▪ Number of pods plant-1:	81
▪ Number of seeds pod-1:	3
▪ Hilum color:	White
▪ Leaf size :	Large
▪ 100 seed weight (g):	20
▪ Oil content (%):	22.3
▪ Protein content (%):	39.4
▪ Disease reaction*:	
▪ Yield (q/ha^{-1}):	<ul style="list-style-type: none"> ○ Research field: 18-27 ○ Farmers field: 15-24

8.1.3.2 Year of release/register: 2020

8.1.3.3 Breeder/Maintainer: Bako ARC/ ORARI

* *Tolerant to Bacterial blight frog Bacterial pustule and rust*

8.1.4. Variety name: **Billo (PM-12-37)**

8.1.4.1. Agronomic and morphological characteristics

▪ Adaptation area:	-.
○ Altitude (m.a.s.l):	1650-1900
○ Rainfall (mm):	1000-1200
▪ Seed rate (kg ha^{-1}):	60-70
▪ Spacing(cm):	
○ Between rows:	60
○ Between plants:	10
▪ Planting date:	Mid June
▪ Fertilizer rate (kg ha^{-1}):	
○ NPS:	100 at planting
○ UREA	--
▪ Days to 50% flowering:	65
▪ Days to 95% maturity:	131
▪ Plant height(cm):	-
▪ Growth habit:	Indeterminate
▪ Seed coat color:	Yellow
▪ Seed shape:	Oval
▪ Seed size:	Medium
▪ Seed coat luster:	Dull
▪ Number of pods plant $^{-1}$:	80
▪ Number of seeds pod $^{-1}$:	3
▪ Hilum color:	White
▪ Leaf size :	Large
▪ 100 seed weight (g):	18
▪ Oil content (%):	24.7
▪ Protein content (%):	33.4
▪ Disease reaction*:	
▪ Yield (q/ha^{-1}):	
○ Research field:	18-24
○ Farmers field:	15-19

8.1.4.2 Year of release/register: 2020

8.1.4.3 Breeder/Maintainer: Bako ARC/ ORARI

* Tolerant to *Bacterial blight*, *frog Bacterial pustule* and *rust*

8.1.5. Variety name: **Melko Bonsa -1 (JM-CLK/CRFD-15-SD)**

8.1.5.1. Agronomic and morphological characteristics

▪ Adaptation area:	Jima, Bedele, Metu, Tepi, Asosa and similar agro ecology
○ Altitude (m.a.s.l):	650-1800
○ Rainfall (mm):	450-1500
▪ Seed rate (kg ha^{-1}):	60-70
▪ Spacing(cm):	
○ Between rows:	60
○ Between plants:	5
▪ Planting date:	end of May to mid June
▪ Fertilizer rate (kg ha^{-1}):	
○ NPSB:	121
○ UREA	--
▪ Days to 50% flowering:	63
▪ Days to 95% maturity:	118
▪ Plant height(cm):	64.5
▪ Growth habit:	Determinate
▪ Seed coat color:	Yellow
▪ Seed shape:	Round
▪ Pubescence color:	Gray
▪ Hilum color:	Buff
▪ Flower color:	Purple
▪ Leaf shape:	Intermediate
▪ 100 seed weight (g):	18.8
▪ Oil content (%):	21.82
▪ Protein content (%):	35.65
▪ Maturity group:	Medium maturing
▪ Disease reaction*:	
▪ Yield (q/ha^{-1}):	
○ Research field:	25-35
○ Farmers field:	18-25

8.1.5.2 Year of release/register: 2020

8.1.5.3 Breeder/Maintainer: Jimma ARC/EIAR

* Tolerant to *soybean rust*, *bacterial blight*, *bacterial pustule*

8.2 Varieties under production

8.2.1 Variety:	Andinet (TGX-1989-75F)	8.2.10. Variety:	KORME (AGS-129-2)
8.2.1.1 Year of release/register:	2019	8.2.10.1. Year of release:	2011
8.2.1.2 Breeder/Maintainer:	Pawe ARC/EIAR	8.2.10.2. Breeder /Maintainer:	BARC
8.2.2 Variety:	Pawe 03 (TGX-1987-62F)	8.2.11. Variety:	KATTA (PR-145-2)
8.2.2.1 Year of release/register:	2016	8.2.11.1. Year of release:	2011
8.2.2.2 Breeder/Maintainer:	Pawe ARC/EIAR	8.2.11.2. Breeder /Maintainer:	BARC
8.2.3 Variety:	Gazale	8.2.12. Variety:	Wegayen (TGX-1998-29F)
8.2.3.1 Year of release/register:	2015	8.2.12.1. Year of release:	2010
8.2.3.2 Breeder/Maintainer:	HwARC/SARI and Pawe/EIAR	8.2.12.2. Breeder /Maintainer:	PARC
8.2.4 Variety:	Pawe 01 (PARC-2013-2)	8.2.13. Variety:	Gizo (TGX-1885-33F)
8.2.4.1 Year of release/regester:	2015	8.2.13.1. Year of release:	2010
8.2.4.2 Breeder/Maintainer:	Pawe ARC/EIAR/	8.2.13.2. Breeder /Maintainer:	PARC
8.2.5 Variety:	Pawe-02 (PARC-2013-3)	8.2.14. Variety:	Gishama (PR-143-(26))
8.2.5.1 Year of release/regester:	2015	8.2.14.1 Year of release:	2010
8.2.5.2 Breeder/Maintainer:	Pawe ARC/EIAR/	8.2.14.2. Breeder /Maintainer:	PARC
8.2.6 Variety:	Nyala	8.2.15 Variety:	BOSHE (IAC-13-1)
8.2.6.1 Year of release:	2014	8.2.15.1 Year of registration:	2008
8.2.6.2 Breeder/Maintainer:	HwRC/ SARI and Pawe ARC/EIAR	8.2.15.2 Breeder/Maintainer:	BARC/OARI
8.2.7. Variety:	Hawssa-04 (AGS-7-1)	8.2.16. Variety:	Dhidhessa (PR-149-81-EP-7-2)
8.2.7.1. Year of release:	2012	8.2.16 Year of registration:	2008
8.2.7.2. Breeder /Maintainer:	HWARC	8.2.16.2 Breeder/maintainer:	BARC/OARI
8.2.8. Variety:	NOVA	8.2.17. Variety:	AFGAT (TGX-1892-10F)
8.2.8.1. Year of release:	2012	8.2.17.1 Year of release:	2007
8.2.8.2. Breeder /Maintainer:	HWARC	8.2.17.2 Breeder/Maintainer:	AwARC/SRARI
8.2.9. Variety:	Wello (TGX-1895-33F)	8.2.18 Variety:	ETHIO-YUGOSLAVIA
8.2.9.1. Year of release:	2012	8.2.18.1 Year of registration:	2007
8.2.9.2. Breeder /Maintainer:	SARC/ARARI	8.2.18.2 Breeder/Maintainer:	BARC/OARI

8.2.19 Variety:	Awassa-95 (G 2261)
8.2.19.1 Year of release:	2005
8.2.19.2 Breeder/Maintainer:	AwARC/SRARI
8.2.20 Variety:	Belesa-95 (PR-149)
8.2.20.1 Year of release:	2003
8.2.20.2 Breeder/Maintainer:	ARARC/SRARI
8.2.21 Variety:	Jalale (AGS-217)
8.2.21.1 Year of release:	2003
8.2.21.2 Breeder/Maintainer:	BARC/OARI
8.2.22 Variety:	Cheri (IPB-81-EP7)
8.2.22.1 Year of release:	2003
8.2.22.2 Breeder/Maintainer:	BARC/OARI
8.2.23 Variety:	Clark 63K
8.2.23.1 Year of release:	1981/82
8.2.23.2 Breeder/Maintainer:	AwARC/SRARI
8.2.24 Variety:	Coker 240
8.2.24.1 Year of release:	1981/82
8.2.24.2 Breeder/Maintainer:	AwARC/SRARI
8.2.25 Variety:	Davis
8.2.25.1 Year of release:	1981/82
8.2.25.2 Breeder/Maintainer:	AwARC/SRARI
8.2.26 Variety:	Williams
8.2.26.1 Year of release:	----
8.2.26.2 Breeder/Maintainer:	AwARC/SRARI
8.2.27 Variety:	Crawford
8.2.27.1 Year of release:	-
8.2.27.2 Breeder/Maintainer:	AwARC/SRARI

9. Grass pea (*Lathyrus sativus L.*)

Grass pea is among the important highland pulses of Ethiopia grown on more than **145,537.45** hectares with the production of about **3,126,795.03 quintals** in this **2019/20** cropping season. It is one of the important crops of economic significance in Ethiopia which is the fifth most important pulse crop after faba bean, field pea, chickpea and haricot bean. It is the cheapest source of protein in the diets of most people. Grass pea is a highly popular food and feed legume in the farming system due to its tolerance of drought, flooding and diseases and also its importance in ameliorating soil fertility. It is commonly grown as a double crop after the cereals; tef or barley.

Its paradoxical growth elasticity during both under and over moisture stress made it exceptional but important behavior. It is a crop of insurance to depend on during crop failures usually due to the recurrent droughts. Despite its importance, presence of neurodegenerative toxin abbreviated as Beta-ODAP, (which is responsible for irreversible crippling of lower limbs (but not lethal), if the seeds are consumed as a major part of the diet for an extended period) is a discouraging factor for grass pea production. It has comparable yield to other pulse crops. Grass pea is tolerant to most biotic and abiotic stresses, ameliorates poor soil and gives relatively higher biomass.

The development of biotechnology and its application in grass pea has resulted in soma clones with neurotoxin ODAP content of less than 0.1% (100 mg ODAP/100gm seed) in India. Low ODAP lines are also available at the International Center for Agricultural Research in Dry land Areas (ICARDA).

9. 1. New varieties

- No new variety released in 2020

9.2 Varieties under production

9.2.1 Variety:	Wasie (ILAT-LS-LS-B2)
9.2.1.1 Year of release:	2005
9.2.1.2 Breeder/Maintainer:	DZARC/EIAR

10. Mung bean (*Vigna radiata* L)

Mung bean is an ancient and well-known crop in Asia. It is often included in rice or wheat-based cropping systems in the tropics and subtropics. The Mung bean, also known as green bean, choroko (in Swahili), is native to Bangladesh, India, and Pakistan. It is also cultivated in several countries of Asia, Africa, and South America. The beans are small, ovoid in shape, and green in color. Mung beans are a warm season crop requiring 90–120 days of frost free conditions from planting to maturity. Adequate rainfall is required from flowering to late pod fill in order to ensure good yield. Mung beans are adapted to the same climatic areas as soybean, dry bean and cowpea.

Mung beans are grown widely for use as a human food (as dry beans or fresh sprouts), but can be used as a green manure crop and as forage for livestock. Sprouts are high in protein (21%–28%), calcium, phosphorus and certain vitamins. Because they are easily digested they replace scarce animal protein in human diets in tropical areas of the world.

Mung bean is in the Legume family of plants and is closely related to adzuki and cowpea. It is a warm season annual, highly branched and having trifoliate leaves like the other legumes. Both upright and vine types of growth habit occur in mung bean, with plants varying from one to five feet in length. The pale yellow flowers are borne in clusters of 12–15 near the top of the plant. Mature pods are variable in color (yellowish-brown to black), about five inches long, and contain 10 to 15 seeds. Self pollination occurs so insect and wind is not required. Mature seed colors can be yellow, brown, mottled black or green, depending upon variety.

In Ethiopia mung bean ,*Masho* ' is produced both for local consumption and export. In **2019/20** cropping season the total area under production was **49,123.52** hectares with the production of **557,928.53** quintals.

10.1 New varieties

- No new variety released in 2020

10.2 Varieties under production

10.2.1 .Variety:	NVL-1
10.2.1.1. Year of release:	2014
10.2.1.2. Breeder/ Maintainer:	Nirmal Plc/EIAR/MARC
10.2.2 .Variety:	Arkebe (SML-668)
10.2.2.1. Year of release:	2014
10.2.2.2. Breeder/ Maintainer:	Humera ARC/ TARI
10.2.3 Variety:	Rasa (N-26)
10.2.3.1 Year of release:	2011
10.2.3.2 Released by	MARC/ EIAR
10.2.4. Variety:	MH-97-6 (Borda)
10.2.4.1 Year of release:	2008
10.2.4.2 Released by	SARI/AWRC

11. Adzuki bean (*Vigna angularis*)

11.1 New varieties

- No new variety released in 2020

11.2 Varieties under production

11.2.1 Variety:	Erimo (Adzuki bean)
11.2.1.1 Year of release:	2015
11.2.1.2 Breeder/Maintainer:	MARC /EIAR and ACOS Ethiopia

12. Fenugreek (*Trigonella foenum-graecum*)

Fenugreek is a plant in the family of Fabaceae. It is used both as an herb (the leaves) and as a spice (the seed). It is cultivated worldwide as a semi-arid crop. It is frequently used in curry. The word for fenugreek in Amharic is *abesh*, and the seed is often used in Ethiopia as a natural herbal medicine in the treatment of diabetes. It is also sometimes used as an ingredient in the production of clarified butter.

Major fenugreek producing countries are India, Argentina, Egypt, France, Spain, Turkey, Morocco and China. Fenugreek seed is widely used as a galactagogue (milk producing agent) by nursing mothers to increase inadequate breast milk supply. Since the maple syrup-like flavor is strong and not always liked, the seeds are ground to a powder and administered in capsules. Studies have shown that fenugreek is a potent stimulator of breast milk production and its use was associated with increases in milk production of as much as 900%.

According to Central Statistics Agency **2019/20** report, the total area under production was **27,595.21** hectares and the production was estimated to be over **376,728.73** quintals.

12.1. New varieties

- No new variety released in 2020

12. 2 Varieties under production

12.2.1 Variety :	Bishoftu (FG-10)
12.2.1.1 Year of release:	2017
12.2.1.2 Breeder/Maintainer:	Tepi National Species RC and Debere Ziet ARC/EIAR
12.2.2 Variety:	Wereilu (201606/2)
12.2.2.1 Year of release:	2016
12.2.2.2 Breeder/Maintainer:	Sirinka ARC/ARARI
12.2.3 Variety:	Jamma (202169/3)
12.2.3.1 Year of release:	2016
12.2.3.2 Breeder/Maintainer:	Sirinka ARC/ARARI
12.2.4 Variety:	Burqaa (201617Sno3-7)
12.2.4.1 Year of release:	2016
12.2.4.2 Breeder/Maintainer:	Sinana ARC/OARI
12.2.5 Variety:	Ebbisa (AC-TR-7)
12.2.5.1 Year of release:	2012
12.2.5.2 Breeder/Maintainer:	SARC/OARI
12.2.6 Variety:	Hunda-01 (FG-18)
12.2.6.1 Year of release:	2006
12.2.6.2 Breeder/Maintainer:	SARC/OARI
12.2.7 Variety:	Chala (FG-47-01)
12.2.7.1 Year of release:	2005
12.2.7.2 Breeder/Maintainer:	DZARC/EIAR

Group III. Oil Crops

1. Noug (*Guizotia abyssinica* L.)

Noug is an oil-seed crop, indigenous to Ethiopia and holds significant promise for improving rural livelihoods in Sub-Saharan Africa. The species is used in intercropping systems, grows on poor but also extremely wet soils, and contributes to soil conservation. It contributes up to 50% of the Ethiopian oil-seed crop. Noug diversity is numerous in Ethiopia and Eritrea and local farmers are able to distinguish many landraces. Apart from Africa (East and South African countries), noug is cultivated in parts of South Asia, where it was introduced thousand years ago, and the West Indies.

Noug belongs to the Compositae family and is closely related to sunflower. It differs from domesticated sunflower mainly due to its high level of branching, numerous flower heads and small seeds. The oil content of noug seed varies from 30 to 50%. The fatty acid composition is typical for seed oils of the Compositae family with linoleic acid being the dominant component.

It is one of the major oil crops of Ethiopia with the highest share of area coverage. The oil quality is very high and is comparable to the cooking oils used in the developed countries. In **2019/20** cropping season, **257,990.95** ha of land was covered with noug and about **2,916,368.54** quintals were estimated to be produced.

1.1 New variety

- No new variety released in 2020

1.2 Varieties under production

1.2.1 Variety:	Ginchi-1(PGRC/E 227187)
1.2.1.1 Years of release:	2010
1.2.1.2 Breeder seed maintainer:	HARC
1.2.2 Variety:	Shambu-1 (PGRC/E 228423)
1.2.2.1 Year of release:	2002
1.2.2.2 Breeder/Maintainer	HARC/EIAR
1.2.3 Variety:	Kuyu
1.2.3.1 Year of release:	1994
1.2.3.2 Breeder/Maintainer:	HARC/EIAR
1.2.4 Variety:	Fogera
1.2.4.1 Year of release:	1988
1.2.4.2 Breeder/Maintainer:	HARC/EIAR
1.2.5 Variety:	Esete-1
1.2.5.1 Year of release:	1988
1.2.5.2 Breeder/Maintainer:	HARC/EIAR

2. Linseed (*Linum usitatissimum* L.)

Linseed is a plant in the family of Linaceae with a diploid chromosome number of $2n=30$. It is a short-lived perennial which occurs in western and southern Europe and western Asia. India is an important centre of genetic diversity for *Linum usitatissimum*, but cannot be considered the centre of origin because of the absence of its progenitor *Linum bienne*. *Linum usitatissimum* was among the first crops to be taken into cultivation in the Fertile Crescent more than 8000 years ago. It developed into a fiber crop, called „fiber flax” and an oilseed crop, called „linseed”. Mediterranean and European types developed into fiber flax; short-season types adapted to the warmer climates of western Asia, the Indian subcontinent and Ethiopia developed into linseed types.

In tropical Africa linseed production is concentrated in the Ethiopian highlands, where linseed has been grown since time immemorial. At higher altitudes it is the second most important oil crop after noug (*Guizotia abyssinica* (L.f.) Cass.). Linseed is also grown on a small scale in the other highlands of East Africa.

In Ethiopia the seed is commonly roasted, ground and mixed with spices and some water to be served along with local breads. It is also consumed in soups, soft drinks and with porridges or cooked potatoes. Its industrial use is higher than all other oil crops. Its highest contribution in paint, soap, lubricant and pharmaceutical factories helped to gain international attention. In the **2019/20** cropping season, **69,149.87** ha of land was covered with linseed and the production was estimated to be **796,948.86** quintals.

2.1 New varieties

- No new variety released in 2020

2.2 Varieties under production

2.2.1. Variety: Yadanno

Welen (ወለን) (PGRC/E
16033xCI-1652/36)

2.2.1.1. Year of release:

2019

2.2.1.2. Breeder/ Maintainer:

KARC/EIAR

2.2.2. Variety:

Horesoba (ሮሬሶባ)
Chilalo X R12-N27G/SPS6

2.2.2.1. Year of release:

2019

2.2.2.2. Breeder/ Maintainer:

Sinana ARC/ORARI

2.2.3. Variety: Yadanno

Kuma/ ክሙ (R734D X B-96/111)

2.2.3.1. Year of release:

2016

2.2.3.2. Breeder/ Maintainer:

KARC/EIAR

2.2.4. Variety: Yadanno

2.2.4.1. Year of release:

(H31 X Belay-96-208) የዳኖ

2015

2.2.4.2. Breeder/ Maintainer:

KARC/EIAR

2.2.5. Variety:

2.2.5.1 Year of release:

Bekoji-14

2014

2.2.5.2 Breeder/Maintainer:

HARC/EIAR

2.2.6. Variety:

2.2.6.1. Year of Release:

BILTSTAR

2013

2.2.6.2. Breeder/Maintainer:

Sole Agro PLC

2.2.7. Variety:

2.2.7.1 Year of Release:

Furtu (CI-1525 X
PGRC/E10011/

2013

2.2.7.2 Breeder/Maintainer:

KARC/EIAR

2.2.8. Variety:

Jiituu
(CI-1652xOmega/ B/53)

2012
SARC/OARI

2.2.9. Variety:

Kassa-2 (PGRC/E 10306X
Chilalo/y/3)
2012
HARC/EIAR

2.2.10 Variety:

CI-1652xOmega/23 (Jeldu)
2010
HARC

2.2.11. Variety:

Bakalcha በካልታ
(Chilalo XOmega/4B)
2010
KARC/EIAR

2.2.12 Variety:

Dibannee
(CI-1525XCDC1747/21)
2009
SARC/OARI

2.2.13 Variety:

Chilalo (Kulumsa-1)
2006
KARC/EIAR

2.2.14 Variety:

Tolle
(CI2698 X PGRC/E 13611/B)
2004
HARC/EIAR

2.2.15 Variety:

Berene (PGRC/E 01 3627)
2001
HARC/ EIAR

2.2.16 Variety:	Geregera (R7-20D)
2.2.16.1 Year of release:	1999/00
2.2.16.2 Breeder/Maintainer:	ADARC/ARARI
2.2.17. Variety:	Belay-96 (IAR/Li)
2.2.17.1 Year of release:	1996/97
2.2.17.2 Breeder/Maintainer:	HARC/ EIAR
2.2.18 Variety:	Chilalo
2.2.18.1 Year of release:	1992
2.2.18.2 Breeder/Maintainer:	HARC/ EIAR
2.2.19 Variety:	CI-1525
2.2.19.1 Year of release:	1984
2.2.19.2 Breeder/Maintainer:	HARC/ EIAR
2.2.20 Variety:	CI - 1652
2.2.20.1 Year of release:	1984
2.2.20.2 Breeder/Maintainer:	HARC/ EIAR

3. Rapeseed and Ethiopian mustard (*Brassica spp.*)

The culture and cultivation of Ethiopian mustard (*Brassica carinata* Braun) in Ethiopia is as old as cultivation of cereals, which is believed to date back in the 4th to 5th Millennia BC. There are two types of *Brassica spp.* cultivated in Ethiopia. These are Ethiopian mustard (*Brassica carinata* Braun) known us 'Gomenzer' in Amharic, and the exotic rapeseed (*Brassica napus*). It is widely cultivated in the highland and semi-highland parts of the country with altitudes ranging from 1800-2600 m.a.s.l.; and it prefers low temperature with average rainfall of 650 mm. Rapeseed requires high nutrient status of the soil with high level of nitrogen. However, it can grow on wide range of soil types, from light to heavy.

Despite its long history and deep-rooted tradition of production, however, until very recently it has never been known as a full-fledged field crop. Its cultivation was so limited that it was grown either as a garden crop around homestead or sparsely mixed within thick crop stands of maize, sorghum, tef and finger millet. One very important additional advantage in the farming systems, especially in respect of growing in large-scale farms, is the role it can play as a break crop for the cultivation of cereals with comparable ecological amplitude.

Traditional utilization of this crop in Ethiopia, embraces quite an array of purposes. Ground seeds are used to grease a bread-baking clay pan, cure certain ailments or stomach upsets and prepare beverages; the leaves of young plants are good source of vegetable relish. The oil, very often adulterated with the premium oil from noug is the commercial product

Different research data show that the crop has about 40-46% oil content. Even though the crop is widely produced in the country, its high "erucic" and "linoleic" acids content has limited its use either for food or feed. In **2019/20** cropping season, **23,045.53** ha of land are covered with *Brassica spp.* and the annual production was estimated at **420,461.93** quintals.

3a Rape seed (*Barssica napus*)**3a. 1. New varieties**

- No new variety released in 2020

3a.2 Variety under production

3a.2.1. Variety:	Swifter
3a.2.1.1. Year of registration:	2016
3a.2.1.2. Breeder/ Maintainer:	BSAF Office representative
3a.2.2. Variety:	Axana
3a.2.2.1. Year of registration:	2015
3a.2.2.2. Breeder/ Maintainer:	BSAF Office representative
3a.2.3. Variety:	Belinda
3a.2.3.1. Year of registration:	2015
3a.2.3.2. Breeder/ Maintainer:	BSAF Office representative

3b Ethiopian mustard (*Barssica carinata*)**3b. 1. New varieties**

- No new variety released in 2020

3b.2 Variety under production

3b.2.1 Variety:	Tesfa (S-67 X Holetta – 1/7/2/14/2/ 28/2
3b.2.1.1 Year of release:	2018
3b.2.1.2 Breeder/Maintainer:	Holetta ARC/EIAR
3b.2.2 Variety:	Derash (S-67 X Holetta – 1/9/2/18/2/45/3)
3b.2.2.1 Year of release:	2018
3b.2.2.2 Breeder/Maintainer:	Holetta ARC/EIAR

3b.2.3 Variety: Awassa-1 (Acc-153)
 3b.2.3.1 Year of release: 2006
 3b.2.3.2 Maintainer: ARC/SRARI

3b.2.4 Variety: Kokate-1 (PGRC/E/1/2/208507)
 3b.2.4.1 Year of release: 2006
 3b.2.4.2 Breeder/Maintainer: AwARC/SRARI

3b.2.5 Variety: MS-YD X Zem-1-BCR-5 (Holetta-1)
 3b.2.5.1 Year of release: 2005
 3b.2.5.2 Breeder/Maintainer: HARC/EIAR

3b.2.6 Variety: Muger (PGRC/E 20021)
 3b.2.6.1 Year of release: 2002
 3b.2.6.2 Breeder/Maintainer: ADARC/ ARARI

3b.2.7 Variety: Tule (PGRC/E 21163)
 3b.2.7.1 Year of release: 2002
 3b.2.7.2 Breeder/Maintainer: ADARC/ ARARI

3b.2.8 Variety: Shaya (S-67x zem-1/xs-67c6)
 3b.2.8.1. Year of release: 1993
 3b.2.8.2 Breeder/Maintainer: SARC/OARI

3b.2.9 Variety: Yellow dodolla
 3b.2.9.1 Year of release: 1986
 3b.2.9.2 Breeder/Maintainer: HARC/EIAR

3b.2.10 Variety: S-67
 3b.2.10.1 Year of release: 1976
 3b.2.10.2 Breeder/Maintainer: HARC/EIAR

4. Sesame (*Sesamum indicum*.)

It is an annual short-day warm season plant and mostly grown as a rain fed crop in the rainy season in the semi-arid regions of the tropics and subtropics. Temperatures of around 27°C favor growth and fruiting. It is usually grown in areas with an annual rainfall of 625-1100 mm, fairly drought resistant, but is very intolerant to water lodging and excessive rainfall. It is adapted to a wide range of soils, but prefers deep, well-drained, fertile, sandy loam soils.

In Ethiopia, sesame seed grows mainly in the northern and northwestern region. The sowing is done during June to mid-September and harvesting is from October onwards. The country is one of the major sesame exporting nations, currently ranked at the fourth position in world markets. Types of Sesame Seed in Ethiopia are: - Humera, Gondar and Wollega types, where Humera Sesame seed is the main type exported by the country. Ethiopian commodity exchange has started trading in sesame seeds since May 2009. The exchange provides platform to deal in Humera sesame seed grade 1 and 2, Gondar Sesame Seed grade 1 and 2 and Wollega Sesame Seed grade 1, 2 and 3.

Sesame is used for food. The dried seeds are eaten in soups and, mixed with sugar, are a popular sweet in Africa and Asia. It is used as a salad and cooking oil. The oil is also used in the manufacture of margarine and compound cooking fats. In **2019/20** cropping season, the total land coverage of sesame in Ethiopia is **375,119.95** ha and the production was estimated at about **2,626,541.89** quintals. It is one of the most important export crops in the country. The Setit Humera (Tigray), Metema (Amhara) and West Wellega (Oromia) areas are the major production regions of sesame in the country.

4.1 New variety

4.2 Varieties under production

4.2.1. Variety:

4.2.1.1. Year of release:

4.2.1.2. Breeder/ Maintainer:

Yale (EW002 x Dicho 5-3)

2019

Bako ARC/ORARI

4.2.2. Variety:

4.2.2.1. Year of release:

4.2.2.2. Breeder/ Maintainer:

Hagal (EW002 xObsa22-1)

2019

Bako ARC/ORARI

4.2.3. Variety:

4.2.3.1. Year of release:

4.2.3.2. Breeder/ Maintainer:

Gida Ayana (Ass-acc-29)

2018

Humera ARC/TARI and
Asossa ARC/EIAR

4.2.4. Variety:

4.2.4.1. Year of release:

4.2.4.2. Breeder/ Maintainer:

Waliin (BG-004-1)

2017

Bako ARC/ORARI

4.2.5. Variety:

4.2.5.1. Year of release:

4.2.5.2. Breeder/ Maintainer:

Setit-3 (HuARC-4)

2017

Humera ARC/TRARI

4.2.6. Variety:

4.2.6.1. Year of release:

4.2.6.2. Breeder/ Maintainer:

Acc.051-02-sel-1-(2)

2017

Werer ARC/EIAR

4.2.7. Variety:

4.2.7.1. Year of release:

4.2.7.2. Breeder/ Maintainer:

Benishangul-1

(WW-001(6))

2016

Humera ARC/TARI and
Asossa ARC/EIAR

4.2.8. Variety:

4.2.8.1. Year of release:

4.2.8.2. Breeder/Maintainer:

Setit-2 (J-03)

2016

Humera ARC/TARI

Crop Variety Register	
4.2.9. Variety:	Gonder-1 (Acc.ba002)
4.2.9.1. Year of release:	2016
4.2.9.2. Breeder/Maintainer:	Gonder ARC/ARARI
4.2.10. Variety:	BaHaNecho-(W-109/WSS/ (Acc-EW-012(5))
4.2.10.1 Year of release:	2016
4.2.10.2 Breeder/Maintainer:	Haramaya University
4.2.11. Variety:	BaHaZeyit-(W- 119/WSM/ (Acc-EW-023(1))
4.2.11.1 Year of release:	2016
4.2.11.2 Breeder/Maintainer:	Haramaya University
4.2.12. Variety:	Dangur (E.W.013.(8))
4.2.12.1. Year of release:	2015
4.2.12.2. Breeder/ Maintainer:	Pawe ARC/EIAR
4.2.13. Variety:	Chalasa - EW023 (2)
4.2.13.1. Year of release:	2013
4.2.13.2. Breeder/Maintainer:	BARC/OARI
4.2.14. Variety:	Acc.00047
4.2.14.1. Year of release:	2013
4.2.14.2. Breeder/Maintainer:	Sirinka ARC
4.2.15. Variety:	Setit-1 (col sel p#1)
4.2.15.1 Year of release:	2011
4.2.15.2 Breeder/Maintainer:	Humera ARC/TARI
4.2.16. Variety:	Humera-1(ACC.038 sel.1)
4.2.16.1 Year of release:	2011
4.2.16.2 Breeder/Maintainer:	Humera ARC/TARI
4.2.17. Variety:	Barsan/ACC-00016 (1)
4.2.17.1 Year of release:	2010
4.2.17.2 Breeder/Maintainer:	Go PARC/SoRPARI
Crop Variety Register	
4.2.18. Variety:	Lidan / ACC-00044 (2)
4.2.18.1 Year of release:	2010
4.2.18.2 Breeder/Maintainer:	Go PARC/SoRPARI
4.2.19 Variety:	Obsa (EW004)
4.2.19.1. Year of release:	2010
4.2.19.2. Breeder/ maintainer:	BARC/OARI
4.2.20. Variety:	Dicho (EW015)
4.2.20.1. Year of release:	2010
4.2.20.2. Breeder/ maintainer:	BARC/OARI
4.2.21. Variety:	AHADU (Kelafo 74XC-22sel4)
4.2.21.1. Year of release:	2007
4.2.21.2. Breeder/Maintainer:	SRARC/ARARI
4.2.22 Variety:	BORKENA (Pungun Yongae)
4.2.22.1 Year of release:	2007
4.2.22.2 Breeder/Maintainer:	SRARC/ARARI
4.2.23 Variety:	Argane
4.2.23.1 Year of release:	1993
4.2.23.2 Breeder/Maintainer:	WARC/EIAR
4.2.24 Variety:	Adi
4.2.24.1 Year of release:	1993
4.2.24.2 Breeder/Maintainer:	WARC/EIAR
4.2.25 Variety:	Sarkamo
4.2.25.1 Year of release:	1993
4.2.25.2Breeder/Maintainer:	WARC/EIAR
4.2.26 Variety:	Abasena
4.2.26.1 Year of release:	1990
4.2.26.2 Breeder/Maintainer:	WARC/EIAR

4.2.27 Variety:	Tate /BSC-003/
4.2.27.1 Year of release:	1989
4.2.27.2 Breeder/Maintainer:	WARC/EIAR
4.2.28 Variety:	Mehado.80
4.2.28.1 Year of release:	1989
4.2.28.2 Breeder/Maintainer:	WARC//EIAR
4.2.29 Variety:	S
4.2.29.1 Year of release:	1978
4.2.29.2 Breeder/Maintainer:	WARC/EIAR
4.2.30. Variety:	E
4.2.30.1 Year of release:	1978
4.2.30.2 Breeder/Maintainer:	WARC/EIAR
4.2.31 Variety:	T.85
4.2.31.1 Year of release:	1976
4.2.31.2 Breeder/Maintainer:	WARC/EIAR
4.2.32 Variety:	Kelafo 74
4.2.32.1 Year of release:	1976
4.2.32.2 Breeder/Maintainer:	WARC/EIAR

5. Groundnut (*Arachis hypogaea*)

Groundnut is a species in the legume or "bean" family (*Fabaceae*). The cultivated groundnut was probably first domesticated in the valleys of Peru. It is grown as an oil-seed and grain legume crop. It is a major cash crop and widely grown in all the tropical and sub tropical regions of the world for direct use as food, oil, and high protein meal.

It is an annual herbaceous legume and a warm-season crop and need abundant sunshine and a warm climate for its normal growth. It is intolerant and killed by frost. It is grown in annual rainfall of 1000 mm or more. The plant could reach 30 to 50 cm in height. The leaves are opposite, pinnate with four leaflets (two opposite pairs; no terminal leaflet), each leaflet 1 to 7 cm long and 1 to 3 cm broad. The flowers are a typical pea flower in shape, 2 to 4 cm across, yellow with reddish veining. After pollination, the fruit develops into a legume 3 to 7 cm long, containing 1 to 4 seeds, which forces its way underground to mature. Hypogaea means "under the earth."

The most suitable soils are well-drained loose, friable, sandy loam, well supplied with lime and with moderate (but not high) amounts of organic matter. Groundnut requires five months of warm weather. The pods ripen 120 to 150 days after the seeds are planted. If the crop is harvested too early, the pods will be unripe. If they are harvested late, the pods will snap off at the stalk, and will remain in the soil. Groundnut is particularly susceptible to contamination during growth and storage. Poor storage can lead to an infection by the mold fungus *Aspergillus flavus*, releasing the toxic and highly carcinogenic substance *aflatoxin*. The *aflatoxin*-producing molds exist throughout the peanut growing areas and may produce *aflatoxin* in peanuts when conditions are favorable to fungal growth.

In **2019/20** cropping season, the total land coverage of groundnut in Ethiopia is **87,925.23** ha and the production is estimated to be **1,565,331.62** quintals.

5.1. New varieties

- No new variety released in 2020

5.2 Varieties under production

5.2.1. Variety:	"ICGV-95469"	5.2.8. Variety:	Babile-2 (ICGV-98404)
5.2.1.1 Year of release:	2019	5.2.8.1 Year of release:	2016
5.2.1.2 Breeder/maintainer:	Haramaya University, Pawe and Werer ARC (EIAR)	5.2.8.2 Breeder/maintainer:	Haramya University
5.2.2. Variety:	ICG67 X BIG SEED Confectionary type	5.2.9. Variety:	Babile-3 (ICGV-94100)
5.2.2.1 Year of release:	2019	5.2.9.1 Year of release:	2016
5.2.2.2 Breeder/maintainer:	Haramaya University, Pawe and Werer ARC (EIAR)	5.2.9.2 Breeder/maintainer:	Haramaya University
5.2.3. Variety:	፩፻፭/Direb (ICGV-97164) (Confectionary type)	5.2.10. Variety:	DAMKT-2016 (ICGV-96346)
5.2.3.1 Year of release:	2019	5.2.10.1 Year of release:	2016
5.2.3.2 Breeder/maintainer:	Asosa and Pawe ARC/EIAR	5.2.10.2 Breeder/maintainer:	Werer ARC/EIAR
5.2.4. Variety:	Milkaye (PI-158850)	5.2.11. Variety:	BaHa gudo (ICGV-88357)
5.2.4.1 Year of release:	2019	5.2.11.1 Year of release:	2012
5.2.4.2 Breeder/maintainer:	Mechara ARC/ORARI	5.2.11.2 Breeder/maintainer:	Haramaya University
5.2.5. Variety:	Seenaaf (ICG-9097)	5.2.12. Variety:	BaHa jidu (NC-AC-2748 X CHICO)
5.2.5.1 Year of release:	2018	5.2.12.1 Year of release:	2012
5.2.5.2 Breeder/maintainer:	Bako ARC/ORARI	5.2.12.2 Breeder/maintainer:	Haramya University
5.2.6. Variety:	Habesha (ICG-7822)	5.2.13. Variety:	Eta (ICGV-96395)
5.2.6.1 Year of release:	2018	5.2.13.1 Year of release:	2010
5.2.6.2 Breeder/maintainer:	Sirinka and Gonder ARC/ARARI	5.2.13.2 Breeder/maintainer:	SARC/ARARI
5.2.7. Variety:	Babile-1 (ICGV-98412)	5.2.14. Variety:	Fenta (ICVG- 97267)
5.2.7.1 Year of release:	2016	5.2.14.1 Year of release:	2010
5.2.7.2 Breeder/maintainer:	Haramaya University	5.2.14.2 Breeder/maintainer:	SARC/ARARI
		5.2.15. Variety:	Fetene (ICGV-93370)
		5.2.15.1 Year of release:	2009
		5.2.15.2 Breeder/maintainer:	Werer Research Center
		5.2.16. Variety:	ICGV-94205
		5.2.16.1 Year of release:	2008
		5.2.16.2 Breeder/maintainer:	Werer Research Center

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5.2.17. Variety:	ICGV-94222
5.2.17.1. Year of release:	2008
5.2.17.2. Breeder/maintainer:	Werer Research Center
5.2.18. Variety:	ICGV-93164
5.2.18.1 Year of release:	2008
5.2.18.2 Breeder/maintainer:	Werer ARC/EIAR
5.2.19 Variety:	Werer- 961 (ICGV-87108)
5.2.19.1 Year of release:	2004
5.2.19.2 Breeder/Maintainer:	WARC/EIAR
5.2.20 Variety:	Werer- 962 (ICGV-86928)
5.2.20.1 Year of release:	2004
5.2.20.2 Breeder/Maintainer:	WARC/EIAR
5.2.21 Variety:	Werer- 963 (ICGV-86644)
5.2.21.1 Year of release:	2004
5.2.21.2 Breeder/Maintainer:	WARC/EIAR
5.2.22. Variety:	Werer- 964 (ICGV-86635)
5.2.22.1 Year of release:	2004
5.2.22.2 Breeder/Maintainer:	WARC/EIAR
5.2.23 Variety:	Bulki-01 (ICGV-88424)
5.2.23.1 Year of release:	2002
5.2.23.2 Breeder/Maintainer:	WARC/EIAR
5.2.24. Variety:	Lote-01 (ICGV-86330)
5.2.24.1 Year of release:	2002
5.2.24.2 Breeder/Maintainer:	WARC/EIAR
5.2.25 Variety:	Lotte
5.2.25.1 Year of release:	2002
5.2.25.2 Breeder/Maintainer:	EIAR
5.2.26 Variety:	Bulgi
5.2.26.1 Year of release:	2002
5.2.26.2 Breeder/Maintainer:	EIAR

Crop Variety Register

5.2.27 Variety:	Betisedi (ICG-273)
5.2.27.1 Year of release:	1993
5.2.27.2 Breeder/Maintainer:	WARC/EIAR
5.2.28 Variety:	Roba (ICG-7794)
5.2.28.1 Year of release:	1989
5.2.28.2 Breeder/Maintainer:	WARC/EIAR
5.2.29 Variety:	NC 343
5.2.29.1 Year of release:	1986
5.2.29.2 Breeder/Maintainer:	WARC/EIAR
5.2.30 Variety:	NC 4X
5.2.30.1 Year of release:	1986
5.2.30.2 Breeder/Maintainer:	WARC/EIAR
5.2.31 Variety:	Shulamit
5.2.31.1 Year of release:	1976
5.2.31.2 Breeder/Maintainer:	WARC/EIAR

6. Sunflower (*Helianthus annuus*)

Sunflower is native to the Central America. The evidence thus far is that it was first domesticated in Mesoamerica, present day Mexico, about 2600 BC. Sunflower belongs to the family *Compositae*. It is an annual, erect and an herbaceous plant growing to a height of 1.5 to 6.0 meters. The crop requires a cool climate during germination and seedling growth. Seedlings tolerate frosts moderately well until they reach the four to six leaf stage of development. Sunflower can be grown on a wide range of soils and tolerates a moderate pH range and some salinity.

Sunflower oil, extracted from the seeds, is used for cooking, as carrier oil and to produce margarine and bio-diesel, as it is cheaper than olive oil. A range of sunflower varieties exist with differing fatty acid compositions; some 'high oleic' types contain a higher level of healthy monounsaturated fats in their oil than even olive oil. Sunflower oil is also a rich source (64%) of linoleic acid, which helps in washing out cholesterol deposition in the coronary arteries of the heart and good for heart patients. One of the most common and severe diseases of sunflower is rust caused by *Puccinia helianthi*.

Some recently developed cultivars have drooping heads. These cultivars are less attractive to gardeners growing the flowers as ornamental plants, but appeal to farmers, because they reduce bird damage and losses from some plant diseases.

According to Central Statistics Agency **2019/20** report, the total area under production was **7,560.56** hectares and the production was estimated to be over **95,707.49** quintals.

6.1 New varieties

6.1.1. Variety name: Uke - PAN7057

6.1.1.1. Agronomic and morphological characters

▪ Adaption area:	Hollela,Bir, Ayehu, Ambo, D/Zeit, Finoteselam, Kulumsa, Adadi, Arsi Negele and Similar agro- ecology of north western and western Ethiopia
○ Altitude (masl):	800-2300
○ Rainfall:	>1000
▪ Seed rate(kg/ha):	8-12
▪ Planting date:	Mid-June to Mid-July
▪ Fertilizer rate (kg /ha):	
○ NPS:	100
○ Urea:	50
▪ Days to flowering:	95
▪ Days to maturity:	157
▪ 1000seed weight:	47.8
▪ Plant height (cm):	183
▪ Seed color:	Black with no strip
▪ Seed size:	Medium
▪ Flower color:	Yellow
▪ Oil content(%)	40
▪ Crop pest reaction:	Moderate
▪ Yield (q/ha):	
○ Research field:	27
○ Farmers field:	21
6.1.1.2 Year of registration:	2020
6.1.1.3 Breeder/ Maintainer:	Corteva/Pioneer Hi -Bred Seeds Ethiopia

6.2 Varieties under production

6.2.1 Variety: Gimja (P63A98)

6.2.1.1 Year of release: 2015

6.2.1.2 Breeder/ Maintainer: DuPont Pioneer

6.2.2 Variety: Pawi 2 (P63LL06)

6.2.2.1 Year of release: 2015

6.2.2.2 Breeder/ Maintainer: DuPont Pioneer

6.2.3 Variety: Ayehu (አየሁ)

(PGRC/E ACC#208768)

2014

AARC/ARAR

6.2.4. Variety: X6859

2014

Minerva Plc /HARC/EIAR/

6.2.5. Variety: Camara II

2014

Minerva Plc /HARC/EIAR/

6.2.6. Variety: NLN 11037

2014

Minerva Plc /HARC/EIAR/

6.2.7. Variety: Vincenzo

2014

Minerva Plc /HARC/EIAR/

6.2.8 Variety: Hysun 33

2013

GCT PLC

6.2.9 Variety: NK Delfi (Hybrid)

2012

Red Speckled Ethiopia
Global Trading Enterprise

Neoma (Hybrid)

2012

Red Speckled Ethiopia
Global Trading Enterprise

VSFH- 2074 (Hybrid)

2012

Vibha Seeds Ethiopia
Private Limited Company

VSFH- 1006 (Hybrid)

2012

Vibha Seeds Ethiopia
Private Limited Company

KAZANOVA (Hybrid)

2011

Institute of Field and
Vegetable Crops, Republic
of Serbia/Ashraf
Agricultural and industrial
PLC

NS-H-45 (Hybrid)

2011

Institute of Field and
Vegetable Crops, Republic
of Serbia/Ashraf
Agricultural and industrial
PLC

6.2.15 Variety:	NS-H-111 (Hybrid)
6.2.15.1 Year of release:	2011
6.2.15.2 Breeder/Maintainer:	Institute of Field and Vegetable Crops, Republic of Serbia/Ashraf Agricultural and industrial PLC
6.2.16 Variety:	Oissa (NSH-25)
6.2.16.1 Year of release:	2005
6.2.16.2 Breeder/Maintainer:	AwARC/ SRARI

7. Safflower (*Carthamus tinctorius* L.)

It is an annual composite plant from the asteraceae family. This herb is highly branched with many long sharp spines on the leaves. Plants are generally 30 to 150 cm tall with globular flower heads (capitula) and commonly, brilliant yellow, orange or red flowers. It is widely grown for its red or orange flower heads and seeds that yield valuable oil.

It is an annual species in the same plant family as sunflower. This crop is adapted to dry land or irrigated cropping systems. It is commercially cultivated for vegetable oil extracted from the seeds.

Traditionally, the crop was grown for its seeds, and used for colouring and flavouring foods, in medicines, and making red (carthamin) and yellow dyes, especially before cheaper aniline dyes became available.

Safflower seed oil is flavorless and colorless, and nutritionally similar to sunflower oil. It is used mainly in cosmetics and as cooking oil, in salad dressing, and for the production of margarine. It may also be taken as a nutritional supplement. There are two types of safflower that produce different kinds of oil: one high in monounsaturated fatty acid (oleic acid) and the other high in polyunsaturated fatty acid (linoleic acid). Currently the predominant edible oil market is for the former, which is lower in saturates than olive oil, for example. The latter is used in painting in the place of linseed oil, particularly with white, as it does not have the yellow tint which linseed oil possesses.

7.1 New varieties

- No new variety released in 2020

7.2 Varieties under Production

7.2.1 Variety:	Kuhar Acc 229086
7.2.1.1 Year of release:	2015
7.2.1.2 Breeder/ Maintainer:	Adet ARC
7.2.2 Variety:	Turkana
7.2.2.1 Year of release:	2011
7.2.2.2 Breeder/Maintainer:	Holetta/EIAR

Crop Variety Register

8. Vernonia (*Vernonia galamensis*)

Vernonia galamensis is a new potential industrial crop with very high content of vernolic acid in the seed oil. The products that can be made from vernonia include epoxies for manufacturing adhesives, varnishes and paints, and industrial coatings. The low viscosity of Vernonial oil would allow it to be used as a non-volatile solvent in oil based-paints since it will become incorporated in the dry paint rather than evaporating in to the air, which reduces pollution. Vernonia could also serve as a natural source of plasticizers and stabilizers (binders) for producing polyvinyl chloride (PVC), which currently manufactured from petroleum. It is also used in manufacturing cosmetics, pharmaceuticals, insecticides, crop-oil concentrates, and formulation of carriers for slow release of pesticides.

The development of alternative non-competitive to existing crops is receiving increased recognition as an answer to some of the problems facing today's agriculture in the world. Poor Ethiopian farmers in arid and semi-arid regions of the country will benefit from this crop if varieties and improved cultural practices are developed soon.

8. 1. New varieties

- No new variety released in 2020

8.2 Varieties under production

8.2.1 Variety:	Boke Kuni (AD-01-04 (Acc#7)
8.2.1.1 Year of release:	2005
8.2.1.2 Breeder/Maintainer:	ADARC /ARARI

9. Castor (*Ricinus communis L.*)

Castor is a flowering plant in the spurge family, *Euphorbiaceae*. It is indigenous to the southeastern Mediterranean Basin, Eastern Africa, and India, but is widespread throughout tropical regions. Castor seed is the source of castor oil, which has a wide variety of uses. The seeds contain between 40% and 60% oil that is rich in triglycerides, mainly *ricinolein*. The seed contains *ricin*, a toxin, which is also present in lower concentrations throughout the plant.

Castor oil plant can vary greatly in its growth habit and appearance. The variability has been increased by breeders who have selected a range of cultivars for leaf and flower colors, and for oil production. It is a fast-growing, suckering perennial shrub which can reach the size of a small tree (around 12 meters).

Global castor seed production is around 1 million tons per year. Leading producing countries are India (with over 60% of the global yield), China and Brazil, and it is widely grown as a crop in Ethiopia (about 15 000 tones). Under Ethiopian condition, castor is tolerant to moisture stress and can be grown in areas where Bread wheat, maize, and tef would not be grown such as lower and middle Awash, Kobo, Afar and Metema. Perennial castor can be grown as hedges and sheds for animals, peoples or coffee. Castor is higher yielder than noug, linseed, Ethiopian mustard and its oil content is only exceeded by Coconut. The research opportunity particularly on developing high yielding genotypes is great because of the availability of germplasm. There are more than 400 accessions of castor at the Institute of Biodiversity Conservation in Addis Ababa. Castor bean has a sound economic importance since castor oil is now being used to produce biodiesel.

9. 1. New varieties

- No new variety released in 2020

9. 2 Varieties under production

9.2.1. Variety:	Hiruy (GK-SEL-1)
9.2.1.1 Year of Release:	2011
9.2.1.2 Breeder/Maintainer:	MARC/EIAR
9.2.2. Variety:	Abaro (›va)
9.2.2.1 Year of Release:	2007
9.2.2.2 Breeder/Maintainer:	EORC/EIAR

10. Camelina sativa (*Camelina sativa*)

Camelina (*Camelina Sativa*) is an oleaginous plant from the *Cruciferae* family, which has been domesticated and extensively used in Europe and America for several thousand years. The crop has multitude of uses among which its edible oil being the major one. The seed oil of Camelina contains an exceptional amount (up to 45 per cent) of omega-3 fatty acids, as well as a unique antioxidant complex making the oil very stable and resistant to heat and rancidity. Unlike any other omega-3 oil, Camelina oil is perfectly suitable for use not only as a well balanced omega-3 supplement, but also as a health promoting everyday cooking oil.

Combined with a delicious flavor, this extraordinary blend of beneficial polyunsaturated fatty acids and high oxidative stability makes camelina oil an excellent, versatile overall source of both heart healthy omega-3 fats and powerful antioxidants, including tocopherols, carotenoids, and phosphatides. Known as "wild flax" because it is often found growing together with common flax and also sometimes referred to as "false flax" due to its visual similarity to regular flax, Camelina, while supplying almost as many omega-3 fatty acids as common flax, is much more stable than the latter, and also tastes much better.

In recent years, extensive research and numerous clinical studies in different parts of the world confirmed that omega-3 fats are involved in numerous vital physiological processes in our bodies, and that their deficit may cause or aggravate many serious medical problems and conditions, including atherosclerosis, hypertension, and other cardiovascular problems, arthritis, irritable bowel syndrome, dermatitis, asthma, and even cancer. Therefore, adding a good source of omega-3 fatty acids to one's diet is believed to be a good way of improving or preventing these conditions. Apart from this the feed of the byproducts is well nourished source for animals and highly recommended.

10.1. New varieties

- No new variety released in 2020

10. 2 Varieties under production

10.2.1. Variety:

Zeytee-1
(*Camelina America*)
2014
EIAR/DZARC/HARC
/ORDA/Canana

10.2.2. Variety:

Zeytee-2 (*Camelina Syria*)
2014
EIAR/DZARC/HARC
/ORDA/Canana

Group IV. Tubers, Roots and Vegetables

1. Irish potato (*Solanum tuberosum*)

The potato is one of mankind's most valuable food crops. In volume of production it ranks fourth in the world after maize, rice, and wheat. Among root crops, potato ranks first in volume produced and consumed, followed by cassava, sweet potato, and yam. The relatively high carbohydrate and low fat content of the potato makes it an excellent energy source for human consumption. The tuber is known to supply carbohydrate, high quality protein, and a substantial amount of essential vitamins, minerals, and trace elements. Potato is said to be one of the most efficient crops in converting natural resources, labor, and capital into a high quality food with wide consumer acceptance.

The cultivated potato belongs to the family *Solanaceae*; it is originated in the high lands of South America and was first cultivated in the vicinity of lake Titicaca near the border of Peru and Bolivia. It was introduced to Ethiopia in 1858 and since then it has become an important crop in many parts of the country. Ethiopia has suitable edaphic and climatic conditions for the production of high quality ware and seed potatoes. About 70% of the available agricultural land is located at an altitude of 1800-2500 m.a.s.l and receives an annual rain fall of more than 600 mm, which is suitable for potato production. However, in **2019/20** Meher cropping season, the total area under production reaches **70,362.22** hectares and the production is estimated to be **9,245,283.61** quintals.

A number of production problems that account for the small area cropped with potato and the low national yield have been identified. The major ones are the concentration of potato cultivation in the highlands, unavailability and high cost of seed tubers, non optimal agronomic practices, the prevalence of diseases and insect pests, and inadequate storage, transportation, and marketing facilities.

1.1 New Variety:

1.1.1 Variety name: Feyissa (CIP-395017.242)

1.1.1.1 Agronomic and Morphological Characteristics

▪ Adaptation Area:	Central highlands and similar areas
○ Altitude (m.a.s.l):	1500-2800
○ Rainfall(mm):	500-1000
○ Soil type:	Sandy loam
▪ Seeding rate(tubers/ha):	20qt/ha (44444 tubers/ha)
▪ Planting date:	First week of June
▪ Spacing(Cm):	75 x 30 between rows and plants respectively
▪ Fertilizer rate (kg/ha):	
○ P ₂ O ₅ :	90
○ N:	110
▪ Days to flowering:	60-70
▪ Days to maturity:	110-120
▪ Plant height(cm):	69.1
▪ Growth habit:	Erect
▪ Tuber shape:	Oblong
▪ Eye depth:	Shallow
▪ Flower color:	Purplish white
▪ Tuber color:	Creamy white
▪ Fresh color:	Cream
▪ Number of stems/ plant:	4.3
▪ Number of tubers /hill:	11.85
▪ Dry matter (DM) content (%)	22.08
▪ Iron content (mg/Kg) DW	17.29
▪ Zinc content (mg/Kg) DW	13.32
▪ Crop pest reaction*:	
▪ Yield(qt/ha)	
○ Research field:	384.2
○ Farmer field:	-
1.1.1.2 Year of release:	2020
1.1.1.3 Breeder/Maintainer:	Holeta ARC/ EIAR

*Moderately tolerant to LB with two sprays

1.1.2 Variety name: **Burka (CIP- 391058.175)**

1.1.2.1 Agronomic and Morphological Characteristics

▪ Adaptation Area:	Central highlands and similar areas
○ Altitude (m.a.s.l):	1500-2800
○ annual Rainfall(mm):	500-1000
○ Soil type:	Sandy loam
▪ Seeding rate(tubers/ha):	20qt/ha (44444 tubers/ha)
▪ Planting date:	First week of June
▪ Spacing (cm):	75 x30 between rows and plants
▪ Fertilizer rate (kg/ha):	
○ P ₂ O ₅ :	90
○ N:	110
▪ Days to flowering:	60-70
▪ Days to maturity:	110-120
▪ Plant height(cm):	64.15
▪ Growth habit;	Erect
▪ Tuber shape:	Short-Oval
▪ Eye depth;	Shallow-medium
▪ Flower color:	White
▪ Tuber color:	White cream-Light yellow
▪ Fresh color:	Yellow
▪ Number of stems/ plant:	4.0
▪ Number of tubers /hill:	12.00
▪ Dry matter (DM) content (%)	24.30
▪ Specific gravity (SG) (g/cm ⁻³)	1.084
▪ Frying suitability test (IBVL) (5-10)	7.00
▪ Crop pest reaction:	Tolerant to Late blight
▪ Yield(qt/ha)	
○ Research field:	307.7
○ Farmer field:	-

1.1.2.2 Year of release:

1.1.2.3 Breeder/Maintainer:

2020

Holeta ARC/ EIAR

1.1.3 Variety name: **Wabi (CIP-84866-5)**

1.1.3.1 Agronomic and Morphological Characteristics

• Adaptation Area:	Sinana, Goba, Dinsho and similar agro ecology
○ Altitude (m.a.s.l):	2350-3650
○ Annual Rainfall(mm):	600-1000
○ Soil type:	Clay loam
▪ Seeding rate(tubers/ha):	15qt/ha (44444 tubers/ha)
▪ Planting date:	Early April for „Gena“ and August for „Bona“ cropping season in high lands of Bale
▪ Spacing (cm):	75 x30 between rows and plants
▪ Fertilizer rate (kg/ha):	
○ NPS:	195
○ Urea:	165
▪ Days to flowering:	64
▪ Days to maturity:	112
▪ Plant height(cm):	53.96
▪ Growth habit;	Erect
▪ Tuber shape:	Oval
▪ Eye depth;	Very Shallow
▪ Flower color:	White
▪ Tuber color:	White
▪ Number of stems/ plant:	4.56
▪ Number of tubers /hill:	14.69
▪ Crop pest reaction*:	
▪ Yield(qt/ha)	
○ Research field:	440-475.2
○ Farmer field:	310- 358.5

1.1.3.2 Year of release:

1.1.3.3 Breeder/Maintainer:

* *Tolerant to late blight diseases*

1.2 Varieties under production

1.2.1. Variety:	Horro (CIP384321.30)
1.2.1.1. Year of release:	2015
1.2.1.2. Breeder/Maintainer:	Bako ARC/OARI.
1.2.2. Variety:	Laura
1.2.2.1. Year of release:	2015
1.2.2.2. Breeder/Maintainer:	Euoplant Pflanzenzucht GmbH Kartoffelzucht Bohm & Co KG Gibagri farm plc.
1.2.3. Variety:	Jelly
1.2.3.1. Year of release:	2015
1.2.3.2. Breeder/Maintainer:	Bohm-Nordkartoffel Agrarproduction GmbH & Co. OHG / Europlan Pflanzenzucht GmbH, Gibagri farm PLC.
1.2.4. Variety:	Rumba
1.2.4.1. Year of release:	2015
1.2.4.2. Breeder/Maintainer:	Kartoffelzucht Bohm GmbH & Co.KG Euoplant Pflanzenzucht GmbH Gibagri farm PLC.
1.2.5 Variety:	Dagim (CIP-396004.337)
1.2.5.1 Year of release:	2013
1.2.5.2 Breeder/Maintainer:	Adet ARC/ ARARI
1.2.6 Variety:	Milki (CIP-394640.539)
1.2.6.1 Year of register:	2012
1.2.6.2 Breeder/Maintainer:	SARC/OARI
1.2.7 Variety:	Moti (KP-90147-41)
1.2.7.1 Year of register:	2012
1.2.7.2 Breeder/Maintainer:	SARC/OARI

1.2.8 Variety:	Bubu (CIP-384321-3)
1.2.8.1 Year of register:	2011
1.2.8.2 Breeder/Maintainer:	Haramaya University
1.2.9 Variety:	RED SCARLETT
1.2.9.1 Year of register:	2010
1.2.9.2 Breeder/Maintainer:	HZPC Holland BV- Sol agro plc
1.2.10. Variety:	Belete (CIP-393371.58)
1.2.10.1 Year of release:	2009
1.2.10.2 Breeder/Maintainer:	HARC/ EIAR
1.2.11 Variety:	CAESAR
1.2.11.1 Year of register:	2009
1.2.11.2 Breeder/Maintainer:	HZPC Holland BV- Solagrow PLC
1.2.12 Variety:	MONDIAL
1.2.12.1 Year of register:	2009
1.2.12.2 Breeder/Maintainer:	HZPC Holland BV- Solagrow PLC
1.2.13 Variety:	Dancha (CIP-392618.511)
1.2.13.1 Year of release:	2009
1.2.13.2 Breeder/Maintainer:	SARI/AWARC
1.2.14 Variety:	KULUMSA (KP-90143.5)
1.2.14.1 Year of release:	2007
1.2.14.2 Breeder/Maintainer:	KARC/EIAR
1.2.15 Variety:	Hundee (CIP-90147.8)
1.2.15.1 Year of release:	2006
1.2.15.2 Breeder/Maintainer:	SARC/OARI
1.2.16 Variety:	Araarsaa (CIP-90138.12)
1.2.16.1 Year of release:	2006
1.2.16.2 Breeder/Maintainer:	SARC/OARI

Crop Variety Register

1.2.17 Variety:	Gudanie (CIP-386423.13)
1.2.17.1 Year of release:	2006
1.2.17.2 Breeder/Maintainer:	HARC/EIAR
1.2.18. Variety:	Gabbisa (Cip 3870-96-11)
1.2.18.1 Year of release:	2005
1.2.18.2 Breeder/Maintainer:	HU
1.2.19 Variety:	Shonkolla (KP- 90134.5)
1.2.19.1 Year of release:	2005
1.2.19.2 Breeder/Maintainer:	AwARC/ SARI
1.2.20 Variety:	Bulle (Cip 387224-25)
1.2.20.1 Year of release:	2005
1.2.20.2 Breeder/Maintainer:	AwARC/ SARI
1.2.21 Variety:	Chala (Cip 387412-2)
1.2.21.1 Year of release:	2005
1.2.21.2 Breeder/Maintainer:	Haramaya University
1.2.22 Variety:	Mara Charre (Cip 389701-3)
1.2.22.1 Year of release:	2005
1.2.22.2 Breeder/Maintainer:	AwARC/ SARI
1.2.23 Variety:	Gera (KP-90134.2)
1.2.23.1 Year of release:	2003
1.2.23.2 Breeder/Maintainer:	ShARC/ ARARI
1.2.24 Variety:	Gorebela (CIP-382173.12)
1.2.24.1 Year of release:	2002
1.2.24.2 Breeder/Maintainer:	ShARC/ ARARI
1.2.25 Variety:	Guasa (CIP-384321.9)
1.2.25.1 Year of release:	2002
1.2.25.2 Breeder/Maintainer:	ADARC/ ARARI
1.2.26 Variety:	Jalenie (CIP-37792-5)
1.2.26.1 Year of release:	2002
1.2.26.2 Breeder/Maintainer:	HARC/EIAR

Crop Variety Register

1.2.27 Variety:	Degemegn (CIP-384321-19)
1.2.27.1 Year of release:	2002
1.2.27.2 Breeder/Maintainer:	HARC/EIAR
1.2.28 Variety:	Zemen (AL-105)
1.2.28.1 Year of release:	2001
1.2.28.2 Breeder/Maintainer:	HU
1.2.29 Variety:	Bedasa (AL-114)
1.2.29.1 Year of release:	2001
1.2.29.2 Breeder/Maintainer:	HU
1.2.30 Variety:	Zengena (CIP-380479.6)
1.2.30.1 Year of release:	2001
1.2.30.2 Breeder/Maintainer:	AwARC/SARI
1.2.31 Variety:	Chirro (AL-111)
1.2.31.1 Year of release:	1997/98
1.2.31.2 Breeder/Maintainer:	HU
1.2.32 Variety:	Wechecha
1.2.32.1 Year of release:	1997
1.2.32.2 Breeder/Maintainer:	HARC/EIAR
1.2.33 Variety:	Tolcha
1.2.33.1 Year of release:	1993
1.2.33.2 Breeder/Maintainer:	HARC/EIAR
1.2.34 Variety:	Menagesha
1.2.34.1 Year of release:	1993
1.2.34.2 Breeder/Maintainer:	HARC/EIAR
1.2.35 Variety:	Awash
1.2.35.1 Year of release:	1991
1.2.35.2 Breeder/Maintainer:	HARC/EIAR
1.2.36 Variety:	Alemaya 624
1.2.36.1 Year of release:	1987
1.2.36.2 Breeder/Maintainer:	HU

2. Sweet potato (*Ipomoea batatas*)

Sweet potato is a dicotyledonous plant that belongs to the family *Convolvulaceae*. Its large, starchy, sweet tasting tuberous roots are an important root vegetable. The young leaves and shoots are sometimes eaten as greens. It is one of the major root crops of Ethiopia, which is cultivated around home for several years and is used for food and feed.

Sweet potato is mostly cultivated in the south, southwest and east of the country. Since this crop prefers hot and non-shade area it doesn't withstand frost. Even though this crop is drought tolerant, it needs sufficient moisture at early stage especially during the first six weeks. This crop needs sandy and well-drained soil; and if the soil has high moisture content, planting in raised bed is preferable. It grows best at an average temperature of 24 °C (75 °F), abundant sunshine and warm nights. Annual rainfalls of 750–1,000 mm (30–39 in) are considered most suitable, with a minimum of 500 mm (20 in) in the growing season. It is not tolerant to water-logging, as it may cause tuber rots and reduce growth of storage roots if aeration is poor.

This crop has high starch and low amount of vitamins and proteins. Even though eating its leaf part at green stages is not accustomed in our country, it has high starch and protein contents. In **2019/20** Meher cropping season, the total area under production reached **52,406.40** hectares and the production is estimated to be over **17,558,547.48** quintals.

2.1. New varieties

- No new variety released in 2020

2.2 Varieties under production

2.2.1 Variety name:	Kabode (NASPOT 10 O))
2.2.1.1 Year of release:	2019
2.2.1.2 Breeder/maintainer:	Hawassa ARC/SARI
2.2.2 Variety:	Alamura (Ukr/Eju-10))
2.2.2.1 Year of release:	2019
2.2.2.2 Breeder/Maintainer:	Hawassa ARC/SARI
2.2.3 Variety:	Dilla (Ukr/Eju-13))
2.2.3.1 Year of release:	2019
2.2.3.2 Breeder/Maintainer:	Hawassa ARC/SARI
2.1.4 Variety name:	Hawassa-09 (TIS-8250-1)
2.1.4.1 Year of release:	2017
2.1.4.2 Breeder/maintainer:	Hawassa ARC/SARI
2.2.5 Variety:	Tola (TIS 844-40)
2.2.5.1 Year of release:	2012
2.2.5.2 Breeder/Maintainer:	BARC
2.2.6 Variety:	Ma'ē (TIS 70357-5)
2.2.6.1 Year of release:	2010
2.2.6.2 Breeder/Maintainer:	WARC/EIAR
2.2.7 Variety:	Jari (CN-2059-1)
2.2.7.1 Year of release:	2008
2.2.7.2 Breeder/Maintainer:	Sirinka ARC/ARARI
2.2.8 Variety:	Birtukanie (Saluboro)
2.2.8.1 Year of release:	2008
2.2.8.2 Breeder/Maintainer:	Sirinka ARC/ARARI

Crop Variety Register

2.2.9 Variety:	BERKUME (TIS 8250-2)
2.2.9.1 Year of release:	2007
2.2.9.2 Breeder/Maintainer:	Haromaya University
2.2.10. Variety:	ADU (Cuba-2)
2.2.10.1 Year of release:	2007
2.2.10.2 Breeder/Maintainer:	Haromaya University
2.2.11. Variety:	Balo (Koka-18)
2.2.11.1 Year of release:	2006
2.2.11.2 Breeder/Maintainer:	BARC/OARI
2.2.12. Variety:	Ordollo (192009 IX)
2.2.12.1 Year of release:	2005
2.2.12.2 Breeder/Maintainer:	AwARC/ SARI
2.2.13 Variety:	Kero (TIS 8250)
2.2.13.1 Year of release:	2005
2.2.13.2 Breeder/Maintainer:	AwARC/ SARI
2.2.14 Variety:	Tulla (CIP 420027)
2.2.14.1 Year of release:	2005
2.2.14.2 Breeder/Maintainer:	AwARC/ SARI
2.2.15. Variety:	Kulfo (Lo-323)
2.2.15.1 Year of release:	2005
2.2.15.2 Breeder/Maintainer:	AwRC/SARI
2.2.16 Variety:	Dimitu
2.2.16.1 Year of release:	2005
2.2.16.2 Breeder/Maintainer:	BARC /OARI
2.2.17 Variety:	Temesgen (192009 VIII)
2.2.17.1 Year of release:	2004
2.2.17.2 Breeder/Maintainer:	AwARC/SARI
2.2.18 Variety:	Beletech (192026 II)
2.2.18.1 Year of release:	2004
2.2.18.2 Breeder/Maintainer:	AwARC/ SARI

Crop Variety Register

2.2.19 Variety:	Belela (192040 I)
2.2.19.1 Year of release:	2002
2.2.19.2 Breeder/Maintainer:	AwARC /EIAR & ADARC/ ARARI
2.2.20 Variety:	Awassa-83
2.2.20.1 Year of release:	1997/98
2.2.20.2 Breeder/Maintainer:	AwARC/SARI
2.2.21 Variety:	Dubo (I-444)
2.2.21.1 Year of release:	1997
2.2.21.2 Breeder/Maintainer:	AwARC/SARI
2.2.22 Variety:	Falah (TIS-3017(2)
2.2.22.1 Year of release:	1997
2.2.22.2 Breeder/Maintainer:	AwARC/SARI
2.2.23 Variety:	Kudadie (TIS 1499)
2.2.23.1 Year of release:	1997
2.2.23.2 Breeder/Maintainer:	AwARC/SARI
2.2.24 Variety:	Damota (Guralowlow)
2.2.24.1 Year of release:	1997
2.2.24.2 Breeder/Maintainer:	AARC
2.2.25 Variety:	Ogan Sagan
2.2.25.1 Year of release:	-
2.2.25.2 Breeder/Maintainer:	MOA
2.2.26 Variety:	Bereda (Var 375)
2.2.26.1 Year of release:	1997
2.2.26.2 Breeder/Maintainer:	AwARC/SARI
2.2.27 Variety:	Guntutie (AJAC-1)
2.2.27.1 Year of release:	1997
2.2.27.2 Breeder/Maintainer:	AwARC/SARI

2.2.28 Variety:	Koka 12
2.2.28.1 Year of release:	----
2.2.28.2 Breeder/Maintainer:	AwARC/SARI
2.2.29 Variety:	Koka 6
2.2.29.1 Year of release:	----
2.2.29.2 Breeder/Maintainer:	AwARC/SARI

3. Taro (*Colocasia esculenta*)

It is a root crop of secondary importance grown in many parts of the wet tropics, and does best on a moist or even slightly swampy soil. It is known as taro in the Pacific Islands, eddo or dasheen in the West Indies, as old cocoyam in West Africa and „Godere“ in Ethiopia.

The part eaten is the corm which is formed underground by a thickening of the base of the stem. The crop is propagated by cutting from the top part of the corm or by planting cormels. The plants grow 2-3 feet high, rarely flower, and produce very large leaves of the same shape.

In **2019/20** Meher cropping season, the total area under production is about **58,272.58** hectares and the production is estimated to be over **14,527,644.92** quintals in this cropping year.

3. 1. New varieties

- No new variety released in 2020

3.2 Varieties under production

3.2.1 Variety:	Kiyaq 33/79
3.2.1.1 Year of release:	2005
3.2.1.2 Breeder/Maintainer:	JARC/EIAR
3.2.2 Variety:	Denu 33/79
3.2.2.1 Year of release:	2000
3.2.2.2. Breeder/Maintainer:	JARC/EIAR
3.2.3. Variety:	Boloso-1 (ARC/064/96)
3.2.3.1 Year of release:	2004
3.2.3.2 Breeder/Maintainer:	ARARC/ SARI

4. Cassava (*Manihot esculenta*)

Cassava is widely cultivated in many parts of the world. The carbohydrate rich but low in protein storage roots represent an important energy source and are a staple food stuff for more than 500 million people throughout tropical Africa, Latin America and parts of Asia. Cassava can grow under poor soil conditions and can withstand drought. It is therefore usually considered as an important famine reserve crop in countries with unreliable rainfall.

Cassava is a perennial shrub, with latex in all its parts, which produces enlarged tuberous root. There are over 100 cultivars and there is great variation in the form of the plant. Great variation is shown in the number, shape and size of the tubers and the angle at which they penetrate the ground. There are usually 5-10 tubers per plant, cylindrical or tapering. The optimum temperature range for cassava is 25-30°C, and the approximate boundaries for its culture are latitudes 30°N and 30°S.

Light sandy loam soil of medium fertility give the best results, but cultivars can be grown successfully on soils ranging from stiff marine clays with a pH of 8-9, to sands or loose laterites with a pH of 5-5.5. Cassava can be grown from sea level up to about 1000m in equatorial regions though at the highest altitudes growth is slow and yields are reduced. Cassava is ready for harvest from 12-15 months after planting. Unless, cassava tuber be utilized or processed within a day or two after harvest, it will deteriorate. So to avoid the deterioration, farmers are advised to harvest as a piece-meal depending upon utilization. Cassava is propagated by stem cutting 20-30cm long, usually planted 90 cm between cuttings within rows and 90-100 cm apart between rows.

Cassava root is eaten as a vegetable, and as it toxic raw it is eaten after cooking. It is also used as a source of starch or to make flour. The root may also be used in the production of ethanol. Cassava hay is used as an animal feed or in the production of adhesives, textiles and cosmetics.

4.1 New varieties

- No new variety released in 2020

4.2 Varieties under production

4.2.1 Variety:

4.2.1.1 Year of release:

4.2.1.2 Breeder/Maintainer:

Chichu (TMS 191/0427)

2019

Jimma ARC/EIAR/

4.2.2 Variety:

4.2.2.1 Year of release:

4.2.2.2 Breeder/Maintainer:

Chichu (TMS 191/0427)

2016

AwARC/ SARI

4.2.3 Variety:

4.2.3.1 Year of release:

4.2.3.2 Breeder/Maintainer:

Hawassa 4 (MM 96/7151)

2016

AwARC/ SARI

4.2.4 Variety:

4.2.4.1 Year of release:

4.2.4.2 Breeder/Maintainer:

Quelle (104/72 Nigeria red)

2005

AwARC/ SARI

4.2.5 Variety:

4.2.5.1 Year of release:

4.2.5.2 Breeder/Maintainer:

Kello (44/72 red)

2005

AwARC/ SARI

5. Enset (*Ensete ventricosum* (Welw.) Cheesman)

Enset is commonly known as "false banana" for its close resemblance to the domesticated banana plant. It is Ethiopia's most important root crop, a traditional staple crop in the densely populated south and southwestern parts of Ethiopia. Enset provides more amount of food stuff per unit area than most cereals. It is estimated that 40 to 60 enset plants occupying 250-375 square meters can provide enough food for a family of 5 to 6 people.

Enset is a perennial, herbaceous and monocarpic crop belonging to the family *Musaceae*. The root is the main edible portion as its fruit is not edible. Each plant takes four to five years to mature, at which time a single root will give 40 kg of food. Due to the long period of time from planting to harvest, plantings need to be staggered over time, to ensure that there is enset available for harvest in every season. Enset tolerates drought better than most cereal crops. The crop represents 65% of the total crop production in the southern regions of Ethiopia. The highly carbohydrate rich corm and pseudo stem of enset serves as staple and co-staple food for about 20% of the Ethiopian population living in the southern and south-western parts of the country.

Structure and strength and used for various used including making bags, ropes, twines, cordage, and mat. Enset leaves and dried leaf sheaths are also used for wrapping materials and to feed cattle especially in dry seasons when feed is scares. Some of the enset clones are used as local medication for different illness for both human being and animals.

5.1. New varieties

- No new variety are released in 2020

5.2 Varieties under production

5.2.1. Variety:	Zerietta (Ashura)
5.2.1.1 Year of release:	2010
5.2.1.2 Breeder/Maintainer:	Areka ARC/SARI
5.2.2. Variety:	Mesena (ESKURIS)
5.2.2.1 Year of release:	2010
5.2.2.2 Breeder/Maintainer:	Areka ARC/SARI
5.2.3. Variety:	Kelisa (WELLANCHIE)
5.2.3.1 Year of release:	2010
5.2.3.2 Breeder/Maintainer:	Areka ARC/SARI
5.2.4. Variety:	Endale (Manduluka)
5.2.4.1 Year of release:	2009
5.2.4.2 Breeder/Maintainer:	Areka ARC/SARI
5.2.5. Variety:	Yanbule (Digomerza)
5.2.5.1 Year of release:	2009
5.2.5.2 Breeder/Maintainer:	Areka ARC/SARI
5.2.6. Variety:	Gewada (Henuwa)
5.2.6.1 Year of release:	2009
5.2.6.2 Breeder/Maintainer:	Areka ARC/SARI

6. Yam (*Dioscorea spp*)

Yam, any of several plant species of the genus *Dioscorea* (family *Dioscoreaceae*) is native to warmer regions of both hemispheres. This thick, tropical-vine tuber is popular in Africa, the West Indies, and parts of Asia, South and Central America. By virtue of its excellent palatability, it is a high value crop. Yams are cultivated throughout the tropics, and in parts of the sub-tropics and temperate zones. In West Africa and New Guinea, the yam is a primary agricultural commodity.

People consume yams, sweet in flavor, as a cooked vegetable. In West Africa it is often pounded into a thick paste after boiling and is eaten with soup. Yams are also processed into flour that is used in the preparation of the paste. Virtually all production is used for human food. Yam is a preferred food and a food security crop in some sub-Saharan African countries. Unlike cassava, sweet potato, and aroids, one can store yam tubers for periods of up to 4 or even 6 months at ambient temperatures. This characteristic contributes to the sustaining of food supply, especially in the difficult (food scarce) period at the start of the wet season.

Yams constitute a multi-species crop. Though they can be similar in size and shape to sweet potatoes, yams are not as rich in vitamins A and C as sweet potatoes. However yams tend to be higher in protein and minerals like phosphorus and potassium. Most yams contain an acrid principle that is dissipated in cooking. *D. rotundata* and *D. alata* are the edible species most widely diffused in tropical and subtropical countries. *D. esculenta*, grown on the subcontinent of India, in southern Vietnam, and in the South Pacific islands, is one of the most nutritious yams.

In **2019/20** Meher cropping season, the total land coverage of yam „Boye“ in Ethiopia is **5,323.16** ha and the production is estimated to be **492,273.07** quintals.

6.1 New variety

- No new variety released in 2020

6.2 Varieties under production

6.2.1. Variety:	Wonago red (AW/ 008/00)
6.2.1.1 Year of release:	2019
6.2.1.2 Breeder/Maintainer:	Hawassa ARC/ SRARI
6.2.2. Variety:	Lalo (BRC-7L)
6.2.2.1 Year of release:	2012
6.2.2.2 Breeder/Maintainer:	BARC
6.2.3. Variety:	Bulcha (BRC-8S)
6.2.3.1 Year of release:	2012
6.2.3.2 Breeder/Maintainer:	BARC
6.2.4. Variety:	Aw-004/00
6.2.4.1 Year of release:	2010
6.2.4.2 Breeder/Maintainer:	SARI/AWARC

7. Tomato (*Lycopersicum esculentum*.Mill)

Tomato is one of the most important and widely grown vegetable in Ethiopia. Both the fresh, processing and cherry type is produced in the country. Small-scale farmers produce the bulk of fresh market tomatoes. Processing types are mainly produced in large-scale horticultural farms. It is an important cash-generating crop to small-scale farmers and provides employment in the production and processing industries. It is also important source of vitamin A and C as well as minerals. Farmers are interested in tomato production more than any other vegetables for its multiple harvests potential of year round production, which results in high profit per unit area. The fresh produces is sliced and used as salad. It is also cooked for making local sauce. The processed products such as tomato paste, tomato juice, tomato ketchup and whole peel-tomato are produced for local market and export. Recently tomato is recognized for treating various human diseases. Such diverse uses make the tomato an important vegetable in irrigated agriculture in the country and the production is also rapidly increasing in many parts of the country.

Tomato is a seasonal climbing plant of the family *Solanaceae*. It is grown as an annual and produced for its fruits. It is one of the most popular & important vegetables for fresh consumption as well as for processing. The plant requires a warm & dry climate. The optimum mean day temperature for growth of tomato lies between 21°C and 26°C and temperature above 32°C during fruit development inhibit the formation of red color.

Tomato should be cultivated at an altitude below 2000 m. preferably; soils for tomato cultivation are loamy sand to silt loam. The requirement on the organic matter content of the soil is not so high, but soils with medium organic matter (OM) content have better yields than soils with a low OM content. Good soil drainage is important. Optimum pH range is from 5.5 to 7.0. The first fruits are produced 80-100 days from transplanting.

During 2019/20 Meher cropping season, the total area under production reaches **6,012.28** ha and the production is estimated to be over **349,472.59** quintals.

7.1 New variety

7.1.1. Variety name: **PO364**

7.1.1.1. Agronomic and morphological characteristics

▪ Adaptation area:	Low to mid altitude areas
○ Altitude(masl)	700-2100
○ Temperature(C°):	18-30
○ Soil type:	Sandy loam to silty loam
▪ Seed rate(seeds/ha):	20,000
▪ Spacing (cm):	100 between rows and 50 between plants
▪ Fertilizer(kg/ha)	
○ Urea :	200
○ NPS:	100
▪ Leaf coverage:	Very good canopy
▪ Leaf color:	Green
▪ Leaf size:	Medium to large
▪ Days to maturity:	96 after transplanting
▪ Growth habit	Determinate
▪ Stem strength:	Strong
▪ Fruit number per cluster:	4-6
▪ Fruit shape	Obviate
▪ Fruit size (gm):	176.4
▪ Cracks:	No
▪ Color before maturity:	Light Green
▪ Color of ripe fruit skin:	Red
▪ Color of fruit flesh:	Red
▪ Fruit firmness:	Firm
▪ shelf life (days):	12-15
▪ Fruit quality	
○ TSS(^Brix)	3.9-4.3
○ Acceptability:	High
▪ Crop pest reaction*	
▪ Total yield in qt/ha	856
○ Research field	486.06
○ Farmers field	
7.1.1.2. Year of registration:	2020
7.1.1.3. Breeder/Maintainer:	PoP Veriend Seeds BV Genral Harvesting Trading

*Resistant to *melioidogyne incognita* (mi)

7.2 Varieties under production

7.2.1. Variety:
 7.2.1.1. Year of release
 7.2.1.2. Breeder/Maintainer

7.2.2. Variety:
 7.2.2.1. Year of release
 7.2.2.2. Breeder/Maintainer

7.2.3. Variety:
 7.2.3.1. Year of release
 7.2.3.2. Breeder/Maintainer

7.2.4. Variety:
 7.2.4.1. Year of release
 7.2.4.2. Breeder/Maintainer

7.2.5. Variety:
 7.2.5.1. Year of release
 7.2.5.2. Breeder/Maintainer

7.2.6. Variety:
 7.2.6.1. Year of release
 7.2.6.2. Breeder/Maintainer

7.2.7. Variety:
 7.2.7.1. Year of release
 7.2.7.2. Breeder/Maintainer

7.2.8. Variety:
 7.2.8.1. Year of release
 7.2.8.2. Breeder/Maintainer

Kayla 555 F1
 2019
 Sunmeek (Binagro PLC)

JARRAH RZ F1
 2019
 Rijk Zwaan Zaadteelt en
 Zaadhinkel BV/ Reliable
 Horti-Consult PLC

MOROGORO F1)
 2019
 E.A.R PLC

Ayvaz 311
 2018
 ENZA ZADEN BEHEER
 Gawit International
 business Plc

Kayla 6699 F1
 2018
 Sunmeek (Binagro PLC)

Tinto (NUN 5038)
 2018
 Nunhems Ethiopia PLC

Nasadette (NUN 04302)
 2018
 Nunhems Ethiopia PLC

Galilea 39
 2018
 Green life PLC
 (Hazera seeds Ltd)

7.2.9. Variety:
 7.2.9.1. Year of release
 7.2.9.2. Breeder/Maintainer

7.2.10. Variety:
 7.2.10.1. Year of release
 7.2.10.2. Breeder/Maintainer

7.2.11. Variety:
 7.2.11.1. Year of release
 7.2.11.2. Breeder/Maintainer

7.2.12. Variety:
 7.2.12.1. Year of release
 7.2.12.2. Breeder/Maintainer

7.2.13. Variety:
 7.2.13.1. Year of release
 7.2.13.2. Breeder/Maintainer

7.2.14. Variety:
 7.2.14.1. Year of release
 7.2.14.2. Breeder/Maintainer

7.2.15. Variety:
 7.2.12.1. Year of release
 7.2.12.2. Breeder/Maintainer

7.2.16. Variety:
 7.2.16.1. Year of release
 7.2.16.2. Breeder/Maintainer

Shanty 92
 2018
 Green life PLC
 (Hazera seeds Ltd)

Randah
 2017
 ENZA ZADEN BEHEER
 Gawit Plc

Kubwa (E15A: 6007)
 2017
 ENZA ZADEN BEHEER
 Gawit Plc

Batool
 2017
 ENZA ZADEN BEHEER
 Gawit Plc

EMERALD F1
 2016
 Sakata/Joytech Plc

Monica
 2015
 DAWNT PLC

Tesha
 2015
 GREEN LIFE PLC

Momtanz
 2015
 SYNGENTA PLC

Crop Variety Register		Crop Variety Register	
7.2.17. Variety:	Chibli	7.2.26. Variety:	Shanty PM F1
7.2.17.1. Year of release	2015	7.2.26.1 Year of release:	2013
7.2.17.2. Breeder/Maintainer	SYNGENTA PLC	7.2.26.2 Breeder/Maintainer:	Hazera Genticls ltd (Greenline Trading PLC.)
7.2.18. Variety:	Gelilema (Oval red)	7.2.27. Variety:	STH – 808(JEWEL) (Hybrid)
7.2.18.1. Year of release	2015	7.2.27.1 Year of release:	2012
7.2.18.2. Breeder/Maintainer	MARC/EIAR	7.2.27.2 Breeder/Maintainer:	Vibha Seeds Ethiopia Private Limited Company
7.2.19. Variety:	Ilu-harar (CLN2498)	7.2.28. Variety:	STH – 805(SYNO) (Hybrid)
7.2.19.1. Year of release	2015	7.2.28.1 Year of release:	2012
7.2.19.2. Breeder/Maintainer	Bako ARC/OARI	7.2.28.2 Breeder/Maintainer:	Vibha Seeds Ethiopia Private Limited Company
7.2.20. Variety:	Sire (CLN2400B)	7.2.29. Variety:	ARP tomato d2
7.2.20.1 Year of release	2015	7.2.29.1 Year of release:	2012
7.2.20.2. Breeder/Maintainer	Bako ARC/OARI	7.2.29.2 Breeder/Maintainer:	MARC/EIAR
7.2.21. Variety:	Komto (CLN2123E)	7.2.30. Variety:	Rainbow
7.2.21.1. Year of release	2015	7.2.30.1 Year of release:	2011
7.2.21.2. Breeder/Maintainer	Bako ARC/OARI	7.2.30.2 Breeder/Maintainer:	Era Agrilink PLC
7.2.22. Variety:	Venise F1	7.2.31. Variety:	Galilea
7.2.22.1. Year of release	2015	7.2.31.1 Year of release:	2011
7.2.22.2. Breeder/Maintainer	MARKOS PLC	7.2.31.2 Breeder/Maintainer:	Hazera genetics ltd.
7.2.23. Variety:	Agro-34/AS-198/Awassa	7.2.32. Variety:	Bridget 40
7.2.23.1. Year of release	2015	7.2.32.1 Year of release:	2011
7.2.23.2. Breeder/Maintainer	MEKAMBA PLC	7.2.32.2 Breeder/Maintainer:	Hazera genetics ltd.
7.2.24. Variety:	Agro-359/AS-199 /Awash river	7.2.33. Variety:	Loreto F1 (Anna F1)
7.2.24.1. Year of release	2015	7.2.33.1 Year of release:	2011
7.2.24.2. Breeder/Maintainer	MEKAMBA PLC	7.2.33.2 Breeder/Maintainer:	Mokobu Enterprices plc (Monsanto Company)
7.2.25. Variety:	CLN-5915-93-D4 (Tekeze -1)	7.2.34. Variety:	Yaqui F1 (EDEN F1)
7.2.25.1. Year of release	2015	7.2.34.1 Year of release:	2011
7.2.25.2. Breeder/Maintainer	Humera ARC/TAR	7.2.34.2 Breeder/Maintainer:	Mokobu Enterprices plc (Monsanto Company)

Crop Variety Register

7.2.35 Variety:	TOPSPIN F1
7.2.35.1 Year of release:	2011
7.2.35.2 Breeder/Maintainer:	Bejo seed B.V.-Crop grow crop production PLC
7.2.36 Variety:	Barnum
7.2.36.1 Year of release:	2011
7.2.36.2 Breeder/Maintainer:	Markos PLC
7.2.37 Variety:	Shanty
7.2.37.1 Year of release:	2009
7.2.37.2 Breeder/Maintainer:	Hazera genetics ltd. (Axum GreenlineTrading plc)
7.2.38. Variety:	Irma
7.2.38.1 Year of release:	2009
7.2.38.2 Breeder/Maintainer:	Hazera genetics ltd (Axum GreenlineTrading plc)
7.2.39. Variety:	CHALI (Riogrande)
7.2.39.1 Year of release:	2007
7.2.39.2 Breeder/Maintainer:	MARC/EIAR
7.2.40 Variety:	COCHORO (Pace setter)
7.2.40.1 Year of release:	2007
7.2.40.2 Breeder/Maintainer:	MARC/EIAR
7.2.41 Variety:	MIYA (Floralou)
7.2.41.1 Year of release:	2007
7.2.41.2 Breeder/Maintainer:	MARC/EIAR
7.2.42 Variety:	Lakku (CLN-657-BC-F ₂ --274-0-15)
7.2.42.1 Year of release:	2006
7.2.42.2 Breeder/Maintainer:	BARC/OARI
7.2.43 Variety:	Sirinka-I (Cardinal)
7.2.43.1 Year of release:	2006
7.2.43.2 Breeder/Maintainer:	SRARC/ARARI

Crop Variety Register

7.2.44 Variety:	Mersa (Carman)
7.2.44.1 Year of release:	2006
7.2.44.2. Breeder/Maintainer:	SRARC/ARARI
7.2.45 Variety:	Woyno (Fireball)
7.2.45.1. Year of release:	2006
7.2.45.2 Breeder/Maintainer:	SRARC/ARARI
7.2.46 Variety:	Bishola (Floradado)
7.2.46.1 Year of release:	2005
7.2.46.2 Breeder/Maintainer:	MARC/EIAR6
7.2.47 Variety:	Fetane (Picador)
7.2.47.1 Year of release:	2005
7.2.47.2 Breeder/Maintainer:	MARC/EIAR
7.2.48 Variety:	Metadel (Caraibo)
7.2.48.1 Year of release:	2005
7.2.48.2 Breeder/Maintainer:	MARC/EIAR
7.2.49. Variety:	Eshete (Calypso)
7.2.49.1 Year of release:	2005
7.2.49.2 Breeder/Maintainer:	MARC/EIAR
7.2.50 Variety:	Melka Shola (Red Pear)
7.2.50.1 Year of release:	1997/98
7.2.50.2 Breeder/Maintainer:	MARC/EIAR
7.2.51 Variety:	Melka Salsa (Serio)
7.2.51.1 Year of release:	1997/98
7.2.51.2 Breeder/Maintainer:	MARC/EIAR

8. Garlic (*Allium Sativum*)

Garlic (*Allium sativum* L, 2n=16) belongs to the family Alliaceae and is the second most widely used *Allium* next to onion. It is originated on the northwestern side of the Tien-Shan Mountains of Kirgizia in the arid and semi arid areas of central Asia (Kazakhstan). There is evidence that it has been in use in Egypt before 2000 B.C, in India and China for more than 5000 years. Garlic is one of the most ancient cultivated herbs, and is vegetatively propagated from cloves. This mode of clone propagation allows the production of a uniform crop that preserves quality traits, such as flavor and the nutritive properties of the plant.

Garlic is used as a seasoning in many foods worldwide, without garlic many of our popular dishes would lack the flavor and character that make them favorites. Garlic's volatile oil has many sulfur containing compounds that are responsible for the strong odor, its distinctive flavor and pungency as well as for its healthful benefits.

Medicinal activity seems to be highest in fresh garlic or garlic oil with high allicin content.

In Ethiopia, small growers in the highlands grow garlic traditionally but due to faulty cultural practices, yields are generally low. The yield in large-scale production with irrigation is expected to be about 10 tons per hectare. Garlic is adapted to cool climates and should not generally be planted at an altitude below 2000 m.a.s.l. Amount of rainfall during the growing period (4.5 to 6 months) should be 600 mm to 700 mm. The optimum temperature for growing garlic lies between 12°C and 24°C. Garlic withstands moderate frost. On well-drained soils, rain fed crops may be planted on flat beds; but on heavy soils, which are poorly drained during the rains; it is advisable to plant on ridges as for irrigated crops. It is essential to select land with high fertility or to apply considerable quantities of manure or fertilizers to obtain good yields.

During **2019/20** Meher cropping season, the total area under production reaches **18,344.47** ha and the production is estimated to be **1,525,946.34** quintals.

8.1 New varieties

- No new variety released in 2020

8.2 Varieties under production

8.2.1. Variety:	Holeta (G - HL)
8.2.1.1. Year of release	2015
8.2.1.2. Breeder/Maintainer	Debre Zeit ARC/EIARI/
8.2.2. Variety:	Chefe (G – 104-1/94)
8.2.2.1. Year of release	2015
8.2.2.2. Breeder/Maintainer	Debre Zeit ARC/EIARI
8.2.3. Variety:	Chelenko I (G-147-2/94)
8.2.3.1. Year of release:	2014
8.2.3.2. Breeder/Maintainer:	Haramaya University
8.2.4 Variety:	Kuriftu (Acc no-G-59-2/94)
8.2.4.1 Year of release:	2010
8.2.4.2 Breeder/Maitainer:	DZARC/EIAR
8.2.5 Variety:	Qoricho (W-027)
8.2.5.1 Year of release:	2006
8.2.5.2 Breeder/Maintainer:	SARC/OARI
8.2.6 Variety:	Bishoftu Netch (W-014)
8.2.6.1 Year of release:	1999/00
8.2.6.2 Breeder/Maintainer:	DZARC/EIAR
8.2.7 Variety:	Tsedey 92 (G-493)
8.2.7.1 Year of release:	1999/00
8.2.7.2 Breeder/Maintainer:	DZARC/EIAR

9. Onion (*Allium cepa* L.)

Onion is one of the bulb crops belonging to the family Alliaceae. It is an important bulb crop in Ethiopia. It is considerably important in the daily Ethiopian diet. All the plant parts are edible, but the bulbs and the lower stems sections are the most popular as seasonings or as vegetables in stews. It is a recently introduced crop and rapidly becoming popular among producers and consumers. It is widely produced by small farmers and commercial growers throughout the year for local use and export market. Onion is valued for its distinct pungency and form essential ingredients for flavoring varieties of dishes, sauces, soup, sandwiches, snacks as onion rings etc. It is popular over the local shallot because of its high yield potential per unit area, availability of desirable cultivars for various uses, ease of propagation by seed, high domestic (bulb and seed) and export (bulb, cut flowers) markets in fresh and processed forms.

Onion contributes substantially to the national economy, apart from overcoming local demands. Products like bulbs and cut flowers are exported to different countries of the world. With the growing irrigated agriculture in the country, there is a great potential for extensive onion seed and dry bulb production in the different production belts of the country.

Onion prefers well-drained sandy loam with a high content of organic matter. The optimum altitude range for Onion production is between 700 and 2200 m.a.s.l. and the optimum growing temperature lies between 15°C and 23°C.

During 2019/20 Meher cropping season, the total area under production reaches over **36,373.48** hectares and the production is estimated to be over **2,738,589.86** quintals.

9.1 New variety

9.1.1. Variety name: **Baftaim improved – 1**

9.1.1.1. Agronomic and morphological characteristics

▪ Adaptation area:	Altitude(masl)	700-1800
	○ Temperature (C°):	15-30
▪ Planting season:		Year round
▪ Seed rate (kg/ha):		5-6
▪ Spacing(cm):		40 between furrowes, 20 between rows and 5 between plants
▪ Fertilizer(kg/ha)		
	○ NPS:	200
	○ Urea:	150
	○ Micro-nutrients:	Trace amount
▪ Type:		Open pollinated
▪ Days to bulb maturity:		110 after transplanting
▪ Plant height (cm):		42.62
▪ Bulb diameter (cm):		4.63
▪ Bulb size (gm):		77.5
▪ Bulb length (cm):		5.96
▪ Bulb color:		Red
▪ Bulb flesh color:		White
▪ Pungency::		Pungent
▪ Bulb quality/acceptability:		Very high
▪ Crop pest reaction*		-
▪ Bulb yield (qt/ha)		
	○ Research field	300 - 450
	○ Farmers“ field	200 - 410
9.1.1.2. Year of registration:		2020
9.1.1.3. Breeder/Maintainer		KINM Trading PLC / Alridha for Seed Production and Agriservices Est Hadhramout Govt.

* High resistance to leaf diseases tolerant to root diseases

Varieties under production

9.2.1. Variety:

9.2.1.1. Year of release

9.2.1.2. Breeder/Maintainer

9.2.2. Variety:

9.2.2.1. Year of release

9.2.2.2. Breeder/Maintainer

9.2.3. Variety:

9.2.3.1. Year of release

9.2.3.2. Breeder/Maintainer

9.2.4. Variety:

9.2.4.1. Year of release

9.2.4.2. Breeder/Maintainer

9.2.5. Variety:

9.2.5.1. Year of release

9.2.5.2. Breeder/Maintainer

9.2.6. Variety:

9.2.6.1. Year of release

9.2.6.2. Breeder/Maintainer

9.2.7. Variety:

9.2.7.1. Year of release

9.2.7.2. Breeder/Maintainer

Violet De Galmi (Nafid)

2019

Melkassa ARC (EIAR)

Red Wave

2019

Bejo Zaden B.V

Ethio Vegfru PLC

Basic

2019

Bejo Zaden B.V

Ethio Vegfru PLC

Super Yali (OPV)

2019

East West Seed

International- Thailand

(Cropsave Trading)

Gamay

2018

ENZA ZADEN BEHEER

/Gawt International

Business PLC

Han

2017

Holetta ARC/ EARI

Robaf

(Agrifound Dark Red)

2017

Melkassa ARC/EARI

9.2.8. Variety:

9.2.8.1. Year of release

9.2.8.2. Breeder/Maintainer

9.2.9. Variety:

9.2.9.1. Year of release

9.2.9.2. Breeder/Maintainer

9.2.10. Variety:

9.2.10.1. Year of release

9.2.10.2. Breeder/Maintainer

9.2.11. Variety:

9.2.11.1. Year of release

9.2.11.2. Breeder/Maintainer:

9.2.12. Variety:

9.2.12.1. Year of release

9.2.12.2. Breeder/Maintainer

9.2.13. Variety:

9.2.13.1. Year of release

9.2.13.2. Breeder/Maintainer

9.2.14. Variety:

9.2.14.1. Year of release

9.2.14.2. Breeder/Maintainer

Lambada (NUN-3004)

2017

Nunhems Ethiopia PLC

Mata Hari F1 (NUN-9834)

2017

Nunhems Ethiopia PLC

Rio Bravo F1 (NUN-2255)

Yellow type onion

2017

Nunhems Ethiopia PLC

Sirius

2015

GAWT INTERNATIONAL
BUSINESS PLC/ENZA
ZADEN B.V

Regent

2015

GAWT INTERNATIONAL
BUSINESS PLC/ENZA
ZADEN B.V

Red Coach

2015

GAWT INTERNATIONAL
BUSINESS PLC/ENZA
ZADEN B.V

Malbec

2015

GAWT INTERNATIONAL
BUSINESS PLC/ENZA
ZADEN B.V

Crop Variety Register

9.2.15. Variety:	Russet F1
9.2.15.1. Year of release:	2013
9.2.15.2. Breeder/Maintainer:	Hazera Gentics ltd (Greenline Trading PLC.)
9.2.16. Variety:	Ada F1
9.2.16.1. Year of release:	2013
9.2.16.2. Breeder/maintainer	Hazera Gentics ltd (Greenline Trading PLC.)
9.2.17. Variety:	ROSY (SOV 111)
9.2.17.1. Year of release:	2012
9.2.17.2. Breeder/Maintainer:	Vibha Seeds Ethiopia Private Limited Company
9.2.18. Variety:	Caramelo F1
9.2.18.1. Year of release:	2012
9.2.18.2. Breeder/Maintainer:	Impact Mundial Agri PLC
9.2.19. Variety:	Sweet Caroline
9.2.19.1. Year of release:	2012
9.2.19.2. Breeder/Maintainer:	Impact Mundial Agri PLC
9.2.20. Variety:	RED PASSION F1
9.2.20.1. Year of release:	2011
9.2.20.2. Breeder/Maintainer:	Bejo seed B.V.-Crop grow crop production PLC
9.2.21. Variety:	Sivan
9.2.21.1. Year of release:	2011
9.2.21.2. Breeder/Maintainer:	Hazera genetics ltd (Greenline Trading PLC.)
9.2.22. Variety:	XP Red F1 (JAMBAR F1)
9.2.22.1. Year of release:	2011
9.2.22.2. Breeder/Maintainer:	Mokobu Enterprices plc (Monsanto Company)

Crop Variety Register

9.2.23. Variety:	Red King
9.2.23.1. Year of release:	2011
9.2.23.2. Breeder/Maintainer:	Markos PLC
9.2.24. Variety:	Nafis (Franciscana)
9.2.24.1. Year of release:	2010
9.2.24.2. Breeder/Maintainer:	MARC/EIAR
9.2.25. Variety:	Neptune
9.2.25.1. Year of release:	2009
9.2.25.2. Breeder/Maintainer:	Hazera genetics ltd. (Greenline Trading PLC)
9.2.26. Variety:	Nasik Red
9.2.26.1 Year of release:	2004
9.2.26.2 Breeder/Maintainer:	MARC/EIAR
9.2.27. Variety:	Adama Red
9.2.27.1 Year of release:	-
9.2.27.2 Country of Origin:	Sudan
9.2.27.3 Breeder/Maintainer:	MARC/EIAR
9.2.28. Variety:	Melkam (Pusa Red)
9.2.28.1 Year of release:	1997/98
9.2.28.2 Breeder/Maintainer:	MARC/EIAR

**10. Shallot (*Allium cepa* var. *ascalonicum* Barker; syn.
A. ascalonicum auct. non L)**

The shallot is believed to have come from Western Asia. It is a perennial and seldom produces seeds, but the bulb when planted divides into a number of cloves, which remain attached at the bottom. It has been in cultivation from a remote period. Bulbs (cloves) are variable in shape, size and color covered with thin red scale leaves. Shallots are important alliaceous crops cultivated in many tropical countries as a substitute for bulb onions (*Allium cepa* L. var *cepa*). Although bulb onions can be grown in the tropics, farmers in tropical countries prefer shallots for their ability to propagate vegetatively.

Shallots are also preferred for their shorter growth cycle, better tolerance to disease and drought stresses and longer storage life than the common onion and for their distinct flavor that persists after cooking. Shallot plants normally produce clusters of several bulb splits that number from 2 to 20 or more pieces, with an ideal marketable size of about 30-40 mm in diameter. In tropical regions, some shallot genotypes rarely flower and even where seed production is possible, the majority of shallot genotypes are clonally propagated.

Shallots in particular are widely cultivated as a source of income by peasant farmers in many parts of the Ethiopia. They have a wide range of climatic and soil adaptation and are cultivated both under rain-fed and irrigated conditions. They are grown primarily for the bulb, although the green tops may also be consumed. In Ethiopia, shallots and onions are used for flavouring the local stew, „wot“ and are used in many households almost daily.

The shallot is tolerant to a wide range of soils with a PH of 6.0-7.0. Loose, sandy soils with a high level of organic matter are preferable, although silt clay loams are often preferred.

10.1 New variety

- No new variety released in 2020

10.2 Varieties under production

10.2.1. Variety:	DZSHT-005/02
10.2.1.1. Year of release	2019
10.2.1.2. Breeder/Maintainer	Debre Ziet ARC /EIAR
10.2.2. Variety:	Improved Huruta
10.2.2.1. Year of release	2017
10.2.2.2. Breeder/Maintainer	Haramaya University
10.2.3 Variety:	Tropics
10.2.3.1 Year of release:	2016
10.2.3.2. Breeder/Maintainer:	MARC/EIAR
10.2.4 Variety:	DZSHT-91-2B)
10.2.4.1 Year of release:	2016
10.2.4.2 Breeder/Maintainer:	DZARC/EIAR
10.2.5 Variety:	DZSHT-157-21
10.2.5.1 Year of release:	2016
10.2.5.2 Breeder/Maintainer:	DZARC/EIAR
10.2.6 Variety:	Minjar (DZSHT-164-1B)
10.2.6.1 Year of release:	2009
10.2.6.2. Breeder/Maintainer:	EIAR/DZARC
10.2.7 Variety:	Yeras (Vethalam)
10.2.7.1 Year of release:	2005
10.2.7.2 Breeder/Maintainer:	MARC/EIAR
10.2.8 Variety:	Negele (DZSHT-50)
10.2.8.1 Year of release:	2004
10.2.8.2 Breeder/Maintainer:	DZARC/EIAR

10.2.9 Variety: Huruta (DZ-SHT-91)
10.2.9.1 Year of release: 1997/98
10.2.9.2 Breeder/Maintainer: MARC/EIAR

11. Sweet/Hot Pepper (*Capsicum annuum*) and Chili (*Capsicum frutescens*)

Pepper is a seasonal plant of the family *Solanaceae*. It is grown as an annual crop and produced for its fruits. It is one of the most important vegetable crops for fresh consumption (as chilies), for processing and as a spice (for making stew). It is also a very important crop for spice extraction since it has a lot of Oleoresin for dying of food items. Dried peppers may be reconstituted whole, or processed into flakes or powders. Hot Pepper (*Capsicum annuum*) (known as barbaré) is important to the national cuisine of Ethiopia, at least as early as the 19th century, "that it was cultivated extensively in the warmer areas wherever the soil was suitable." Although it was grown in every province, barbaré was especially extensive in Yejuu and Mareqo areas.

The fruit of most species of *Capsicum* contains *capsaicin* (methyl vanillyl nonenamide), a lipophilic chemical that can produce a strong burning sensation in the mouth of the unaccustomed eater. Most mammals find this unpleasant, whereas birds are unaffected. The secretion of *capsaicin* protects the fruit from consumption by mammals while the bright colors attract birds that will disperse the seeds. Capsaicin is present in large quantities in the placental tissue (which holds the seeds), the internal membranes, and to a lesser extent, the other fleshy parts of the fruits of plants in the genus *Capsicum*. The amount of *capsaicin* in Capsicums is highly variable and dependent on genetics and environment, giving almost all types of Capsicums varied amounts of perceived heat. The only Capsicum without capsaicin is the bell pepper, a cultivar of *Capsicum annuum*, which has a zero rating on the Scoville scale. The lack of capsaicin in bell peppers is due to a recessive gene that eliminates capsaicin and, consequently, the "hot" taste usually associated with the rest of the Capsicum family.

The plant requires a hot and dry climate free of frost and suitable agro ecological areas. Suitable altitude ranges for optimum production of pepper is between 1000 and 1800 m.a.s.l. During **2019/20 Meher** cropping season, the total area cultivated of pepper (Green and Red peppers) was **185,872.63** hectares and the total production was estimated **3,803,188.67** quintals.

11a. Chili pepper (*Capsicum frutescens*)**11a.1. New varieties**

- No new variety released in 2020

11a.2 Varieties under production

11a.2.1 Variety:	Melka dera (PBC 586)
11a.2.1.1 Year of release:	2016
11a.2.1.2 Breeder/Maintainer:	MARC/EIAR
11a.2.2 Variety:	Melka Oli (PBC 142A)
11a.2.2.1 Year of release:	2016
11a.2.2.2 Breeder/Maintainer:	MARC/EIAR
11a.2.3 Variety:	Melka Shote (PBC 223)
11a.2.3.1 Year of release:	2006
11a.2.3.2 Breeder/Maintainer:	MARC/EIAR
11a.2.4 Variety:	Melka Awaze (PBC 600)
11a.2.4.1 Year of release:	2006
11a.2.4.2 Breeder/Maintainer:	MARC/EIAR
11a.2.5 Variety	Oda Haro
11a.2.5.1 Year of release:	2005
11a.2.5.2 Breeder/Maintainer:	BARC/ OARI
11a.2.6 Variety:	Melka Zala (PBC 972)
11a.2.6.1 Year of release:	2004
11a.2.6.2 Breeder/Maintainer:	MARC/EIAR

11b. Sweet/ Hot Pepper (*Capsicum annum*)**11b.1. New varieties****11b.1.1. Variety name: (Chala) PBC 602****(Hot pepper)****11b.1.1.1. Agronomic and morphological characteristics**

- Adaptation area: -
 - Altitude(masl) 1550-2000
 - Rainfall: Rain fed/Irrigated
- Spacing (cm): 70 between rows
30 between plants
- Planting time: April to August under rainfed condition and January to June under irrigated conditions
- Seed rate(Kg/ha): 0.7 - 0.75
- Fertilizer(kg/ha)
 - NPS : 242 at transplanting
 - Urea: 100 or 79 if NPS is used at 15-20 days after transplanting
- Days to maturity(green pods): 90-95
- Days to maturity (dry pods): 140-150
- Plant height(cm): 62.1
- Growth habit: Erect
- Days to 50% flowering: 46
- Average green pod wieght (gm):10.4
- Dry pod wall thickness (mm): 1-2
- Pod surface: Smooth
- Average pod length (cm): 10-12
- Average pod diameter (mm): 12-18
- Pod shape: Elongate
- Green pod color: Green
- Dry pod color: Red

▪ Pungency:	High
▪ Outstanding values:	Acceptable pod characteristics for green pod and high yield
▪ Crop pest reaction*:	-
▪ Yield (qt/ha)	
○ Green:	206
○ Dry:	29
11b.1.1.2. Year of registration:	2020
11b.1.1.3. Breeder/Maintainer	Melkassa ARC/EIAR/

* Tolerant to wilt diseases and virus

11b.2.1. Variety name: **(Gebaba) Rivival**
(Hot pepper)

11b.1.2.1. Agronomic and morphological characteristics

- Adaptation area: -
- Altitude(masl) 1550 - 2000
- Rainfall: Rain fed/Irrigated
- Spacing (cm): 70 between rows
30 between plants
- Planting time: April to August under rainfed condition and January to June under irrigated conditions
- Seed rate(Kg/ha): 0.7-0.75
- Fertilizer(kg/ha)
 - DAP orNPS : DAP: 200 or NPS: 242 at transplanting;
 - Urea: Urea: 100 or 79 if NPS is used at 15-20 days after transplanting
- Days to maturity (green pods): 95-100
- Days to maturity (dry pods): 155-165-
- Plant height(cm): 50.2
- Growth habit: Erect
- Days to 50% flowering: 40
- Average green pod wieght (gm):17.2
- Dry pod wall thickness (mm): 1.5-2.5
- Pod surface: Smooth
- Average pod length (cm): 8-9
- Average pod diameter (mm): 19-25
- Pod shape: Elongate
- Green pod color: Dark Green
- Dry pod color: Dark Red
- Pungency: Medium

Crop Variety Register

▪ Outstanding values:	Acceptable pod for green and dry pod with high yield
▪ Crop pest reaction*:	-
▪ Yield (qt/ha)	
○ Green:	233
○ Dry:	27
11b.1.2.2. Year of registration:	2020
11b.1.2.3. Breeder/Maintainer	Melkassa ARC/EIAR/

*Moderate tolerant to wilt diseases and virus

Crop Variety Register

11b.2 Varieties under production

11b.2.1. Variety:	ERTA ALE RZ F1 (HP-132 RZ) 2019 Rijk Zwaan Zaadteelt en Zaadhandel BV/ Reliable Horti-Consult PLC
11b.2.2. Variety:	Oshima F1 2019 East West Seed International- Thailand/ Crop save Trading PLC
11b.2.3. Variety:	ILANGA RZ F1 2019 Rijk Zwaan Zaadteelt en Zaadhandel BV/ Reliable Horti-Consult PLC
11b.2.4. Variety:	STARLET RZ F1 2019 Rijk Zwaan Zaadteelt en Zaadhandel BV/ Reliable Horti-Consult PLC
11b.2.5. Variety:	Austin 2019 Hazera Seeds Ltd/ Greenlife Trading PLC
11b.2.6. Variety:	Red Jet RZ F1 2018 Joytech Plc Rijk Zwaan Zaadteelt en Zaadhandel BV

Crop Variety Register

11b.7.2. Variety:	Amando (NUN 6040)
11b.7.2.1. Year of release	2017
11b.7.2.2. Breeder/Maintainer	Nunhems Ethiopia PLC
11b.8.3. Variety:	MEXITIZO RZ F1
11b.8.3.1. Year of release	2016
11b.8.3.2. Breeder/Maintainer	Rijk Zwaan Zaadlee en Zaadhandel.B.V/Joytech Plc
11b.9.4. Variety:	Kume (223662)
11b.9.4.1. Year of release	2015
11b.9.4.2. Breeder/Maintainer	Bako ARC/OARI
11b.10.5. Variety:	Dinsire (224665)
11b.10.5.1. Year of release	2015
11b.10.5.2. Breeder/Maintainer:	Bako ARC/OARI
11b.2.11. Variety:	Dame (244666)
11b.2.11.1. Year of release	2015
11b.2.11.2. Breeder/Maintainer	Bako ARC/OARI
11b.2.12. Variety:	Vigro F1
11b.2.12.1. Year of release	2015
11b.2.12.2. Breeder/Maintainer	MARKOS PLC
11b.2.13. Variety:	Harbad F1
11b.2.13.1. Year of release	2015
11b.2.13.2. Breeder/Maintainer	MARKOS PLC
11b.2.14. Variety:	Serano
11b.2.14.1. Year of release	2015
11b.2.2. Breeder/Maintainer	Mekamba PLC
11b.2.15. Variety:	Sahem
11b.2.15.1 Year of release:	2013
11b.2.15.2 Breeder/Maintainer:	Syngenta seeds B.V./Syngenta Agroservice AG Ethiopia

Crop Variety Register

11b.2.16. Variety:	Saidah
11b.2.16.1 Year of release:	2013
11b.2.16.2 Breeder/Maintainer:	Syngenta seeds B.V./Syngenta Agroservice AG Ethiopia.
11b.2.17 Variety:	CAPSI (SCH – 902 F1)
11b.2.17.1 Year of release:	2012
11b.2.17.2 Breeder/Maintainer:	Vibha Seeds Ethiopia Private Limited Company
11b.2.18 Variety:	SPICY (SCH -922 F1)
11b.2.18.1 Year of release:	2012
11b.2.18.2 Breeder/Maintainer:	Vibha Seeds Ethiopia Private Limited Company
11b.2.19. Variety:	SCH-925 F1
11b.2.19.1 Year of release:	2012
11b.2.19.2 Breeder/Maintainer:	Vibha Seeds Ethiopia Private Limited Company
11b.2.20 Variety:	SUPREME (SCH -942 F1)
11b.2.20.1 Year of release:	2012
11b.2.20.2 Breeder/Maintainer:	Vibha Seeds Ethiopia Private Limited Company
11b.2.21. Variety:	Serenade
11b.2.21.1 Year of release:	2011
11b.2.21.2 Breeder/Maintainer:	Hazera genetics ltd (Greenline Trading PLC.)
11b.2.22 Variety:	Melka Dima (Papri King)
11b.2.22.1 Year of release:	2004
11b.2.22.2 Breeder/Maintainer:	MARC/EIAR
11b.2.23. Variety:	Melka Eshet (Papri Queen)
11b.2.23.1 Year of release:	2004
11b.2.23.2 Breeder/Maintainer:	MARC/EIAR

12. Cabbage (*Brassica oleracea*)

The word cabbage (botanically *brassica oleracea*, capitata group) refers to several leafy garden plants of the Mediterranean origin. These small plants have a short stem and a globular head of tightly overlapping green to purplish leaves. As far as their heads are concerned they are compact or loose.

The word 'cabbage' originates from the French word cabosse, a colloquial term for "head". The Scots termed its stalk as castock, and the British call its head a loaf. It can be cooked in a variety of ways or eaten raw, as in slaw.

As the cabbage plant grows, its leaves increase in number, forming a ball-shaped "head" at the center of the plant. This cruciferous vegetable contains higher concentrations of Vitamin C, minerals, and dietary fiber.

Cabbage has been cultivated for more than 4,000 years and domesticated for over 2,500 years. Cabbage grows well in cool climates, and yields large harvests. Cabbage, both red and green, is one of the least expensive of the vitamin-protective foods, and is one of the most healthful vegetables. It is an excellent source of vitamin C.

Cabbage is alkaline in reaction, high in cellulose or roughage, and has very low calorie content and is very effective in helping overcome constipation, and sauerkraut, or sauerkraut juice, is particularly good for a sluggish intestinal tract, and for more serious cases of constipation.

In Ethiopia, the total area covered by head cabbage and Ethiopian cabbage in **2019/20** Meher cropping season was **46,128.99** ha and the total production during this season was about **4,604,276.6** quintals.

12.1 New varieties

- No new varieties released in 2020

12.2 Varieties under production

12.2.1. Variety:	Karibo F1
12.2.1.1. Year of registration:	2019
12.2.1.2. Breeder/Maintainer	E.A.R Plc/Gebroeders Bakker Zaadteelt en zaadhandel
12.2.2. Variety:	Romus
12.2.2.1. Year of registration	(Red head cabbage)
12.2.2.2. Breeder/Maintainer	2019
	Hazera Seeds Ltd/
	Greenlife Trading PLC
12.2.3. Variety:	TACOMA RZ F1
12.2.3.1. Year of registration:	2019
12.2.3.2. Breeder/Maintainer	Rijk Zwaan Zaadteelt en Zaadhinkel BV/ Reliable Horti-Consult PLC
12.2.4. Variety:	Indica F1
12.2.4.1. Year of registration:	2019
12.2.4.2. Breeder/Maintainer	East-East West Seed International –Thailand/
	Crop Save Trading
12.2.5. Variety:	Tana F1
12.2.5.1. Year of registration:	2018
12.2.5.2. Breeder/Maintainer	Markos Plc

Crop Variety Register

12.2.6. Variety:	CCS1104 (VI060644), Mi'o-2 (Chinese cabbage) 2018 Melkassa ARC /EIAR
12.2.6.1. Year of registration	
12.2.6.2. Breeder/Maintainer	
12.2.7. Variety:	CCS1107 (VI060647), Mi'o-1 Chinese cabbage 2018 Melkassa ARC /EIAR
12.2.7.1. Year of registration:	
12.2.7.2. Breeder/Maintainer	
12.2.8. Variety:	Kiseki F1 (Chinese cabbage) 2017 Sakata Seeds Southern Africa/Joytech Plc
12.2.8.1. Year of registration:	
12.2.8.2. Breeder/Maintainer	
12.2.9. Variety:	Green boy F1 2016 Sakata/Joytech Plc
12.2.9.1. Year of registration	
12.2.9.2. Breeder/Maintainer	
12.2.10. Variety:	Bandung F1 2015 MARKOS PLC
12.2.10.1. Year of registration:	
12.2.10.2. Breeder/Maintainer	
12.2.11. Variety:	Landini F1 2013 Hazera genetics ltd (Greenline Trading PLC).
12.2.11.1 Year of registration:	
12.2.11.2. Breeder/Maintainer:	
12.2.12. Variety:	Gloria 2013 Syngenta seeds BV /Syngenta Agro-service AG Ethiopia.
12.2.12.1. Year of registration:	
12.2.12.2. Breeder/Maintainer:	

Crop Variety Register

12.2.13. Variety	OPTIKO F1
12.2.13.1 Year of registration:	2013
12.2.13.2. Breeder/Maintainer:	Crop Grow PLC
12.2.14 Variety:	K 500
12.2.14.1 Year of registration:	2011
12.2.14.2. Breeder/Maintainer:	Hazera genetics ltd (Greenline Trading PLC.)
12.2.15 Variety:	OXYLUS F1
12.2.15.1 Year of registration:	2011
12.2.15.2 Breeder/Maintainer:	Mokobu Enterprizes PLC (Monsanto Company)
12.2.16. Variety:	VICTORIA F1
12.2.16.1 Year of registration:	2011
12.2.16.2 Breeder/Maintainer:	Mokobu Enterprizes PLC (Monsanto Company)
12.2.17 Variety:	ROTONDA F1
12.2.17.1 Year of registration:	2011
12.2.17.2 Breeder/Maintainer:	Bejo seed B.V.-Crop grow crop production PLC
12.2.18 Variety:	THOMAS F1
12.2.18.1 Year of registration:	2011
12.2.18.2 Breeder/Maintainer:	Bejo seed B.V.-Crop grow crop production PLC

13. Carrot (*Daucus carota* L.)

Carrot (*Daucus carota* L.) belongs to the family Apiaceae. The carrot originated in Asia. Initially the roots were long and thin, and either purple or yellow in colour. These colours, as well as white and orange, still exist, with the orange or orange-red colours being by far the most popular today. Many shapes of roots also exist, from rather long and thin roots to shorter and thick. Roots may be cylindrical, conical, or even spherical in shape.

Carrot is particularly rich in carotene (pro-vitamin A). It is consumed either fresh, as a salad crop, or cooked. Large quantities are also processed, either alone or in mixtures with other vegetables, by canning, freezing or dehydration. The plant is a biennial, i.e. it grows vegetatively in the first season and produces seed in the second. For root production the plant is grown as an annual. Bolting to seed in spring is possible in carrot plantings grown over the winter period.

In Ethiopia, the area covered by carrot in **2019/20** Meher cropping season is about **4,073.63** ha and the total production is estimated to be **182,254.14** quintals.

13.1 New varieties

- No new varieties released in 2020

13.2 Varieties under production

13.2.1 Variety:	Haramaya 1 (AUA-108)
13.2.1.1 Year of release:	2014
13.2.1.2 Breeder/Maintainer:	Haramaya University
13.2.2 Variety:	SAMSON
13.2.2.1 Year of release:	2011
13.2.2.2. Breeder/Maintainer:	Bejo seed B.V.-Crop grow crop production PLC

14. Lettuce (*Lactuca sativa*)

- No new varieties released in 2020

14.2 Varieties under production

14.2.1 Variety:	Holetta Red (Rsk-3)
14.2.1.1 Year of registration:	2019
14.2.1.2 Breeder/Maintainer:	Holetta ARC/EIAR
14.2.2 Variety:	Kenia RZ (Iceberg lettuce)
14.2.2.1 Year of registration:	2018
14.2.2.2 Breeder/Maintainer:	Joytech Plc Rijk Zwaan Zaadteelt en Zaadhandel BV
14.2.3 Variety:	Pedrola
14.2.3.1 Year of registration:	2015
14.2.3.2 Breeder/Maintainer:	GAWT INTERNATIONAL BUSINESS PLC/ENZA ZADEN B.V
14.2.4 Variety:	Botiola
14.2.4.1 Year of registration:	2015
14.2.4.2 Breeder/Maintainer:	GAWT INTERNATIONAL BUSINESS PLC/ENZA ZADEN BV
14.2.5. Variety:	Barundi RZ (Endive type)
14.2.5.1. Year of registration:	2013
14.2.5.2. Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV
14.2.6 Variety:	Cartagenas RZ (Ice berg type)
14.2.6.1. Year of registration:	2013
14.2.7.2. Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV

14.2.7. Variety:	Kristine RZ (Oak leaf green type)
14.2.7.1 Year of registration:	2013
14.2.7.2 Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV
14.2.8. Variety:	Mondai RZ (Oak leaf red type)
14.2.8.1 Year of registration:	2013
14.2.8.2 Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV
14.2.9. Variety:	Roussou RZ (Romain lettuce)
14.2.9.1 Year of registration:	2013
14.2.9.2. Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV
14.2.10. Variety:	Levistro RZ 2013
14.2.10.1. Year of release	Rijk Zwaan Zaadteel en Zaadhandel BV
14.2.10.2. Breeder/Maintainer:	
14.2.11. Variety:	Concorde RZ (Lollo Rosso type)
14.2.11.1 Year of release	2013
14.2.11.2 Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV
14.2.12. Variety:	Nation RZ (Lollo Rosso type)
14.2.12.1 Year of release	2013
14.2.12.2 Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV

14.2.13. Variety:	Aviram F1 (Iceberg type)
14.2.13.1 Year of release	2013
14.2.13.2 Breeder/Maintainer:	Hazera genetics ltd (Greenline Trading PLC.).
14.2.14. Variety:	Tesfa/Maya
14.2.14.1 Year of release	2012
14.2.14.2 Breeder/Maintainer:	MekelleARC/TARI

15.Snap bean (*Phaseolus vulgaris* L)**15.1 New varieties**

- No new varieties released in 2020

15.2 Varieties under production

15.2.1. Variety:	Plati
15.2.1.1 Year of release	2016
15.2.1.2 Breeder/Maintainer:	MARC/EIAR
15.2.2. Variety:	B.C 4.4
15.2.2.1 Year of release	2012
15.2.2.2 Breeder/Maintainer:	MARC/EIAR

16. Water melon (*Citrullus lanatus*)**16.1. New variety**

- No new varieties released in 2020

6.2. Variety under production

16.2.1. Variety:	COLUMBIA RZ F1
16.2.1.1. Year of registration:	2019
16.2.1.2. Breeder/Maintainer	Rijk Zwaan Zaadteelt en Zaadhinkel BV/ Reliable Horti-Consult PLC
16.2.2. Variety:	BARONESA RZ F1
16.2.2.1. Year of registration:	2019
16.2.2.1. Breeder/Maintainer	Rijk Zwaan Zaadteelt en Zaadhinkel BV/ Reliable Horti-Consult PLC
16.2.3. Variety:	Avallon F1
16.2.3.1. Year of registration:	2018
16.2.3.2. Breeder/Maintainer	Markos PLC
16.2.4. Variety:	Polimore
16.2.4.1. Year of registration:	2015
16.2.4.2. Breeder/Maintainer	GREENLIFE PLC
16.2.5. Variety:	Lahat F1
16.2.5.1. Year of registration:	2013
16.2.5.2. Breeder/Maintainer:	Hazera genetics ltd (Greenlife Trading PLC)
16.2.6. Variety:	Augusta
16.2.6.1. Year of registration:	2013
16.2.6.2. Breeder/Maintainer:	Syngenta seeds B.V./Syngenta Agroservice AG Ethiopia.

16.2.7. Variety:	Ria (SWMH121)
16.2.7.1. Year of registration:	2013
16.2.7.2. Breeder/maintainer:	ViBHA Seed Ethiopia PLC
16.2.8. Variety:	Candy (SWMH 123)
16.2.8.1. Year of registration:	2013
16.2.8.2. Breeder/maintainer:	ViBHA Seed Ethiopia PLC

17. Musk melon (*Cucumis melo*)**17.1. New variety**

- No new varieties released in 2020

17.2. Variety under production

17.2.1. Variety:	Glory F1
17.2.1.1. Year of registration:	2016
17.2.1.2. Breeder/Maintainer:	Origene seeds Ltd /Joytech Plc

18. Green courgette (*Cucurbita spp*)**18.1. New variety**

- No new variety released in 2020

18.2 Variety under production

18.2.1. Variety:	Borja
18.2.1.1. Year of registration:	2013
18.2.1.2. Breeder/Maintainer:	Crop grow PLC

19. Yellow courgette (*Cucurbita spp*)**19.1. New variety**

- No new variety released in 2020

19.2 Variety under production

19.2.1. Variety:	Soleil
19.2.1.1 Year of registration:	2013
19.2.1.2 Breeder/Maintainer:	Crop grow PLC

20. Broccoli (*Brassica oleracea*)**20.1. New variety**

- No new variety released in 2020

20.2. Variety under production

20.2.1. Variety:	Green star F1
20.2.1.1 Year of registration:	2019
20.2.1.2 Breeder/Maintainer:	Hazera Seeds Ltd/ Greenlife Trading PLC
20.2.2. Variety:	Agassi RZ F1
20.2.2.1 Year of registration:	2013
20.2.2.2 Breeder/Maintainer:	Rijk Zwaan Zaadteel en Zaadhandel BV

20.2.3 Variety:	LUCKY F1
20.2.3.1 Year of registration:	2011
20.2.3.2 Breeder/Maintainer:	Bejo seed B.V.-Crop grow crop production PLC

21. Cauliflower (*Brassica oleracea*)**21.1. New variety**

- No new variety released in 2020

21.2. Variety under production

21.2.1. Variety:	Ferrara (NiZ 10-540 F1)
21.2.1.1. Year of registration:	2019
21.2.1.2. Breeder/Maintainer	Hazera Seeds Ltd/ Greenlife Trading PLC
21.2.2. Variety:	MONEERA RZ F1
21.2.2.1. Year of registration:	2016
21.2.2.2. Breeder/Maintainer	RijkZwaanZaadteelten Zaadhandel B.V/ Joytech Plc
21.2.3. Variety:	Novaria
21.2.3.1. Year of registration:	2015
21.2.3.2. Breeder/Maintainer	GAWT INTERNATIONAL BUSINESS PLC/ENZA ZADEN B.V
21.2.4. Variety:	FLAMENCO F1
21.2.4.1 Year of registration:	2013
21.2.4.2 Breeder/Maintainer:	Crop grow PLC

22. Red beet (*Beta vulgaris*)**22.1. New variety**

- No new variety released in 2020

22.2. Variety under production

22.2.1. Variety:	BORO F1
22.2.1.1 Year of registration:	2013
22.2.1.2 Breeder/Maintainer:	Crop grow PLC

23. Snap pea (*Pisum sativum var. macrocarpon*)**23.1. New variety**

- No new variety released in 2020

23.2 Variety under production

23.2.1. Variety:	QUARTZ
23.2.1.1. Year of registration:	2013
23.2.1.2. Breeder/Maintainer:	Crop grow PLC
23.2.2. Variety:	NORBÚ
23.2.2.1 Year of registration:	2013
23.2.2.2 Breeder/Maintainer:	Crop grow PLC

24. Snow pea (*Pisum sativum var. saccharatum*)**24.1. New variety**

- No new variety released in 2020

24.2. Variety under production

24.2.1. Variety:	GARNET
24.2.1.1. Year of registration:	2013
24.2.1.2. Breeder/Maintainer:	Crop grow PLC
24.2.2. Variety:	ZIRKON
24.2.2.1 Year of registration:	2013
24.2.2.2 Breeder/Maintainer:	Crop grow PLC

25. Sweet corn (*Zea mays var. rugosa*)**25.1. New variety**

- No new variety released in 2020

25.2. Variety under production

25.2.1. Variety:	NOA F1
25.2.1.1. Year of registration:	2013
25.2.1.2. Breeder/Maintainer:	Crop grow PLC

26. Fine bush**26.1. New variety**

- No new variety released in 2020

26.2. Variety under production

26.2.1. Variety:	ADANTE
26.2.1.1. Year of registration:	2013
26.2.1.2. Breeder/Maintainer:	Crop grow PLC
26.2.2. Variety:	LOMAMI
26.2.2.1. Year of registration:	2013
26.2.2.2. Breeder/Maintainer:	Crop grow PLC
26.2.3. Variety:	BOSTON
26.2.3.1. Year of registration:	2013
26.2.3.2 Breeder/Maintainer:	Crop grow PLC
26.2.4. Variety:	VOLTA
26.2.4.1 Year of registration:	2013
26.2.4.2 Breeder/Maintainer:	Crop grow PLC

27. Okra(*Abelmoschus esculentus* L. Monech)

Okra (*Abelmoschus esculentus* L. Monech) is a vegetable crop that belongs to the genus *Abelmoschus* and family *Malvaceae*. It is a common vegetable crop grown under tropical and subtropical conditions. Okra apparently originated in what the geobotanists call the Abyssinian center of origin of cultivated plants, an area that includes present-day Ethiopia, the mountainous or plateau portion of Eritrea, and the eastern, higher part of the Anglo-Egyptian Sudan.

Okra is especially valued for its tender delicious fruits and is a good source of iodine and calcium. Apart from its nutritive value, matured fruits and stems containing crude fiber are used in paper industry. It can be eaten grated raw or cooked. It possesses high nutritive value, which is higher than tomatoes, eggplant and most cucurbits except bitter gourds (Berry *et al.*, 1988). The dried okra pods are also consumed directly and it is also used as flavoring in preparing other food products.

In Ethiopia okra is cultivated for local consumption by small scale farmers in low land parts of Ethiopia like western low land of Tigray, Gambella, Benishangul Gumuz, and Metema areas. However no research effort was made in variety development and improved agronomic practices of the crop.

27.1 New varieties

27.1.1 Variety name: Wayka (ML-OK-16)

27.1.1.1. Agronomic and morphological characteristics

- Adaptation area -
- Altitude(m.a.s.l) 700-1800
- Planting date Year round both under rainfed & irrigation
- Seed rate (kg/ha) 8-10
- Spacing(cm): 80 between rows and 30 between plants
- Fertilizer(kg/ha)
 - NPS: 242 at transplanting
 - Urea : 100 or 79 if NPS is used at 15-20 days after transplanting and after 2nd harvest
- Days to Maturity: 78
- Seedling vigor: Vigorous
- Growth habit: Erect
- Plant height(cm): 213
- Flower color: Yellowish
- Fruit length (cm): 16
- Number of fruit per plant: 40-55
- Average fruit weight (g): 25-35
- Fruit Pubescence: Downy
- Fruit color: Whitish green
- Fruit surface: Smooth
- Primary branches per plant: 3-6
- Outstanding values: Acceptable pod characteristics for its downy fruits and high yield
- Crop pest reaction -
- Yield (qt/ha)
 - Research field 155
 - Farmers'' field -

27.1.1.2. Year of release

27.1.1.3. Breeder/Maintainer

2020
Melkasa ARC/EIAR

27.1.2 Variety name: Qenqes (Spineless)

27.1.2.1. Agronomic and morphological characteristics

- Adaptation area -
- Altitude(m.a.s.l) 700-1800
- Planting date Year round both under rainfed & irrigation
- Seed rate (kg/ha) 8-10
- Spacing(cm): 80 between rows and 30 between plants
- Fertilizer(kg/ha)
 - NPS: 242 at transplanting
 - Urea : 100 or 79 if NPS is used at 15-20 days after transplanting and after 2nd harvest -
- Days to Maturity: 71
- Seedling vigor: Vigorous
- Growth habit: Erect
- Plant height(cm): 137
- Flower color: Yellowish
- Fruit length (cm): 19
- Number of pods per plant: 45-60
- Average Fruit Weight (g): 35-50
- Fruit Pubescence: Downy
- Fruit color: Green
- Fruit surface: Ridges
- Primary branches per plant: 2-4
- Outstanding values: Acceptable pod for its downy fruits with high yield
- Crop pest reaction -
- Yield (qt/ha)
 - Research field 119
 - Farmers'' field -

27.1.2.2. Year of release

27.1.2.3. Breeder/Maintainer

2020
Melkasa ARC/EIAR

27.2. Variety under production

27.2.1 Variety:	Bamya-Humera (Acc#23793)
27.2.1.1 Year of release:	2016
27.2.1.2 Breeder/Maintainer:	Humera ARC/TARI
27.2.2 Variety:	Slender (SOH-701)
27.2.2.1 Year of registration:	2013
27.2.2.2 Breeder/Maintainer:	ViBHA Seed Ethiopia PLC

28. Anchote (*Coccinia abyssinica*)

Anchote is the Afan Oromo name for *Coccinia abyssinica*, which is a tuber crop, belongs to the order *Cucurbitales*, family *Cucurbitaceae*, indigenous to Ethiopia (Abera, 1995, Desta, 2011). The genus *Coccinia* is made up of 30 species of which eight are reported to occur in Ethiopia. The species recorded in Flora of Ethiopia since 1995 include: *Coccinia abyssinica* (Lam.) Cogn. *C. adoensis* (Hochst. Ex. A. Rich.) Cogn., *C. grandis* (L.) Voigh (Syn. *C. indica* Wight and Arn.), *C. megarrhiza*, *C. Jeffrey* and *C. schliebenni* Harms. The remaining three species have not so far been described and named. According to Amare (1973), anchote is cultivated in areas between 1300-2800 m above sea level where the annual rainfall is 762- 1016 mm.

Anchote is one of the most important indigenous root and tuber crops to Ethiopia. It is a good source of vitamins, minerals protein and calcium compared to other root crops. Therefore, it can be used as a strategic crop to alleviate protein deficiency in areas of nutrition with low protein source (Amsalu *et al.*, 2008). The most widely used vernacular name is Anchote, spelt '*Ancootee*' in Oromo. It is also called: Ushushe (Wolaita), Shushe (Dawuro), and Ajjo (Kafigna) (Amsalu *et al.*, 2008).

Anchote is endemic to the Western parts of Ethiopia, mainly in the Western and south western regions of Ethiopia; Wollega zones, Iluababor, Jimma, Kaffa , Dawuro, Gamo Gofa, Wolaita, Sidama and Hadiya (Amare, 1973, Amsalu *et al.*, 2008). Anchote is a valuable food source and according to local farmers, it helps in fast mending of broken/ fracture bones and displaced joints, as it contains high calcium, and proteins than other common and wide spread root and tuber crops. Dawit and Estifanos reported that the juice prepared from tubers of Anchote has saponin as an active substance and is used to treat Gonorrhoea, Tuberculosis, and Tumor Cancer.

Like many other root, and tuber crops, Anchote is rarely eaten raw. Traditionally, boiled after peeling or boiled before peeling and/ or further cooking are applied prior to consumption.

28.1 New varieties

- No new varieties released in 2020

28.2 Variety under production

28.2.1. Variety:	Desta 01 (223110 (25))
28.2.1.1. Year of release:	2018
28.1.1.1. Breeder/Maintainer	Debere ziet ARC/EIAR

29. Amaranthus (*Amaranthus cruentus* L.)**29.1 New varieties**

- No new varieties released in 2020

29.2 Variety under production

29.2.1. Variety:	Madiira- II
29.2.1.1. Year of release:	2018
29.2.1.2. Breeder/Maintainer	Melkassa ARC/EIAR
29.2.1. Variety:	AC-NL
29.2.1.1. Year of release:	2018
29.2.1.2. Breeder/Maintainer	Melkassa ARC/EIAR

30. Pakchoi (*Brassica Rapa var. chinensis*)**30.1 New varieties**

- No new varieties released in 2020

30.2 Variety under production

30.2.1. Variety:	Sefisa-1 (AVLB-1203)
30.2.1.1. Year of release:	2018
30.2.1.2. Breeder/Maintainer	Melkassa ARC/EIAR

30.2.2. Variety:	Sefisa-2 (A-1)
30.2.2.1. Year of release:	2018
30.2.2.2. Breeder/Maintainer	Melkassa ARC/EIAR

31. Eggplant (*Solanum melongena* L.)**31.1 New variety**

- No new varieties released in 2020

31.2 Variety under production

31.2.1 Variety:	Aragon 1726
31.2.2.1 Year of registration:	2018
31.2.2.2 Breeder/Maintainer:	Green life PLC Hazera seeds Ltd

32. Cucumber (*Cucumis sativus*)**32.1 New variety**

- No new varieties released in 2020

32.2 Variety under production

32.2.1 Variety:	Mydas RZ F1 (Slicer cucumber)
32.2.2.1 Year of registration:	2018
32.2.2.2 Breeder/Maintainer:	Joytech Plc Rijk Zwaan Zaadteelt en Zaadhandel BV

33. Summer squash (*Cucurbita pepo*)

Summer squash (*cucurbita pepo*) is a recent introduction and cultivation to Ethiopia. Summer squash, members of the Cucurbitaceae family and relatives of both the melon and the cucumber, come in many different varieties. While each type varies in shape, color, size and flavor, they all share some common characteristics. The entire vegetable, including its flesh, seeds and skin, is edible. In addition, some varieties of the squashes produce edible flowers. Unlike winter squash, summers squash is more fragile and cannot be stored for long period of time.

Summer squash is a tender, warm-season vegetable that can be grown easily in-home garden anytime during the warm, frost-free growing season. It grows on bush-type plants that do not spread like the plants of fall and winter squash and pumpkin. A few healthy and well-maintained plants produce abundant yields.

Because summer squash develops very rapidly after pollination, they are often picked when they are not too large and over mature. They should be harvested when small and tender for best quality. Most elongated varieties are picked when they are 2 inches or less in diameter and 6 to 8 inches long.

Squash is used generally as a cooked food item, but is sometimes eaten raw as a fresh salad ingredient. The fruit is usually harvested when it is 20 cm (8 in) or less in length while seeds are still soft and palatable. It can be prepared in many ways, including boiled, baked, steamed, stir fried or grilled.

Summer squash varieties neither released nor registered for production in Ethiopia until 2020. However, seeds of the commercial „black beauty“ summer squash variety have been introduced and produced by farmers with the recommendation of ministry of Agriculture since 1970s. However, the productions and consumptions of summer squash have been increased in recent years around large cities due to population increase and the demand of nutritional diversification.

32.1 New variety:

32.1.1 Variety name: Zucchini-1 (JP-10)

32.1.1.1. Agronomic and morphological characteristics

- Adaptation area - 1500-2400
- Altitude(m.a.s.l) 1500-2400
- Planting date: Throughout the year both under rainfed and irrigation condition --
- Seed rate (kg/ha) 100 between rows and 50 between plants
- Spacing(cm):
- Fertilizer(kg/ha)
 - NPS: 242 at transplanting
 - Urea : 100 or 79 if NPS is used at 15-20 days after transplanting and after 3rd harvest
- Days to Maturity: 55
- Seedling vigor: High
- Growth habit: Bushy
- Flower color: Yellow
- Fruit length (cm): 24.8
- Fruit width (cm): 6.2
- Number of fruit per plant: 8.8
- Average Fruit Weight (g): 451.3
- Fruit color: Light green
- Flush color: Whitish
- Fruit shape: Cylindrical
- Fruit surface: Smooth
- Leaf color : Green with white spot
- Outstanding values: Acceptable fruit characteristics, early maturity, frequent and extended harvest; and high yielder,
- Crop pest reaction*

▪ Yield (qt/ha)	
○ Research field	169.2
○ Farmers'' field	-
32.1.1.2. Year of release	2020
32.1.1.3. Breeder/Maintainer	Melkasa ARC/EIAR

* *Moderately tolerant to wilt diseases*

Group V. Condiments and Medicinal Plants

The history of spices, condiments, and other flavoring material is one of the most romantic in the history of vegetable products.

The majority of spices originated in the Asiatic tropics and was among the 1st objects of commerce between the East and the West. Their aromatic qualities were useful in overcoming the odors of bad food and unwashed humanity. They were used in beverages, in medicine and even in lieu of money.

Spices cannot be classed as foods for they contain little of nutrition value. They do, however, give an agreeable and aroma to food, and add greatly to the pleasure of eating. They stimulate the appetite and increase the flow of the gastric juices, for this reason they are often referred to as food accessories or adjuncts. Whatever value they have is due to the presence of the essential oils, and occasionally to other aromatic principles.

1. Coriander (*Coriandrum sativum* L.)

1.1 New varieties

- No new varieties released in 2020

1.2. Varieties under production

1.2.1. Variety:	Gadisa (Acc. MAB-030)
1.2.1.1. Year of released:	2019
1.2.1.2. Breeder/maintainer:	Sinana ARC/ORARI
1.2.2. Variety:	Batu (90312)
1.2.2.1. Year of released:	2018
1.2.2.2. Breeder/maintainer:	Adami tulu ARC/ORARI
1.2.3. Variety:	Tulu (207515)
1.2.3.1. Year of registration:	2018
1.2.3.2 Breeder/Maintainer:	Adami tulu ARC/ORARI
1.2.4. Variety:	Denkinesh (Brazil)
1.2.4.1. Year of released:	2017
1.2.4.2. Breeder/maintainer:	Tepi National Spices RC and Kulumsa ARC/EIAR
1.2.5. Variety:	INDIUM 01
1.2.5.1. Year of registration:	2008
1.2.5.2 Breeder/Maintainer:	DZARC
1.2.6 Variety:	Walta-I (229710)
1.2.6.1 Year of release:	2006
1.2.6.2 Breeder/Maintainer:	SARC/OARI

2. Black pepper (*Piper nigrum* L.)

2.1 New varieties

- No new varieties released in 2020

2. 2 Varieties under production

2.2.1 Variety:	TATO (Sril.3/80)
2.2.1.1 Year of registration:	2007
2.2.1.2 Breeder/ Maintainer:	JARC/EIAR
2.2.2 Variety:	GACHEB (Pan. 4/80)
2.2.2.1 Year of registration:	2007
2.2.2.2 Breeder/Maintainer:	JARC/EIA

3. Ginger (*Zingeber officinale* Rosc)

3.1 New varieties

- No new variety released in 2020

3. 2 Varieties under production

3.2.1. Variety:	YALI (Miz.180/73)
3.2.1.1 Year of registration:	2007
3.2.1.2 Breeder/Maintainer:	JARC/EIAR
3.2.2 Variety:	BOZIAB (Mau. 37/79)
3.2.2.1 Year of registration:	2007
3.2.2.2 Breeder/Maintainer:	JARC/EIAR

4. Turmeric (*Curcuma domestica*)**4.1 New varieties**

- No new variety released in 2020

4. 2 Varieties under production

4.2.1. Variety:	TEPI - 1 (Bonga 51/71)
4.2.1.1. Year of released:	2017
4.2.1.2. Breeder/maintainer:	Tepi National Spices RC/EIAR
4.2.2. Variety:	DAMEY (Ind.48/72)
4.2.2.1. Year of released:	2007
4.2.2.2. Breeder/maintainer:	Jimma ARC/EIAR

5. Cardamom (*Elettaria cardamomum*)**5. 1. New varieties**

- No new variety released in 2020

5. 2 Varieties under production

5.2.1 Variety:	GENE (Tan. 82/72)
5.2.1.1 Year of registration:	2007
5.2.1.2 Breeder/Maintainer:	JARC/EIAR

6. Sweet annie (*Artemisia annua*)**6.1 New varieties**

- No new variety released in 2020

6. 2 Varieties under production

6.2.1 Variety:	WENDO (ወንዶ)
6.2.1.1 Year of registration:	2007
6.2.1.2 Breeder/Maintainer:	EORC/EIAR

7. Citronella grass (*Cymbopogon winterianus*)**7.1 New varieties**

- No new variety released in 2020

7. 2 Varieties under production

7.2.1. Variety:	Citronella (ክትሬና)
7.2.1.1 Year of registration:	2007
7.2.1.2 Breeder/Maintainer:	EORC/EIAR

8. Pyrethrum (*Chrysanthemum cinerariaefolium*)**8.1 New varieties**

- No new variety released in 2020

8. 2 Varieties under production

8.2.1. Variety:	BEKOJI (Clone Ku-59)
8.2.1.1 Year of registration:	2007
8.2.1.2 Breeder/Maintainer:	KARC/EIAR
8.2.2 Variety:	Workyie (Clone Ku-73)
8.2.2.1 Year of registration:	2007
8.2.2.2 Breeder/Maintainer:	KARC/EIAR

9. Cumin (*Nigella sativa*)**9. a. Black cumin****9a.1 New varieties**

- No new varieties released in 2020

9a. 2 Varieties under production

9a.2.1. Variety:	Qeneni (Acc. 20750-1)
9a.2.1.1. Year of released:	2019
9a.2.1.2. Breeder/maintainer:	Sinana ARC/ORARI
9a.2.2. Variety:	Kenna (Acc. 239730-2)
9a.2.2.1. Year of release:	2019
9a.2.2.2. Breeder/Maintainer:	Sinana ARC/OARI
9a.2.3. Variety:	Silingo (242843)
9a.2.3.1. Year of released:	2017
9a.2.3.2. Breeder/maintainer:	Tepi National Spices RCKulumsa ARC/EIAR
9a.2.4. Variety:	Sooressaa (AC-BC-15)
9a.2.4.1. Year of release:	2016
9a.2.4.2. Breeder/Maintainer:	Sinana ARC/OARI
9a.2.5. Variety:	Gemmachis (MAB-018)
9a.2.5.1 Year of release:	2016
9a.2.5.2. Breeder/Maintainer:	Sinana ARC/OARI
9a.2.6. Variety:	DERSHYE (ደርሱዬ) (223071)
9a.2.7.1 Year of release:	2009
9a.2.7.2 Breeder/Maintainer:	MARC
9a.2.8 Variety:	ADEN (አዲን) (Yemen 1)
9a.2.8.1 Year of release:	2009
9a.2.8.2. Breeder/Maintainer:	MARC/

9a.2.9. Variety:	Darbera (229806)
9a.2.9.1 Year of release:	2006
9a.2.9.2 Breeder/Maintainer:	SARC/OARI

9b. White cumin**9b.1 New varieties**

- No new varieties released in 2020

9b. 2 Varieties under production

9b.1.1. Variety:	Takusa-1 (Gonder 027/2001)
9b.1.1.1. Year of released:	2017
9b.1.1.2. Breeder/maintainer:	Gonder ARC/ARARI
9b.1.2. Variety:	Dembia-1 (Gonder 023/2000)
9b.1.2.1. Year of released:	2017
9b.1.2.2. Breeder/maintainer:	Gonder ARC/ARARI

10. Lemmon grass (*Cymbopogon citratus* (DC) Stapf)

Lemmongrass (*Cymbopogon citratus* (DC) Stapf) is a perennial aromatic tropical C₄ grass that belongs to the family Poaceae. The genus *Cymbopogon* comprises about 140 species, of which lemongrass (*Cymbopogon citratus* (DC) Stapf) is one of the three aromatic grasses considered economically important for the production of essential oils and aromatic herbs. The name lemongrass is derived from the typical lemon like odor of the EO present in the shoot.

Lemongrass can be used as carminative, insect repellant and widely used as herbal tea. It has a remedial properties and is used to treat bronchitis, sinusitis, cold, fever, malaria, hemorrhoids, toothache, baby oil, massage oil, ointment for body, oil for rheumatism, oil for beauty mask, herbal baths, sop and candle making industries and herbal cooking's.

10.1 New varieties

- No new varieties released in 2020

10. 2 Varieties under production

10.2.1. Variety:	WG-Lomisar-UA
10.2.1.1. Year of release:	2014
10.2.1.2. Breeder/Maintainer:	Wondo Genet ARC
10.2.2. Variety:	WG-Lomisar-Java
10.2.2.1. Year of release:	2014
10.2.2.2. Breeder/Maintainer:	Wondo Genet ARC
10.2.3. Variety:	LOMISAR-1
10.2.3.1 Year of registration:	2011
10.2.3.2 Breeder/Maintainer:	Wondo Genet ARC

11. Peppermint(*Mentha piperita* L.)

11.1 New varieties

- No new variety released in 2020

11. 2 Varieties under production

11.2.1. Variety:	Liyu
11.2.1.1 Year of registration:	2011
11.2.1.2 Breeder/Maintainer:	Wondo Genet ARC

12. Speare mint (*Mentha spicata* L.)

Mints comprise a group of species of the genus *Mentha* belonging to the family Lamiaceae. Among mint species, spearmint (*Mentha spicata* L.) is considered industrial crop as it is a source of essential oils enriched in certain monoterpenes like carvol, dihydrocarveole, dihydrocarveylacetate, menthol, menthone, caryophyllene, terpineol and cubebene which is widely used in food, flavor, cosmetic and pharmaceutical industries.

Spearmint is well adapted to climatic conditions in tropical and subtropical areas. It can be cultivated in wide range of soils and found in back gardens of homesteads. A climate with adequate and regular rainfall and good sunshine during its growing period ensures a good yield. Mint in general is succulent crop that has a high water requirement during its active growth period. The water requirements of mints differ from location to location depending on soil type, soil fertility status and climatic factors.

12.1 New varieties

- No new varieties released in 2020

12. 2 Varieties under production

12.2.1. Variety:	WG-SPM-FRAN
12.2.1.1. Year of release:	2014
12.2.1.2. Breeder/Maintainer:	Wondo Genet ARC
12.2.2. Variety:	WGSM-03
12.2.2.1 Year of registration:	2011
12.2.2.2 Breeder/Maintainer:	Wondo Genet Agricultural Research Center

13. Japanese mint (*Mentha arvensis* L.)

13.1 New varieties

- No new variety released in 2020

13. 2 Varieties under production

13.2.1. Variety:	Wondo-1
13.2.1.1 Year of registration:	2011
13.2.1.2 Breeder/Maintainer:	Wondo Genet ARC

14. Spanish mint (*Mentha spicata* 'Spanish Pointed')

Spanish mint (*Mentha spicata* 'Spanish Pointed') is a hardy perennial herb which belongs to Lamiaceae family, producing mauve flowers summer through fall. A full-flavored mint use Spanish mint in tea, soups, stir fry, salads and more. It is used in teas, beverages, jellies, syrups, ice creams, confections, chutneys. It contains Vitamin C and Vitamin A and a cup of fresh mint tea has been known as an herbal remedy to many cultures for many generations. Mint was originally used as a medicinal herb to treat stomach ache and chest pains. During the middle ages, powdered mint leaves were used to whiten teeth. Its essential oil is also used as an environmentally-friendly insecticide.

It is one of the herbs which can grow in most soil with deep, well-drained, wealthy in humus, with good moisture retention. Location and harvesting cycle have its own impact on production and productivity of most herbs.

14.1 New variety

- No new variety released in 2020

14.2 Varieties under production

14.2.1. Variety:

WG - SPM -Span
(ሰጠኔስፖርት)

14.2.1.1. Year of release:

2018

14.2.1.2. Breeder/Maintainer:

Wondo Genet ARC/EIAR

15. African marigold (*Tagetes erecta* L.)

African marigold (*Tagetes erecta* L.), which occupies a prominent place in ornamental horticulture, is one of the commercially exploited flower crops belonging to the family Asteraceae. It is native of Central and South America especially Mexico. There are several other important species viz., *Tagetes tenuifolia* L (striped marigold), *Tagetes lucida* L. (sweet scented marigold) and *Tagetes minuta* L (perfume marigold). African marigold, which is the focus of this specific experiment, is a hardy annual plant grows up to one meter and above, bears single or fully double large sized globular heads of yellow, orange and white shades. African marigold (*Tagetes erecta* L.) is a widely cultivated as bedding plants, loose flower, perfume, natural color, pigments, carotenoids, insect and nematodes repellents, nutrient supplement for poultry feed.

Marigold plants in-between rows of onion crop can promote the reduction of aphid, nematode and whitefly populations and virus diseased plants. Different parts of this plant is used widely in traditional medicine for curing various sicknesses like ulcers, fevers, epileptic fits, astringent, carminative, stomachic, scabies, liver complaints and in the treatment of eye diseases. The leaves are used in kidney troubles and in muscular pain. Infusion of plant is used against rheumatism, cold and bronchitis. Internally, they are said to purify blood and flower juice is given as a remedy for bleeding piles. It is also one of the most important natural sources of xanthophylls for use as natural food additive to brighten egg yolks and poultry skin. Moreover, it is also being used effectively to dye fabrics commercially, where its ethanol-based flower extracts produce different colors on fabrics. There is an excessive use of synthetic dyes, estimated at around 10,000,000 tons per annum against the natural dyes of about 15,000 metric tons, the production and application of which release vast amounts of waste and unfixed colorants, causing serious health hazards and disturbing the eco-balance of nature.

This demand gap can be met by extracting the natural dyes from plant source. One popular and potential source in textile industries for dying the fabrics is African marigold.

Currently, ecological considerations are becoming important factors in the selection of consumer goods all over the world. By the early part of this century only a small percentage of textile dyes were extracted from plants, but now, there has been increasing interest in natural dyes, as the public has become aware of ecological and environmental problems related to the use of synthetic dyes. has become aware of ecological and environmental problems related to the use of synthetic dyes. Based on this fact, Marigold cultivation has got strong attention.

15.1 New variety

- No new variety released in 2020

15.2 Varieties under production

15.2.1. Variety: AVT001

15.2.1.1. Year of register: 2013

15.2.1.2. Breeder/Maintainer: Zifo Agritech Plc and
WGARC

15.2.2. Variety: AVT 540

15.2.2.1. Year of register: 2013

15.2.2.2. Breeder/Maintainer: Zifo Agritech Plc and
Wondo Genet Agricultural
Research Center

15.2.3. Variety: AVT 7063 [HEWOYDE]

15.2.3.1. Year of register: 2013

15.2.3.2. Breeder/Maintainer: Zifo Agritech Plc and
Wondo Genet Agricultural
Research Center

16. Geranium

Rose Scented Geranium (*Pelargonium graveolens* L. Herit)

Rose scented geranium (*Pelargonium graveolens* L. Herit) is a perennial aromatic and medicinal herb/shrub that belongs to the Geraniaceae family. It was originated in South Africa as well as reunion Madagascar, Egypt and Morocco. There are over 700 varieties of cultivated geraniums; however, most are grown for ornamental purposes. The oil producing species are *P. graveolens*, *P. capitatum* and *P. radens*, *P. odorantissimum*, *P. asperum*, *P. crispum*, *P. roseus*, *P. tomentosum*, *P. zonale* and *P. roseum*. Oil bearing geraniums are mainly cultivated in Egypt, China, Comoros, India, France, Morocco, Algeria, Tunisia and South Africa.

From the different oil producing species of geranium, rose scented geranium (*P. graveolens* L. Herit) is the main focus of this document. It is grown for the production of essential oil from its leaves, flowers and stalks through stem or hydro distillation. Its essential oil imparts fine rose, citrus and mint like odors. The main constituents of the essential oil are citronellol, geraniol, linalool, iso-menthone, citronellyl formate, geraniol formate and guaiac-6,9-diene.

The essential oil has wide-ranging uses in flavor and fragrance industries, aromatherapy, cosmetic industries, food and pharmaceutical industries. It is one of the best skincare oils because it is good in opening skin pores and cleaning oily complexions. The oil is also used for the treatment of heavy menstrual flows and menopause problems. It is also used for the treatment of dysentery, hemorrhoids, inflammation, cancer, diabetes, diarrhea, gallbladder problems, gastric ulcers, jaundice, liver problems, and useful in reducing pain due to post-herpetic neuralgia followed by shingles. The oil is also useful for mite control, eczema and athlete foot problems. The leaves are used in a form of herbal tea to de-stress, to fight anxiety, to ease tension, to improve circulation and to cure tonsillitis. Due to these potential applications and uses, it is ranked as one of the top ten most expensive essential oil bearing plants in the world.

16.1 New variety

- No new variety released in 2020

16.2. Variety under production

16.2.1. Variety:	SHITO [ሮቶ]
16.2.1.1. Year of Release:	2013
16.2.1.2. Breeder/Maintainer:	Wondo Genet ARC

17. Chamomile (*Matricaria chamomilla* L.)

Chamomile (*Matricaria chamomilla* L.) is an annual herb that belongs to the family Asteraceae. It is a well-known aromatic and medicinal plant often referred to as the “star among medicinal species”. It is native to Southern and Western Europe, North and West Asia. It is cultivated commercially in Europe, Former USSR, North Africa Asia, North and South America and New Zealand. It grows widely in various ecological regions of the world. It may be considered as an economic substitute of the field crops, since it has adaptability to a wide range of soil and climatic conditions.

Chamomile is among the widely used aromatic and medicinal plants throughout the world. It has been used in herbal remedies for thousands of years, known in ancient Egypt, Greece, and Rome. The dry flowers of chamomile are also in great demand for use in herbal tea, baby massage oil, for promoting the gastric flow of secretion, and for the treatment of cough and cold. The use of herbal tea preparations eliminated colic in 57% infants. The powder form of chamomile flower can be applied to wounds slow to heal, for skin eruptions, and infections, such as shingles and boils, also for hemorrhoids and for inflammation of the mouth, throat, and the eyes. The aromatic and medicinal value of this plant is for active substances, mainly accumulated in the flowers. The flower contain apigenine which is used as hair color. It also has medicinal properties such as anti-inflammatory, antispasmodic, antiseptic and therapeutic use and antimicrobial. The essential oil of chemomile used as antibacterial, antifungal, as a mild sedative and for digestion problem. In addition to pharmaceutical uses, the oil is extensively used in perfumery, cosmetics, and aromatherapy, and in food industry. Chamomile’s essential oil is also a treatment for malaria and parasitic worm infections, cystitis, colds, and flu. It also recommended by many physicians to treat gastrointestinal spasms and inflammatory diseases of the gastrointestinal tract.

17.1. New variety

- No new variety released in 2020

17.2. Variety under production

17.2.1. Variety:	Chamomile-I [American Type]
17.2.1.1. Year of register:	2013
17.2.1.2. Breeder/Maintainer:	Wondo Genet ARC
17.2.2. Variety:	Chamomile-II [German Type]
17.2.2.1. Year of register:	2013
17.2.2.2. Breeder/Maintainer:	Wondo Genet ARC

18. Lemon verbena (*Aloysia triphylla* L.)

Lemon verbena (*Aloysia triphylla* L.) is a perennial shrub that belongs to the family Verbenaceae. It has got its name due to the fact that it has whorls of three (tri) leaves (phylla) at each node. Lemon verbena is locally known as Lominat. It is native to Argentina, Paraguay, Brazil, Uruguay, Chile, Bolivia and Peru.

The leaves of lemon verbena are the most economical part of the plant that can be used anywhere to add a lemony taste in salads, tea, milk, ice creams and jellies. Likewise, the fragrant flowers are also used in tea and culinary concoctions and the essential oil obtained through distillation of the leaves is used in fragrance industries, food flavoring industries, soft drink industries, and folk medicine. Traditionally it is used as folk remedy in treatments of spasms, cold and fever, asthma, flatulence, colic, diarrhoea, indigestion, insomnia and anxiety and as source of analgesic, anti-inflammatory and/or anti-pyretic remedies. The sedative and anxiolytic activities of lemon verbena infusions were not confirmed in clinic trials. Essential oil of lemon verbena has also antibacterial and antifungal properties. Antibacterial and antioxidant activity have been demonstrated for the essential oils, tea, and tinctures. Due to its diverse uses and applications, it has got open and huge market potential for herbal preparation and extraction of essential oils.

18.1 New variety

- No new variety released in 2020

18.2. Variety under production

18.2.1. Variety:	LOMINAT-I [ሎሚናት]
18.2.1.1. Year of register:	2013
18.2.1.2. Breeder/Maintainer:	Wondo Genet ARC

19. Stevia (*Stevia rebaudiana* Bertoni L.)

Stevia (*Stevia rebaudiana* Bertoni) is a perennial herb that belongs to the family Asteraceae. It is native to sub tropical and tropical South America and Central America. The genus stevia contains about 154 species and the most widely utilized ones are *Stevia eupatoria*, *Stevia ovata*, *Stevia plummerae*, *Stevia salicifolia*, *Stevia serrata* and *Stevia rebaudiana*. From these, *Stevia rebaudiana* is the one with significant sweetening properties. The first commercial cultivation of stevia was started in Paraguay in 1964. Currently it is being cultivated in Japan, Taiwan, Philippines, Hawaii, Malaysia and overall South America for food and pharmaceutical products. The property of the species that called attention to the plant was the intense sweet tests of the leaves and aqueous extracts. Dry leaves of this plant are 30 times sweeter than sugar with Zero calories. The leaves of stevia contain sweetening compounds namely Stevioside, Rebaudioside A, Rebaudioside B and Rebaudioside C and six other compounds which have insulin balancing properties. These sweeteners impart 250 times sweetness than table sugar and 300 times more than sucrose. These glycosides are extracted from the Stevia leaf as all-natural zero caloric sweeteners; hence, stevia has been named as calorie free bio-sweetner of high quality with non-fermentable, non-discoloring, maintain heat stability at 100°C and features a lengthy shelf life attributes.

The product has been added to tea and coffee, cooked or baked goods, processed foods, beverages, it can be safely used in herbal medicines, tonics, for diabetes and in the daily usage products like mouthwashes and toothpastes]. It can be used in chocolates and candies not only to meet the market demand by the diabetes, but also to harvest the added advantages of this herb that it does not encourage tooth decay due to its anti-microbial property, unlike the sugar. In the Pacific Rim countries like China, Korea and Japan, stevia is regularly used in preparation of food and pharmaceutical products and currently stevia production is centered in China with major market in Japan.

No negative clinical reports have papered in any of the countries where stevia is readily available. The present scenario is that people are more inclined towards products advertised with a brand name "all natural and low carbohydrate". Hence, stevia will also have wider potential utilizations. Apart from this stevia is nutrient rich, containing substantial amount of protein, calcium and phosphorous.

19.1 New variety

- No new variety released in 2020

19.2. Variety under production

19.2.1. Variety:	Sekwar [ન્હિ.C]
19.2.1.1. Year of register:	2013
19.2.1.2. Breeder/Maintainer:	Wondo Genet ARC

20. Hibiscus (*Hibiscus sabdariffa* L.)

Hibiscus (*Hibiscus sabdariffa* L.) is a member of the Malvaceae family and an annual dicotyledonous shrub, which grows to a height of about two meters. It has yellow or white with reddish center flower and its leaves have three to five lobules. Although native to India and Malaysia, *H. sabdariffa* is also widely available and must have been carried to Africa in early times. Many parts of the plant are of value with the leaves, seeds and calyces widely used as either food or drug. Many phytochemical constituents and diverse medicinal activities such as Infusions of the leaves or calyces are regarded as diuretic, choleric, febrifugal and hypotensive, decreasing the viscosity of the blood and stimulating intestinal peristalsis decreased the rate of absorption of alcohol and so lessened its effect on the system. In Guatemala, roselle "ade" is a favorite remedy for the after effects of drunkenness.

In the Ayurvedic literature of India, different parts of the plant are recommended as remedy for ailments such as hypertension, pyrexia and liver disorders. In some other traditions, the plant is used as antidote to poisonous chemicals (acids, alkali, pesticides) and venomous mushrooms. *H. sabdariffa* contains higher amount of ascorbic acid compared to orange and mango. It is also rich in riboflavin, niacin, calcium and iron. The water extract of the red calyx of *H. sabdariffa* is widely used in the preparation of fruit drinks because of its unique and appealing characteristic color and flavor. The claimed medicinal benefits of *H. sabdariffa* can be attributed to the presence of anthocyanins, which are the colored product of the flavonoid pathway. The anthocyanins contained in *H. sabdariffa* have been found to possess antioxidant activity, which offer protection against atherosclerosis and cancer. They are also linked with liver-protective and cholesterol activity enhancement. The antioxidant potential has been shown to have many times more activity than common antioxidants such as ascorbate.

20.1 .New variety

- No new varieties under production in 2020

20.2. Varieties under production

20.2.1. Variety:	WG-HIBISCUS-SUDAN
20.2.1.1. Year of release:	2014
20.2.1.2. Breeder/Maintainer:	Wondo Genet ARC
20.2.2. Variety:	WG-HIBISCUS-JAMICA
20.2.2.1. Year of release:	2014
20.2.2.2. Breeder/Maintainer:	Wondo Genet ARC

21. Lavender (*Lavandula angustifolia* L.)

Lavender (*Lavandula angustifolia* L.) is a small, aromatic shrub belongs to the family Lamiaceae. Most lavender originated in the Mediterranean basin, in rocky, calcareous areas and occurs over North Africa, the Mediterranean, Europe and Western India. Lavender was cultivated by the ancient Greeks, Romans and in Elizabethan England. It is an evergreen, fast growing, compact and fragrant. The origins of its name are probably from the Latin word *Lavare* indicating the plant has another use as it means to be washed, and suggests it was regularly used to perfume bathing water. Lavender is a perennial, bushy shrub growing 0,3 to 1,2 m high and the aromatic evergreen leaves are completely opposite and up to 5 cm long. It produces essential oil and the parts used for essential oil distillation are the flowers and leaves. Essential oil from only the flowering tops is of higher quality than oil obtained from the leaves.

Lavender is an incredible and much sought after aromatic plant having significant position in the perfumery trade all over the world. It has multifarious uses and market outlets. Beside its use in fragrance applications, predominantly body care products, Lavender oil and Lavender water has substantial applications in alternative health care practices of aromatherapy. Pure oil can be used without base oil. It can be blended with bergamot, clarysage, jasmine, lemon and rose oil to prepare many formulations for different ailments. It has a remarkable effect on the emotional and mental balance of human being. In addition, it is used in soap making, high-quality perfumes, candles, incense sachets, as a detergent and cleaning agent, as an insect repellent, and also used in bath products such as soap, shampoo, bath oil, lotion, bath salt, repel mice. Its powerful antiseptic properties are able to kill many of the frequent bacteria such as typhoid, diphtheria, streptococcus and pneumococcus, as well as being a powerful antidote to some snake venoms.

It is very useful in the treatment of burns, sunburn, scalds and bites. The essential oil is used in aromatherapy and the leaves are also added to bath water for fragrance and their therapeutic properties.

21.1. New variety

- No new varieties released in 2020

21.2. Varieties under production

21.2.1. Variety:	WG-Lavender-II
21.2.1.1. Year of release:	2018
21.2.1.2. Breeder/Maintainer:	Wondo Genet ARC/EIAR
21.2.2. Variety:	WG-Lavender-I
21.2.2.1. Year of release:	2014
21.2.2.2. Breeder/Maintainer:	Wondo Genet ARC

22. Majoram/Oregano (*Origanum vulgaris* L.)

Oregano (*Origanum vulgare* L.) is a spice, medicinal and aromatic perennial herb that belongs to the member of the Lamiaceae family and has a complex taxonomy. The genus *Origanum* includes 39 species from which, only *O. vulgare* L. is available in Ethiopia. Oregano is native to the Mediterranean Basin. It grows in different areas at wider ranges of ecologies. The climatic life zone for *O. vulgare* reported to be 5–28°C with an annual precipitation of 0.4–2.7 m and a range of soil pH from 4.5–8.7 is appropriate for its growth. It is cultivated and distributed all over Europe, West and Central Asia up to Taiwan. This indicates the economic significance of the crop in diversified societies and communities of the different countries.

Oregano has been a valuable source of natural products for maintaining human health for a long period of time, especially in the last decades. Oregano plays a primary role among culinary herbs in world trade. The use of oregano as medicinal plant is believed to be due to biological properties of *p*-cymene and carvacrol. The fresh leaves and dried herb of oregano as well as essential oil are used medicinally. The essential oil of oregano has antifungal, antibacterial, antioxidant, antihyperglycaemic, antithrombin and cytotoxic activity. Some authors have reported the effectiveness of oregano extracts to reduce lipid oxidation, color loss, and microbial growth in some types of meats. Herbs and extracts of oregano have been added in a variety of foods to improve their sensory characteristics and extend shelf-life.

22.1. New variety

- No new varieties released in 2020

22.2 Varieties under production

22.2.1. Variety:	WG-Oregano
22.2.1.1. Year of release:	2014
22.2.1.2. Breeder/Maintainer:	Wondo Genet ARC

23. Sage (*Salvia officinalis* L.)

The genus Salvia (sage) is one of the largest and the most important aromatic and medicinal genera of the Lamiaceae family and comprises about 900 species, widespread throughout the world. In Flora Europaea 36 taxa are described. *Salvia officinalis*, from Lamiaceae family, is a semi-woody shrub that gets up to 60 cm tall, originates from the Mediterranean region of North Africa, Spain and the Balkans. Modern research has confirmed antiseptic, estrogenic, anti-inflammatory and anti-microbial properties in sage extracts. Very high variability was detected among individual plants, especially in the case of essential oil composition.

Some members of this genus are cultivated to be used as food spices to flavour meats such as pork, sausage and poultry or flavouring agents in perfumery and cosmetics. Several *Salvia* species are used in folk medicine all around the world to treat microbial infections, cancer, malaria, inflammation and to disinfect homes after sickness. Sage (*Salvia officinalis* L.) is one of the most appreciate herbs for its rich essential oil and its plethora of biologically active compounds extensively used in folk medicine.

Essential oil of sage is applied in the treatment of a range of diseases and has been shown to possess antimicrobial, viricidal, cytotoxic, antimutagenic and antifungal activities. As its Latin gender name *Salvia* means „to cure“ and species name „*officinalis*“ means medicinal, it is clear that sage has a historical reputation of promoting health and treating ailments. In Ancient Rome, it was even called the sacred plant. Cholinergic, catecholamine, peptidergic, and hormonal systems have been the focus of great attention in learning and memory studies. The cholinergic system plays an important role in learning, memory, arousal, and attentional processes.

However, pharmacologic properties of traditional cognitive- or memory-enhancing plants have not been widely investigated in the content of current models of Alzheimer's disease. Most traditional plants await proper scientific and medical evaluation for their ability to improve memory retention.

23.1. New variety

- No new varieties released in 2020

23.2 Varieties under production

23.2.1. Variety:	WG-SAGE- I
23.2.1.1. Year of release:	2014
23.2.1.2. Breeder/Maintainer:	Wondo Genet ARC

24. Rosemary (*Rosmarinus officinalis*)

24.1 New variety

- No new varieties released in 2020

24.2 Varieties under production

24.2.1. Variety:	WG-Rosemary-I [Rosem-Hopa/Tesfa] 2015 Wondo Genet ARC
24.2.1.1. Year of release:	
24.2.1.2. Breeder/Maintainer:	
24.2.2. Variety:	WG-Rosemary-II [Rosem-Glossy] 2015 Wondo Genet ARC

24.2.2.1. Year of release:	2015
24.2.2.2. Breeder/Maintainer:	Wondo Genet ARC

24.2.3. Variety:	WG-Rosemary-III [Rosc-Popular] 2015 Wondo Genet ARC
24.2.3.1. Year of release:	
24.2.3.2. Breeder/Maintainer:	

25. Lemon scented eucalyptus (*Eucalyptus citriodora*)**25.1 New variety**

- No new varieties released in 2020

25.2 Varieties under production

25.2.1. Variety:	WG-Shito Bahirzaf-I
25.2.1.1. Year of release:	2015
25.2.1.2. Breeder/Maintainer:	Wondo Genet ARC

26. Vanilla (*Vanilla planifolia*)

Vanilla is a tropical orchid requiring a warm climate with frequent rain. It is native to Central America, southeastern Mexico, the West Indies, and North South America (KAU, 2002 and Kaczynski, 2002). It is a climbing vine that grows naturally on support of forest trees such as *Erythrina spp*; some fruit trees and *Glyricidia*, requires light shade, (two thirds to one-half of normal sunshine). Next to saffron, vanilla is the second most expensive spice in the world, cured beans ranging in price in recent years between US\$100 and US\$500 per kilogram. Popular flavoring substance called vanillin, which is mainly used in flavoring of different food and beverages, and in cosmetics and perfumery industry, condiments and oleoresin. In Ethiopia vanilla showed good adaptability and give yield and quality comparable to that of Indian, Madagascar, Uganda, therefore, it is a potential splices as a cash crop for producers and exporters in Ethiopia. Currently it is well adapted in south west Ethiopia (Tepi and Bebeka) where there is high humidity and high rainfall condition.

26.1. New variety

- No new varieties released in 2020

26.2 Varieties under production

26.2.1. Variety:	Yeki 1 (Van 1/1993)
26.2.1.1. Year of release:	2015
26.2.1.2. Breeder/Maintainer:	Tepi National Spices Research Center/TNSRC/

27. Palmarosa (*Cymbopogon martinii* L.)**27.1. New variety**

- No new varieties released in 2020

27.2. Varieties under production

27.2.1. Variety name:	WG-Tejsar-I (C005)
27.2.1.1. Year of release:	2017
27.1.1.2. Breeder/ maintainer:	Wondo Genet ARC/EIAR
27.1.2 Variety name:	WG-Tejsar-II (C011)
27.1.2.1. Year of release:	2017
27.1.2.2. Breeder/ maintainer:	Wondo Genet ARC/EIAR

28. Basil (*Ocimum basilicum* L.)

Basil (*Ocimum basilicum* L.), a member of the *Lamiaceae* family is an annual herb which grows in several regions around the world. The genus *Ocimum* includes around 30 plant species from tropical and subtropical areas, which are much differentiated in respect of morphological and chemical features (Nurzyńska-Wierdak 2001, Vina & Murillo 2003, Telci *et al.* 2006). The plant probably originated in India, Afghanistan, Pakistan, Northern India and Iran, and now is cultivated worldwide. Traditionally, basil has been extensively utilized in food as a flavoring agent, and in perfumery and medical industries (Telci *et al.*, 2006).

Among the species of the genus, *Ocimum basilicum* L. (sweet basil) is the major essential oil crop around the world, cultivated in many countries including Ethiopia. Sweet basil is used as a spicy and medicinal herb, and the aromatic character of each type is determined by genotype and depends on the major chemical compounds of essential oil (Telci *et al.* 2006, Koba *et al.* 2009). The essential oil constituents vary among sweet basil cultivars, and the main ones are linalool, methyl chavicol, eugenol, 1,8-cineole, geranial, neral, methyl cinnamate (Nurzyńska-Wierdak 2001, 2007a, Koba *et al.* 2009, Singh *et al.* 2010). Basil is a popular herb mainly grown for the fresh market or for its aromatic leaves which are dried and used as a spice or flavoring.

In Ethiopia, basil is locally known as “Besso bila” in Amharic, “sikakime” or “duguno” in Afan oromo, “seseg” in Tigrigna, “Gimenja“ in Hadiya, , “Kepowa” in Wolayita and different Ethiopian ethnic group has different name for sweet basil, (Hadush *et al.*, 2015, Desta *et al.*, 2017). Generally sweet basil widely grown as home garden plant throughout the country for its multipurpose use such as medicinal value, flavoring food, spice and blended with different spices for local consumption and its flower is a good source of nectar for the honeybee because of high yield of sugars and long flowering period (Chwil, 2007).

28.1. New variety

- No new varieties released in 2020

28.2 .Varieties under production

28.2.1 Variety:

WG- Sweet basil –V
(Acc.code 05KAM)

28.2.1.1 Year of release:

2019

28.2.1.2 Breeder/Maintainer:

Wondo Genet ARC/EIAR

28.2.2 Variety:

WG- Sweet basil –II
(Acc.code 02WOL)

28.2.2.1 Year of release:

2019

28.2.2.2 Breeder/Maintainer:

Wondo Genet ARC/EIAR

Group VI. Fruit Crops**1. Banana (*Musa paradisiaca* var. *sapiertum*)**

Banana is one of the most important tropical fruits. Its origin is the humid tropics of India or Malaysia and it has spread all over the tropical world. It is like wise a very ancient plant, possibly the world's oldest cultivated crop.

The banana is one of the tallest of the herbaceous plants (3.5 - 7.5m). There are two types of banana, namely dessert and cooking types. Banana flowers in about 9-12 months and the fruits mature in about 3-4 months. Hence the crop would be ready for harvest in 12 - 16 months after planting depending on the variety. The yield is roughly 30 - 40 tons/ha. The typical growing regions for banana are tropical-humid lowlands. Based on meteorological data of the major banana producing locations, the effective average rainfall and temperatures are 100 mm and 80°F each month.

Bananas have been cultivated for several years as a garden plant in Ethiopia. As in some other tropical and sub-tropical regions, bananas are produced by: small plantations in home gardens owned by smallholder farmers - especially in the South-Western and Western provinces, medium-sized plantations of not more than 10 ha supplying local consumers, and relatively large plantations above 20 ha developed to supply export markets.

The smallholder farmers produce over 35% of the total produce, which are grown from degenerated clones of low yield and quality. Modern banana plantations were started in Ethiopia at the beginning of this century. Unlike the smallholder farmers' garden these larger plantations were set up in arid irrigated regions. Main banana producing regions are S.N.N.P.R, Oromia and Amhara regions.

During **2019/20** production season about **67,387.20** hectares of land has been covered with banana and the estimated annual banana production is about **5,394,426.48** quintals.

1.1 New varieties

- No new variety released in 2020

1.2 Varieties under production

1.2.1 Variety:	Dinkua-1	1.2.7 Variety:	Nijiru
1.2.1.1 Year of release:	2019	1.2.7.1 Year of release:	2006
1.2.1.2 Breeder/Maintainer:	MARC/EIAR	1.2.7.2 Breeder/Maintainer:	MARC/EIAR
1.2.2 Variety:	Lady Finger	1.2.8 Variety:	Matooke
1.2.2.1 Year of release:	2019	1.2.8.1 Year of release:	2006
1.2.2.2 Breeder/Maintainer:	MARC/EIAR	1.2.8.2 Breeder/Maintainer:	MARC/EIAR
1.2.1 Variety:	Williams-1	1.2.9 Variety:	Poyo
1.2.1.1 Year of release:	2006	1.2.9.1 Year of registration:	2006
1.2.1.2 Breeder/Maintainer:	MARC/EIAR	1.2.9.2 Breeder/Maintainer:	MARC/EIAR
1.2.2 Variety:	Grand Nain	1.2.10 Variety:	Giant Cavandish
1.2.2.1 Year of release:	2006	1.2.10.1 Year of registration:	2006
1.2.2.2 Breeder/Maintainer:	MARC/EIAR	1.2.10.2 Breeder/Maintainer:	MARC/EIAR
1.2.3 Variety:	Robusta	1.2.11 Variety:	Dwarf Cavandish
1.2.3.1 Year of release:	2006	1.2.11.1 Year of registration:	2006
1.2.3.2 Breeder/Maintainer:	MARC/EIAR	1.2.11.2 Breeder/Maintainer:	MARC/EIAR
1.2.4 Variety:	Butuzua	1.2.12 Variety:	Ducasse Hybrid
1.2.4.1 Year of release	2006	1.2.12.1 Year of registration:	2006
1.2.4.2 Breeder/Maintainer:	MARC/EIAR	1.2.12.2 Breeder/Maintainer:	MARC/EIAR
1.2.5 Variety:	Cardaba		
1.2.5.1 Year of release:	2006		
1.2.5.2 Breeder/Maintainer:	MARC/EIAR		
1.2.6 Variety:	Kitawira		
1.2.6.1 Year of release:	2006		
1.2.6.2 Breeder/Maintainer:	MARC/EIAR		

2. Mango (*Mangifera indica* L.)

Mango is a fruit which is indigenous to the Indian subcontinent,[1] belonging to the genus *Mangifera*, consisting of numerous species of tropical fruiting trees in the flowering plant family Anacardiaceae. *Mangifera indica* L. is the only mango tree commonly cultivated in many tropical and subtropical regions, and its fruit is distributed essentially world-wide. Mango trees grow 35–40 m tall, with a crown radius of 10 m. The mango tree is long-lived, as some specimens still fruit after 300 years. In deep soil, the taproot descends to a depth of 6 m and the profuse, wide-spreading feeder roots also send down many anchor roots, which penetrate several feet of soil. The flowers are produced in terminal panicles 10–40 cm long; each flower is small and white with five petals 5–10 mm long. The fruit takes three to six months to ripen. The ripe fruit is variable in size and color. Cultivars are variously yellow, orange, red or green, and carry a single flat, oblong pit that can be fibrous or hairy on the surface, and which does not separate easily from the pulp. Mango is a fruit of frost free tropical and warmer sub-tropical climates. Nowadays it is produced more than any other fruit crop around the world.

In Ethiopia, it is mainly produced in the upper Awash valley with altitudes ranging from 1000-1500 m.a.s.l. and also in Dedessa, Assossa, Gambella, Arba Minch and Harrar. During **2019/20** production season, the total area under mango plantations is about **16,363.48** hectares of land and the production is estimated to be **1,053,793.75** quintals. A healthy and well-managed tree can stay for about 100 years, but giving good yield every two years for as long 40 years.

Mango can best be produced on a non-fertile drained soil of PH 5.5-7.5. For good flowering and then productivity, however, the tree needs 3 months of dry period. The edible part (mesocarp) has a 60-75% share of total fruit weight, and is rich in starch, protein and vitamins. It can be used in the form of juice, squash, jams, jellies, prickles, chutneys; culinary. Fruit butter can also be prepared from the stems of a mango tree.

2.1 New varieties

- No new variety released in 2020

2.2 Varieties under production

2.2.1. Variety:	Tommy Atkins
2.2.1.1 Year of release:	2013
2.2.1.2 Breeder/maintainer:	Melkasa ARC
2.2.2. Variety:	Kent
2.2.2.1. Year of release:	2013
2.2.2.2 .Breeder/maintainer:	Melkasa ARC
2.2.3. Variety:	Keitt
2.2.3.1. Year of release:	2013
2.2.3.2 Breeder/maintainer:	Melkasa ARC
2.2.4. Variety:	APPLE MANGO
2.2.4.1 Year of release:	2007
2.2.4.2 Breeder/maintainer:	MARC/EIAR

3. Pineapple (*Ananas comosus*)

Pineapple is indigenous to South America, the natives of southern Brazil and Paraguay spread the pineapple throughout South America, and it eventually reached the Caribbean.

The pineapple is an herbaceous short-lived perennial plant which grows to 1.0 to 1.5 meters tall. The plant only produces one fruit and then dies. Commercially suckers that appear around the base are cultivated. It has 30 or more long, narrow, fleshy, trough-shaped leaves with sharp spines along the margins that are 30 to 100 centimeters long, surrounding a thick stem. In the first year of growth the axis lengthens and thickens, bearing numerous leaves in close spirals. After 12 to 20 months the stem grows into a spike-like inflorescence up to 15 cm long with over 100 spirally arranged, trimerous flowers, each subtended by a bract. Flower colours vary, depending on variety, from lavender, through light purple to red.

The ovaries develop into berries which coalesce into a large, compact, multiple accessory fruit. The fruit of a pineapple is arranged in two interlocking helices, eight in one direction, thirteen in the other, each being a Fibonacci number. In commercial farming, flowering can be induced artificially, and the early harvesting of the main fruit can encourage the development of a second crop of smaller fruits. Once removed during cleaning, the top of the pineapple can be planted in soil and a new plant will grow. Slips and suckers are planted commercially. Pineapple is eaten fresh or canned or juiced.

The popularity of the pineapple is due to its sweet-sour taste containing 15% sugar and malic and citric fruit acids. It is also high in vitamin B1, B2, B6 and C. Its protein-digesting enzyme bromelain seems to help digestion at the end of a high protein meal.

3.1 New varieties

- No new variety released in 2020

3.2 Varieties under production

3.2.1 Variety :	Tafache ጥፋች (MD 2)
3.1.1.1 Year of release:	2017
3.1.1.2 Breeder/Maintainer:	Jimma ARC/EIAR
3.2.2 Variety:	Smooth cayenne
3.2.2.1 Year of Registration:	2008
3.2.2.2 Breeder/Maintainer:	Jimma ARC/EIAR

4. Wine grape (*Vitis vinifera*)

Grape vines (*Vitis vinifera*) belong to the genus *Vitis*. The Genus includes several species which produce palatable fruits and by-products, primarily wine. Grapes can be in the form of table grapes and raisins or dried grapes which are equally important in the international market.

Grape vine is believed to have originated in Asia-Minor between the Caspian and Black Sea areas. Today there are many cultivated varieties of grape vine growing in many parts of the world. Few of these are of primary importance in Ethiopia for the production of wine. Some of the prominent varieties are briefly described.

Sangiovese: A leading wine grapes of Italy. It is widely cultivated in Ethiopia since time immemorial (probably introduced by the Italians during their occupation). Bunches are small to medium, winged and well filled to compact. Berries are medium to oval with heavy bloom.

Chenin Blanc: the most predominant variety grown at the Upper Awash Agro-Industry Enterprise. Vines are vigorous and productive. Bunches are large medium, long conical, compact. Berries are medium, oval with tough skin.

Grenache noir: A very important variety in Southern Europe, California and Australia Berries have heavy bloom and vary in color from reddish pink to black depending on crop level.

Grenache Hamburg: Bunches are small to medium compact. Berries are larger, medium, and round.

Cardinal: Vigorous and productive vine. Bunches are large medium, conical, loose to compact. Berries are very large, round to short oval red cherry.

Thompson Seedless: Predominantly grown for raisin production of the world (50%). It is the principal raisin variety and the leading table grapes. Bunches are large, shouldered, long conical, well filled. Berries are medium sized, firm and tender in texture and sweet.

4.1 New varieties

- No new variety released in 2020

4.2 Varieties under production

4.2.1 Variety:	Flame Toky
4.2.1.1 Year of release:	2019
4.2.1.2 Breeder/Maintainer:	D/Zeit ARC
4.2.2 Variety:	Awash Nigest
4.2.2.1 Year of release:	2019
4.2.2.2 Breeder/Maintainer:	D/Zeit ARC
4.2.3 Variety:	Muscat of Alexander
4.2.3.1 Year of release:	2013
4.2.3.2 Breeder/Maintainer:	D/Zeit ARC
4.2.4 Variety:	Black Corinth
4.2.4.1 Year of release:	2013
4.2.4.2 Breeder/Maintainer:	D/Zeit ARC
4.2.5 Variety:	Thompson
4.2.5.1 Year of release:	2013
4.2.5.2 Breeder/Maintainer:	D/Zeit ARC
4.2.6 Variety:	Grenache noir
4.2.6.1 Year of release:	2004
4.2.6.2 Breeder/Maintainer:	DZARC/EIAR
4.2.7 Variety:	Grenache Blanch
4.2.7.1 Year of release:	2004
4.2.7.2 Breeder/Maintainer:	DZARC/EIAR
4.2.8 Variety:	Ugni Blanc
4.2.8.1 Year of release:	2004
4.2.8.2 Breeder/Maintainer:	DZARC/EIAR

4.2.9 Variety:	Black Hamberg
4.2.9.1 Year of release:	2004
4.2.9.2 Breeder/Maintainer:	DZARC/EIAR
4.2.10 Variety:	Cannonano
4.2.10.1 Year of release:	2004
4.2.10.2 Breeder/Maintainer:	DZARC/EIAR
4.2.11 Variety:	Dodom Alietico
4.2.11.1 Year of release:	2004
4.2.11.2 Breeder/Maintainer:	DZARC/EIAR

5. Avocado (*Persea americana* M.)

Avocados were first cultivated in South America with later migration to Mexico. It was believed that a Mayan princess ate the very first avocado and that it held mystical and magical powers. European sailors traveling to the New World used avocados as their form of butter. Avocados were first seen in the United States in the early 1800's. California is currently the largest producer of avocados stateside. There are more than 80 varieties, with the "Hass" variety dominating the crop share. A single mature avocado tree can produce more than 400 pieces of fruit in a year.

Avocados are loaded with nutrients such as dietary fiber, vitamin B6, vitamin C, vitamin E, potassium, magnesium, and folate. They're also cholesterol and sodium free. Avocados contain 60% more potassium per ounce than bananas. This fruit is an excellent source of monounsaturated fat.

During **2019/20** production season, the total area under production may reach **20,907.77** hectares and the production is estimated to be over **1,044,919.23** quintals.

5.1 New varieties

- No new variety released in 2020

5.2 Varieties under production

5.2.1. Variety:	Hass
5.2.1.1 Year of Registration:	2008
5.2.1.2 Breeder/ maintainer:	Melkassa Research Center
5.2.2 Variety:	Ettinger
5.2.2.1 Year of Registration:	2008
5.2.2.2 Breeder/ maintainer:	Melkassa Research Center
5.2.3. Variety:	Pinkerton
5.2.3.1 Year of Registration:	2008
5.2.3.2 Breeder/maintainer:	Melkassa Research Center
5.2.4 Variety:	Nabal
5.2.4.1 Year of Registration:	2008
5.2.4.2 Breeder/maintainer:	Melkassa Research Center
5.2.5 Variety:	Fuerte
5.2.5.1 Year of Registration:	2008
5.2.5.2 Breeder/maintainer:	Melkassa Research Center
5.2.6 Variety:	Bacon
5.2.6.1 Year of Registration:	2008
5.2.6.2 Breeder/maintainer:	Melkassa Research Center

6. *Ziziphus (kurkura)*(*Ziziphus jujuba*)

6.1. New varieties

- No new variety released in 2020

6.2. Varieties under production

6.2.1. Variety:	SEB
6.2.1.1 Year of release:	2013
6.2.1.2 Breeder/Maintainer:	World Vision/ MARC/EIAR
6.2.2. Variety:	Kethely
6.2.2.1 Year of release:	2013
6.2.2.2. Breeder/Maintainer:	World Vision/ MARC/EIAR

7. Fig (*Ficus carica* L.)

7.1 New varieties

- No new variety released in 2020

7.2 Variety under production

7.2.1 Variety:	Brown Turkey
7.2.1.1 Year of release:	2012
7.2.1.2 Breeder/Maintainer:	World Vision Ethiopia/ MARC/EIAR
7.2.2 Variety:	Yellow type
7.2.2.1 Year of release:	2012
7.2.2 .2. Breeder/Maintainer:	World Vision Ethiopia/ MARC/EIAR

8. Papaya (*Carica papaya* L.)**8.1 New variety**

- No new variety released in 2020

8.2. Variety under production

8.2.1. Variety:	Braz-HS1 (CMF 078-L56)
8.2.1.1. Year of release:	2015
8.2.1.2. Breeder/Maintainer:	Melkassa ARC/EIAR
8.2.2. Variety:	Koka-HM1 (KK 103-L446)
8.2.2.1. Year of release:	2015
8.2.2.2. Breeder/Maintainer:	Melkassa ARC/EIAR
8.2.3. Variety:	Meki-HL1 (MK 121-L516)
8.2.3.1. Year of release:	2015
8.2.3.2. Breeder/Maintainer:	Melkassa ARC/EIAR

9. Peach (*Prunus persica*)**9.1 New variety**

- No new variety released in 2020

9.2. Variety under production

9.2.1. Variety:	90-19H
9.2.1.1. Year of release:	2015
9.2.1.2. Breeder/Maintainer:	Holetta and Kulumssa Agricultural Research Centers
9.2.2. Variety:	Tropic beauty
9.2.2.1. Year of release:	2015
9.2.2.2. Breeder/Maintainer:	Holetta and Kulumssa Agricultural Research Centers

10. Date palm (*Phoenix dactylifera* L)

Date palm (*Phoenix dactylifera* L) is well known as a cultivated and/or wild grown fruit crop in the drier regions of Ethiopia such as Afar, Dire dawa, Somali, Gambella, and Benushangul Gumuz. Date Palm plays an important nutritional, economical, religion, cultural and ecological role in desert and semi desert agro-ecologies of Ethiopia. It is also historically known that people inhabiting in deserts live on dates and milk without suffering any nutritional problem. Despite Ethiopia has ample potential, national date palm production and productivity is insignificant to satisfy the demand of the population and it has imported date palm fruit from abroad 2585 tons of dates at costs in excess of two million USD. The trend showed that there is an increment of date palm import year to year. This is due to lack of adequate date palm improved technologies in the country.

10.1 New variety

- No new variety released in 2020

10.2. Variety under production

10.2.1 Variety name:	Berhee
10.2.1.1. Year of release:	2017
10.2.1.2. Breeder/Maintainer:	Werer ARC/EIAR
10.2.2 Variety name:	Medjool
10.2.2.1. Year of release:	2017
10.2.2.2. Breeder/Maintainer:	Werer ARC/EIAR

Group VII. Forage and Pasture Crops

Feed shortage and primitive type of feeding are the major limiting factors in animal production. In the high lands and semi-high lands of the country, it is estimated that natural pasture accounts for 80% and the agricultural related industrial by products accounts for 20% of the annual forage production while in the low land regions natural pasture is the sole forage source.

In order to get highest animal production (product), it is important to use improved forage plants and the industrial and agricultural by products that have highest feed value.

1. Tree lucerne (*Chamaecytisus* spp)**1.1 New varieties**

- No new variety released in 2020

1.2 Varieties under production

1.2.1. Variety:	Lattuu (CI-15052) Tagasaste (<i>Chamaecytisus palmensis</i>)
1.2.1.1 Year of release:	2018
1.2.1.2. Breeder/Maintainer:	Holetta ARC/EIAR
1.2.2. Variety:	-- (<i>Chamaecytisus prolifer</i>)
1.2.2.1 Year of release:	1992
1.2.2.2. Breeder/Maintainer:	HARC/EIAR

2. Elephant grass (*Pennisetum purpureum*)**2.1 New varieties**

- No new variety released in 2020

2. 2 Varieties under production

2.2.1 Variety name:	Maralfalfa
2.2.1.1 Year of release:	2018
2.2.1.2. Breeder/Maintainer:	EFORE AGRO S.L, Holetta and Werer ARC /EIAR
2.2.2 Variety name:	Zehone-02 (Acc-16791)
2.2.2.1 Year of release:	2017
2.2.2.2. Breeder/Maintainer:	Holetta ARC/EIAR

2.2.3 Variety name:	Zehone-03 (Acc-16819)
2.2.3.1 Year of release:	2017
2.2.3.2 Breeder/Maintainer:	Holetta ARC/EIAR
2.2.4 Variety:	ILCA-16984
2.2.4.1 Year of release:	1984
2.2.4.2 Breeder/Maintainer:	ILRI

3. Rhode (*Chloris gayana*)**3.1 New varieties**

- No new variety released in 2020

3. 2 Varieties under production

3.2.1 Variety:	Massaba
3.2.1.1 Year of release:	1984
3.2.1.2. Breeder/Maintainer:	HARC/EIAR

4. Panicum (*Panicum colloratum*)**4.1 New varieties**

- No new variety released in 2020

4. 2 Varieties under production

4.2.1 Variety:	Colloratum
4.2.1.1 Year of release:	1984
4.2.1.2. Breeder/Maintainer:	HARC/EIAR

5. Dolicos lablab (*Lablab purpureus*)**5.1. New varieties**

- No new variety released in 2020

5.2 Varieties under production

5.2.1 Variety:	Doli-I (ILRI -11640)
5.2.1.1 Year of release:	2019
5.2.1.2 Breeder/Maintainer:	Melkassa ARC/EIAR/
5.2.2 Variety:	Doli-II (ILRI-147)
5.2.2.1 Year of release:	2019
5.2.2.2 Breeder/Maintainer:	Melkassa ARC/EIAR/
5.2.3 Variety:	Gebis -17 (ILRI-Acc # 14417)
5.2.3.1 Year of release:	2016
5.2.3.2 Breeder/Maintainer:	Bako ARC/OARI
5.2.4 Variety:	Beresa-55 (ILRI-Acc # 14455)
5.2.4.1 Year of release:	2016
5.2.4.2 Breeder/Maintainer:	Bako ARC/OARI
5.2.5 Variety:	-
5.2.5.1 Year of release:	1984
5.2.5.2 Breeder/Maintainer:	HARC/EIAR

6. Phalaries (*Phalaris aquatica*)**6.1 New varieties**

- No new variety released in 2020

6.2 Varieties under production

6.2.1 Variety:	Sirosa
6.2.1.1 Year of release:	1982
6.2.1.2 Breeder/Maintainer:	HARC/EIAR

7. Trifolium (*Trifolium quinquefolium*)**7.1 New varieties**

- No new variety released in 2020

7.2 Varieties under production

7.2.1 Variety:	---
7.2.1.1 Year of release:	1976
7.2.1.2 Breeder/Maintainer:	HARC/ EIAR

8. Vetch (*Vicia spp*)**8a. Vetch (*Vicia dasycarpa*)****8a.1 New varieties**

- No new variety released in 2020

8a.2 Varieties under production

8a.2.1 Variety:	Lana
8a.2.1.1 Year of release:	1976
8a.2.1.2 Breeder/Maintainer:	HARC/ EIAR

8b. Vetch (*Vicia villosa L.*)**8b.1 New varieties**

- No new variety released in 2020

8b.2 Varieties under production

8b.2.1 Variety:	Lalisa (IG.No 6792DLot-2)
8b.2.1.1 Year of release:	2011
8b.2.1.2 Breeder/Maintainer:	SARC/OARI

8c. Vetch (*Vicia sativa* L.)**8c.1 New variety**

- No new variety released in 2020

8c. 2 Varieties under production

8c.2.1 Variety:	ICARDA-61509
8c.2.1.1 Year of release:	2012
8c.2.1.2 Breeder/Maintainer:	HARC/EIAR
8c.2.2.Variety:	Gebisa (IG.No 62632)
8c.2.2.1 Year of release:	2011
8c.2.2.2 Breeder/Maintainer:	SARC/OARI

8d. Vetch (*Vicia narbonensis*)**8d. 1 New varieties**

- No new variety released in 2020

8d. 2 Varieties under production

8d.2.1.Variety:	Abdetta (IG.No 118)
8d.2.1.1 Year of release:	2011
8d.2.1.2 Breeder/Maintainer:	SARC/OARI

9. Cow pea (*Cowpea unguiculata*)**9.1 New varieties**

- No new variety released in 2020

9.2 Varieties under production

9.2.1. Variety:	Adulala (ILRI - 9352)
9.2.1.1. Year of release:	2018
9.2.1.2. Breeder (Maintainer):	Melkassa ARC/EIAR

9.2.2 Variety:	Melka (ILRI - 9334)
9.2.2.1 Year of release	2018
9.2.2.2 Breeder/ Maintainer	Melkassa ARC/EIAR
9.2.3. Variety:	Temesgen (ተመሳሳሪያ) (12668)
9.2.3.1. Year of release:	2014
9.2.3.2. Breeder (Maintainer):	Humera ARC (TARI)
9.2.4 Variety:	Sewinet (ሸዕስኬት) (ITS 93 KD 596)
9.2.4.1 Year of release	2009
9.2.4.2 Breeder/ Maintainer	Pawe ARC

10. Andropogon (*Andropogon gayanus*)**10.1 New varieties**

- No new variety released in 2020

10.2 Varieties under production

10.2.1 Variety:	Dirki Ayifera (Andropogon gayanus 12465)
10.2.1.1 Year of release:	2009
10.2.1.2 Breeder/ Maintainer:	Pawe ARC

11. Pigeon pea (*Cajanus cajan* L.)**11.1 New varieties**

- No new variety released in 2020

11.2 Varieties under production

11.2.1. Variety:	Degaga, Maitsebri-Bako, ILRI#11575
11.2.1.2. Year of released:	2017
11.2.1.3. Breeder/maintainer:	Shire-Maitsebri (TARI) and Bako ARC/OARI
11.2.2. Variety:	Degebas, ILRI#16527
11.2.2.2. Year of released:	2017
11.2.2.3. Breeder/maintainer:	Bako ARC/OARI
11.2.3. Variety:	Kibret (ክብረት) (11555)
11.2.3.1. Year of release:	2014
11.2.3.2. Breeder /Maintainer:	Humera ARC (TARI)
11.2.4. Variety:	Tsegab (ቴሬብ) (11566)
11.2.4.1. Year of release:	2014
11.2.4.2. Breeder /Maintainer:	Humera ARC (TARI)
11.2.5 Variety:	DURSA (ICEAP87091)
11.2.5.1 Year of release	2009
11.2.5.2 Breeder/ Maintainer	EIAR/MARC

12. Oats (*Avena sativa*)

12.1 New varieties

12.1.1. Variety name: Bareda (Acc.5450)

12.1.1.1. Agronomic & morphological characteristics

▪ Adaptation area:	Mechara, Gelemso, Chiro, Tulo and similar agro-ecologies
○ Altitude (m.a.s.l):	1550-2400
○ Rain fall (mm):	303 - 902
▪ Seed rate (kg/ha):	100
▪ Spacing (cm):	30 between row and sowing with drilling
▪ Planting date:	Early July
▪ Fertilizer rate (kg/ha):	
○ NPS(P2O5):	19
○ N:	46
▪ Fertilizer application time:	At the time of sowing
▪ Fertilizer application method:	Row drilling
▪ Days to flowering (days):	56-90
▪ Days to Maturity (days):	87-155
▪ Plant height(cm):	78-138
▪ Seed color:	Pale brown
▪ Leaf to stem ratio:	0.66
▪ 1000 seed weight (g):	-
▪ Harvest Index:	0.79
▪ Crop pest reaction: (1-5)*	-
▪ Fodder quality (g/kg DM)::	
○ CP (%):	10.33
○ IVDMD (%):	57.75
○ Ash (%):	10.58
○ NDF (%):	74.15
○ ADF (%):	65.38
○ ADL(%):	7.82
▪ Yield (qt/ha)	
○ Research field:	27-39
○ Farmers“field:	16-32
12.1.1.2. Year of release:	2020
12.1.1.3. Breeder/ maintainer:	Mechara ARC/ORARI/

12.2 Varieties under production

12.2.1. Variety name:	Was (ዋኑ) (CI-1506)
12.2.1.1. Year of release:	2019
12.2.1.2. Breeder/ maintainer:	HARC/EIAR
12.2.2. Variety:	Walqaa (ዋልቃ) (SRCP X 80 Ab 2596)
12.2.2.1. Year of release:	2019
12.2.2.2.. Breeder/Maintainer:	HARC/EIAR
12.2.3. Variety name:	Bate (ILRI 5453)
12.2.3.1. Year of release:	2018
12.2.3.2. Breeder/ maintainer:	Bako ARC/ORARI/
12.2.4. Variety:	SRCPX80Ab2806
12.2.4.1. Year of release:	2015
12.2.4.2.. Breeder/Maintainer:	HARC/EIAR
12.2.5. Variety:	SRCPX80Ab2291
12.2.5.1. Year of release:	2015
12.2.5.2.. Breeder/Maintainer:	HARC/EIAR
12.2.6 Variety:	CI-8251
12.2.6.1 Year of release:	2013
12.2.6.2 Breeder/Maintainer:	HARC/EIAR
12.2.7 Variety:	Bonsa (IAR-P1.79AB384)
12.2.7.1 Year of release:	2011
12.2.7.2 Breeder/Maintainer:	SARC/OARI
12.2.8 Variety:	Bona-bas (IAR-P1.1660)
12.2.8.1 Year of release:	2011
12.2.8.2 Breeder/Maintainer:	SARC/OARI
12.2.9 Variety:	CI – 8237
12.2.9.1 Year of release:	1976
12.2.9.2 Breeder/Maintainer:	HARC/ EIAR

13. Sesbania (*Sesbania* spp)

13.1 New variety

- No new varieties released in 2020

13.2 Varieties under production

13.2.1 Variety:	DZF- 336 <i>Sesbaia dummeri</i> Phillips & Hutch
13.2.1.1 Year of release:	2018
13.2.1.2 Breeder/Maintainer:	Debreziet, Wondogenet, Werer ARC/EIAR/
13.2.2 Variety:	DZF - 405 <i>Sesbania sesban</i> Merr. Var.Nubica Chiov. 2018
13.2.2.1 Year of release:	Debreziet, Wondogenet, Werer ARC/EIAR/
13.2.2.2 Breeder/Maintainer:	Acc. No. ILRI 0342 (Maitsebri) <i>Sesbania</i> <i>machrantha</i> 2018
13.2.3 Variety:	Shire-Maitsebri ARC/TRARI
13.2.3.1 Year of release:	DZF 092
13.2.3.2 Breeder/Maintainer:	2012
13.2.4 Variety:	DZARC/EIAR
13.2.4.1 Year of release:	
13.2.4.2 Breeder/Maintainer:	

14. Pennisetum polystachion

14.1. New variety

- No new varieties released in 2020

14.2. Variety under production

14.2.1. Variety:

Nechsare (Chefer beko)
(નેચસારે (ચેફર બેકો))

14.2.1.1. Year of release:

2014

14.2.1.2.. Breeder/Maintainer:

Pawe ARC/EIAR/

15. Panicum maximum

15.1. New variety

- No new varieties released in 2020

15.2. Varieties under production

15.2.1. Variety:

Degun geziya
(ડેગુન ગેઝિયા (ન્યાન્યા))

15.2.1.1. Year of release:

2014

15.2.1.2.. Breeder/Maintainer:

Pawe ARC/EIAR/

16. Lupin (*Lupinus spp.*)

Wild lupines are believed to be originated and are concentrated in two large areas: The old world or Mediterranean region and the new world or Americas. Because of the diverse species, the genus Lupinus is found widely distributed in different parts of the world in several agro climatic conditions; from the sub-arctic climate, through Mediterranean and semi-desert climates, to the highlands of East Africa, Mexico, and finally the sub-tropical lowlands of eastern South America and south-eastern USA. Among the four large seeded annual lupin species, three of the species, i.e. white lupin, blue lupin and yellow lupin, have originated in the Mediterranean basin.

White Lupin is one of the common pulse crops grown in Ethiopia. It is an ancient traditional multipurpose crop being cultivated particularly in the North-western part of Ethiopia. In Ethiopia lupin is believed to have originated and introduced into Ethiopia from Egypt. It is also believed that the Amharic local name of lupin in Ethiopia, Gibto, has been derived from the Amharic name of Egypt, Gibtsi. It is produced by small holder farmers in two regional states of Ethiopia; Amhara and BenishangulGumuz, the former being the largest producer. In 2019/20 cropping season, the total area under cultivation is estimated to be **19,248.83** ha of land from which **360,456.53** quintals are produced

The crop is known as a very easy crop to grow with a relatively high yield and minimal agronomic practice. It grows from the warm mid-altitude areas of South Gondar up to the cool and humid high-altitude areas of West Gojjam.

On the other hand, 'sweet' lupin (*Lupinus angustifolius*), which is safe for human consumption as an important source of protein, because of low alkaloid content, is not grown in Ethiopia.

Introducing hardy crops like „Sweet“ into soil acidity prone areas where other legume crops cannot be grown is considered as an important approach to combat the protein-malnutrition and for enhancing soil fertility restoration

16.1. New varieties

- No new varieties released in 2020

16.2 Varieties under production

16.2.1. Variety: Welela (SW-001)

16.2.1.1. Year of release: 2016

16.2.1.2. Breeder seed maintainer: Holetta ARC/EIAR

16.2.2. Variety: Sanabor

16.2.2.1. Year of release: 2014

16.2.2.2. Breeder seed maintainer: ARARI and Andassa ARC

16.2.3. Variety: Vitabor

16.2.3.1. Year of release: 2014

16.2.3.2. Breeder seed maintainer: ARARI and Andassa ARC

17. Alfalfa (*Medicago sativa*)**17.1. New variety**

- No new varieties released in 2020

17.2. Varieties under production

17.2.1. Variety:: Alfalfa-1086

17.2.1.1. Year of release: 2016

17.2.1.2. Breeder/Maintainer: ELFORA Agro-Industries Plc/HARC/EIAR

7.2.2. Variety:: Alfalfa-ML-99

17.2.2.1. Year of release: 2016

17.2.2.2. Breeder/Maintainer: ELFORA Agro-Industries Plc/HARC/ EIAR

17.2.3. Variety:: Alfalfa DZF-552

17.2.3.1. Year of release: 2014

17.2.3.2. Breeder/Maintainer: DZARC/EIAR/

18. Pennisetum sphacelatum**18.1. New variety**

- No new varieties released in 2020

18.2. Varieties under production

18.2.1. Variety: Shebela sar

18.2.1.1. Year of release: 2014

18.2.1.2. Breeder/Maintainer: DZARC/EIAR/

19. Perennial grass**19.1. New variety**

- No new varieties released in 2020

19.2. Varieties under production

19.2.1 Variety:

Sari-Gebremariam
(Local grass) Genus-
Hyparrhenia
2018
Axum ARC/TARI

19.2.1.1 Year of release:

19.1.1.2 Breeder/Maintainer:

19.2.2 Variety:

Mulato-II (CIAT 36087)
Brachiaria hybrid cv.
mulato -II
2018
Melkassa ARC/EIAR

19.2.3 Variety:

19.2.3.1 Year of release:
2017
19.2.3.2 Breeder/Maintainer:
Humera ARC/TARI

19.2.4 Variety:

19.2.4.1 Year of release:
2017
19.2.4.2 Breeder/Maintainer:
Humera ARC/TARI

19.2.5. Variety:

19.2.5.1. Year of release:
2015
19.2.5.2.. Breeder/Maintainer:
DZARC/EIAR/

19.2.6. Variety:

19.2.6.1. Year of release:
2015
19.2.6.2.. Breeder/Maintainer:
DZARC/EIAR/

20. Desho grass (*Pennisetum glaucifolium*)**20.1. New variety**

- No new varieties released in 2020

20.2. Varieties under production

20.2.1 Variety:
Areka / DZF-590
2017
20.2.1.1 Year of release:
2017
20.2.1.2 Breeder/Maintainer:
Debere Ziet, Kulumssa,
Wodo genet, and Holetta
ARC/EIAR

20.2.2 Variety:
Kindu Kosha-DZF-591
2017
20.2.2.1 Year of release:
2017
20.2.2.2 Breeder/Maintainer:
Debere Ziet, Kulumssa,
Wodo genet, and Holetta
ARC/EIAR

20.2.3 Variety:
Kulumsa-DZF-592
2017
20.2.3.1 Year of release:
2017
20.2.3.2 Breeder/Maintainer:
Debere Ziet, Kulumssa,
Wodo genet, and Holetta
ARC/EIAR

22.Napier grass (*Pennisetum purpureum*)**22.1. New varieties**

- No new varieties released in 2020

22.2. Varieties under production

22.2.1 Variety:	Bako 04" (ILRI No 16804)
22.2.1.1 Year of release:	2019
22.2.1.2 Breeder/Maintainer:	Bako ARC/ ORARI
22.2.2 Variety:	Bako 01" (ILRI No 16801)
22.2.2.1 Year of release:	2019
22.2.2.2 Breeder/Maintainer:	Bako ARC/ ORARI

23. Local forage legume**23.1. New varieties**

23.1.1. Varety	Teken
23.1.1.1 Year of release	2020
23.1.1.2. Breeder/Maintaniner:	Humera ARC/TRARI
23.1.2. Varety	Eznianchiwa
23.1.2.1 Year of release	2020
23.1.2.2. Breeder/Maintaniner:	Humera ARC/TRARI

24.Mulberry (*Morus indica*)**24.1. New varieties****24.1.1. Variety name: K-2****24.1.1.1. Agronomic & morphological characteristics**

- Adaptation area: Well adapte from low land to mid land areas with relatively good rainfall 1250-1800 750-1600 Soils which are fertile, well drained, loamy to clay, porous with good moisture holding capacity and soil PH 6.2-6.8
- Altitude (m.a.s.l): 100
- Rain fall (mm): 60 between row and 60 between plant
- Soil condition: Mid June when soil moisture (rainfall) is abundant and year roundwith irrigation
- Seed rate (kg/ha): 15-20 Rapidly
- Spacing (cm): woody perennial with a deep root system and multiple stems
- Planting date: Simple, alternate, stipulate, petiolate, entire or lobed
- Fertilizer rate (t/ha): Growth habit: growing deciduous Cutting and carrying leaves and feeding to silkworms in
- Farm yard manure :
- Leaves: 74.39
- Utilization information : 12.66
- Quality parameters: 62.18
- Moisture (%): 5.05
- Crude protein (%): 20.10
- Total carbohydrate (%):
- Crude fat (%):
- Ash (%):

<input type="radio"/> N (mg/kg):	2.03
<input type="radio"/> P (mg/kg):	1333.31
<input type="radio"/> K (mg/kg):	13466.79
<input type="radio"/> Ca (mg/kg):	16112.7
<input type="radio"/> Mg (mg/kg):	1276.4
<input type="radio"/> S (mg/kg):	152.89
<input type="radio"/> Na (mg/kg) :	78.65
■ Leaf yield (qt/ha)	
<input type="radio"/> Fresh leaf weight :	244
<input type="radio"/> Dry leaf weight:	71.6
24.1.1.2. Year of release:	2020
24.1.1.3. Breeder/ maintainer:	Melkassa ARC/EIAR/

* Showed a better tolerance to insect pests and diseases

24.1.2. Variety name: **S-13**

24.1.2.1. Agronomic & morphological characteristics

- Adaptation area: Well adapte from low land to mid land areas with relatively good rainfall
 - Altitude (m.a.s.l): 1250-1800
 - Rain fall (mm): 750-1600
 - Soil Condition: Soils which are fertile, well drained, loamy to clay, porous with good moisture holding capacity soil PH 6.2-6.8
- Seed rate (kg/ha): 100
- Spacing (cm): 60 between row and 60 between plant
- Planting date: Mid June when soil moisture (rainfall) is abundant and year roundwith irrigation
- Fertilizer rate (t/ha): 15-20
- Farm yard manure : Rapidly growing deciduous woody perennial with a deep root system and multiple stems
- Growth habit: Simple, alternate, stipulate, petiolate, entire or lobed Cutting and carrying leaves and feeding to silkworms in
- Leaves:
- Utilization information :
- Quality parameters
 - Moisture (%): 75.48
 - Crude protein (%): 11.89
 - Total carbohydrate (%): 64.2
 - Crude fat (%): 5.22
 - Ash (%): 18.69
 - N (mg/kg): 1.9
 - P (mg/kg): 2982.39

○ K (mg/kg):	16030.17
○ Ca (mg/kg):	15513.7
○ Mg (mg/kg):	1735.9
○ S (mg/kg):	288.54
○ Na (mg/kg) :	144.75
■ Leaf yield (qt/ha)	
○ Fresh leaf weigh :	265
○ Dry leaf weight:	80.3
24.1.2.2. Year of release:	2020
24.1.2.3. Breeder/ maintainer:	Melkassa ARC/EIAR/

* Showed a better tolerance to insect pests and diseases

Group VIII. Industrial Crops

1. Cotton (*Gossypium hirsutum*)

Cotton is a member of the genus *Gossypium* and belongs to the family Malvaceae which also includes the flowering shrub Hibiscus and Okra. The earliest cultivation of cotton is believed to have begun some 5,000 to 10,000 years ago in the regions of Africa and Southeast Asia. The crop is now grown worldwide with greater concentration in the warmer and hotter dry areas of the tropics/subtropics and temperate regions in approximately 75 countries. Ethiopia is one of the centers of variability and domestication of several cultivated plants, and it is probable that cotton was also domesticated in this region.

Cotton has been produced in Ethiopia since very ancient times. Cotton is one of the more valuable and extensively grown field crop plants in the mild altitudes and lowland areas of Ethiopia. It has great importance in the social, cultural and spiritual way of life of the people. Both medium staple and short staple cottons are produced in the country. It is used to manufacture a wide variety of hand woven dresses and industrial processed textile fabrics, in addition to edible oil and protein rich-seedcake production for human and animal consumption respectively.

Cotton is grown predominantly as a mono-crop, once in a year. The main season, normally known as summer season, relies either on June to September rainfall or on irrigation water that lasts, depending on the locality, for about 126 days. The major cotton producing regions are Amhara, Tigray, Afar, Gambella and South Nations Nationalities people regions accounting for 96.8% of the total annual cotton production.

Currently, cotton fiber is used for the manufacture of a wide variety of textile products, yarns, cordages and other nonwoven products. Cotton seed meal is generally used as animal feed and its cotton stalk is used as feed, fuel wood and fencing material. The cotton crop is a good source of cash for the growers besides to its role as an export item in the national economic development of the country. In addition, cotton offers considerable employment opportunity on farms, industry, and commercial trade, input and service sectors.

1.1 New varieties

1.1.1 Variety name: **Werer-13**
(Delcero X Deltapine90 #F5-5-4-2-2)
(Irrigated)

1.1.1.1. Agronomic and morphological characteristics

▪ Adaptation area:	Middle Awash, Upper Awash, Lower Awash and Southern part of Ethiopia (Weyto and Omorate) Agro-ecology 350 - 1200
▪ Seed rate (kg/ha):-	15-20 delinated seeds and 30-45 fuzzy cotton seeds
▪ Spacing(cm):	90 inter-row and 20 intra-row spacing
▪ Fertilizer rate (Kg/ha): -	No No
○ N:	Normal
○ P:	Three to four
▪ Leaf shape:	Cream
▪ Leaf lobe number:	Solitary
▪ Flower petal color:	Blunt
▪ Boll bearing habit:	108.8
▪ Boll prominence of tip:	Indeterminate
▪ Plant height(cm):	4.9
▪ Plant growth habit:	38.2
▪ Average Boll Weight (g):	4.4
▪ Ginning outturn(%):	28.7
▪ Fiber quality parameters	27.5
○ Micronaire:	4.4
○ Upper Half Mean Length (mm):	18.7
○ Fiber Strength (g/tex):	48.9
▪ Yield (qt/ha)	2020
○ Lint yield:	19.2
○ Seed cooton yield:	47.6
1.1.1.2. Year of registration:	2020
1.1.1.3. Breeder/maintainer:	Werer ARC/EIAR

1.1.2 Variety name: **Sille-13**

(Chamo Farm no 1A1-1 DP-90 F1#307)
(Irrigated)

1.1.2.1. Agronomic and morphological characteristics

▪ Adaptation area:	Middle Awash, Upper Awash, Lower Awash and Southern part of Ethiopia (Weyto and Omorate) Agro-ecology 350 - 1200
▪ Altitude (m.a.s.l):-	15-20 delinated seeds and 30-45 fuzzy cootton seeds
▪ Seed rate (kg/ha):-	90 inter-row and 20 intra-row spacing
▪ Spacing(cm):	No
▪ Fertilizer rate (Kg/ha): -	No
○ N:	Normal
○ P:	Three to four
▪ Leaf shape:	Cream
▪ Leaf lobe number:	Solitary
▪ Flower petal color:	Blunt
▪ Boll bearing habit:	Indeterminate
▪ Boll prominence of tip:	103.0
▪ Plant growth habit:	5
▪ Pant Height(cm):	40.2
▪ Average Boll Weight (g):	4.7
▪ Ginning outturn (%):	27.8
▪ Fiber quality parameters	28.8
○ Micronaire:	19.2
○ Upper Half Mean Length (mm):	47.6
○ Fiber Strength (g/tex):	2020
▪ Yield (qt/ha)	Werer ARC/EIAR
○ Lint yield:	
○ Seed cooton yield:	
1.1.2.2. Year of registration:	
1.1.2.3. Breeder/maintainer:	

1.2. Varieties under production

1.2.1 Variety:	Werer-12 (DP-90 X Cucurova 1518-37-7) 2019 Werer ARC/EIAR	1.2.9.Variety: 1.2.9.1. Year of released: - 1.2.9.2. Breeder/maintainer: -	Werer-50 /Arba X Cucurova 1518F5#1-3/3 / 2015 Werer ARC
1.2.2. Variety: -	Malkasadi (Sidhafage farm no 3A3 DP F1 #7) 2019 Werer ARC/EIAR	1.2.10 Variety: 1.2.10.1 Year of release: 1.2.10.2 Breeder/Maintainer:	STG-14 2014 ELSE ADDIS INDUSTRIAL DEVELOPMENT PLC
1.2.2.1. Year of released: -			
1.2.2.2. Breeder/maintainer: -			
1.2.3 Variety:	WARC-LS1 (HTO#052 X LS-9024-7) 2019 Werer ARC/EIAR	1.2.11 Variety: 1.2.11.1 Year of release: 1.2.11.2 Breeder/Maintainer:	Candia 2014 ELSE ADDIS INDUSTRIAL DEVELOPMENT PLC
1.2.3.1. Year of released: -			
1.2.3.2. Breeder/maintainer: -			
1.2.4. Variety: -	WARC-LS2 (HTO#052 X LS-9024-14) 2019 Werer ARC/EIAR	1.2.12 Variety: 1.2.12.1 Year of release: 1.2.12.2 Breeder/Maintainer:	Claudia 2014 ELSE ADDIS INDUSTRIAL DEVELOPMENT PLC
1.2.4.1. Year of released: -			
1.2.4.2. Breeder/maintainer: -			
1.2.5 Variety:	JKCH 1947 (BT cotton) 2018 JK Agri – Genetics Ltd	1.2.13Variety: 1.2.13.1 Year of release: 1.2.13.2 Breeder/Maintainer:	Gloria 2014 ELSE ADDIS INDUSTRIAL DEVELOPMENT PLC
1.2.5.1. Year of released: -			
1.2.5.2. Breeder/maintainer: -			
1.2.6. Variety: -	JKCH 11050 (BT cotton) 2018 JK Agri – Genetics Ltd	1.2.14 Variety: 1.2.14.1 Year of Release: 1.2.14.2 Breeder/Maintainer:	VBCHB 1203 2013 ViBHA Seed Ethiopia PLC
1.2.6.1. Year of released: -			
1.2.6.2. Breeder/maintainer: -			
1.2.7 Variety:	Sisikuk-02/CCRI 12 / 2015 Werer ARC	1.2.15 Variety: 1.2.15.1 Year of Release: 1.2.15.2 Breeder/Maintainer:	VBCH 1527 2013 ViBHA Seed Ethiopia PLC
1.2.7.1. Year of released: -			
1.2.7.2. Breeder/maintainer: -			
1.2.8. Variety: -	Weyto – 07 / Guru F5#1-2/ 2015 Werer ARC		
1.2.8.1. Year of released: -			
1.2.8.2. Breeder/maintainer: -			

Crop Variety Register

1.2.16 Variety:	YD-670
1.2.16.1 Year of Release:	2013
1.2.16.2 Breeder/Maintainer:	Hazera Genetics ltd/ Greenline Trading PLC/
1.2.17 Variety:	YD-195
1.2.17.1 Year of Release:	2013
1.2.17.2 Breeder/Maintainer:	Hazera Genetics ltd/ Greenline Trading PLC/
1.2.18 Variety:	YD206
1.2.18.1 Year of Release:	2011
1.2.18.2 Breeder/Maintainer:	Hazera genetics ltd/Axum Greenline Trading plc
1.2.19 Variety:	YD211
1.2.19.1 Year of Release:	2011
1.2.19.2 Breeder/Maintainer:	Hazera genetics ltd/Axum Greenline Trading plc
1.2.20. Variety:	YD223
1.2.20.1 Year of Release:	2011
1.2.20.2 Breeder/Maintainer:	Hazera genetics ltd/Axum Greenline Trading plc
1.2.21 Variety:	Ionia
1.2.21.1 Year of Release:	2008
1.2.21.2 Breeder/Maintainer:	WARC/EIAR
1.2.22. Variety:	NEBAH (Stam -59A)
1.2.22.1 Year of release:	2007
1.2.22.2 Breeder/Maintainer:	WARC/EIAR
1.2.23 Variety:	Sille-1 (Stoneville 1324)
1.2.23.1 Year of release:	1997/98
1.2.23.2 Breeder/Maintainer:	WARC/EIAR

Crop Variety Register

1.2.24. Variety:	Teysie (Cucurova) 1518
1.2.24.1 Year of release:	1995
1.2.24.2 Breeder/Maintainer:	WARC/EIAR
1.2.25. Variety:	Enat (Caroline queen)
1.2.25.1 Year of release:	1995
1.2.25.2 Breeder/Maintainer:	WARC/EIAR
1.2.26. Variety:	Tate (Cu-Okra)
1.2.26.1 Year of release:	1995
1.2.26.2 Breeder/Maintainer:	WARC/EIAR
1.2.27. Variety:	Deltapine 90
1.2.27.1 Year of release:	1989
1.2.27.2 Breeder/Maintainer:	WARC/EIAR
1.2.28 Variety:	Bulk 202
1.2.28.1 Year of release:	1989
1.2.28.2 Breeder/Maintainer:	WARC/EIAR
1.2.29 Variety:	Arba
1.2.29.1 Year of release:	1987
1.2.29.2 Breeder/Maintainer:	WARC/EIAR
1.2.30. Variety:	Acala SJ 2
1.2.30.1 Year of release:	1986
1.2.30.2 Breeder/Maintainer:	WARC/EIAR
1.2.31 Variety:	Werer 1-84
1.2.31.1 Year of release:	1984
1.2.31.2 Breeder/Maintainer:	WARC/EIAR
1.2.32. Variety:	Acala 1517/70
1.2.32.1 Year of release:	Before 1974
1.2.32.2 Breeder/Maintainer:	WARC/EIAR
1.2.33 Variety:	Reba B.50
1.2.33.1 Year of release:	Before 1970
1.2.33.2 Breeder/Maintainer:	WARC/EIAR

1.2.34. Variety:	A-333-57
1.2.34.1 Year of release:	Before 1970
1.2.34.2 Breeder/Maintainer:	WARC/EIAR
1.2.35 Variety:	Albar 637
1.2.35.1 Year of release:	Before 1970
1.2.35.2 Breeder/Maintainer:	WARC/EIAR

2. Kenaf (*Hibiscus spp*)

Kenaf (*Hibiscus cannabinus L.*) is an annual plant, native to central Africa, and related to hibiscus (*Hibiscus hibiscum L.*) okra,(*Hibiscus exculentus*), hollyhock(*Althaea Rosea*) and cotton *Gossypium hirsutum L.* (Scott and taylor, 1988) individual plant can grow up to 18ft or more with few side branches When grow in dense stands .Kenaf is being developed as a non wood fiber crop. The bark, which contains long soft bast fibers, makes up 30 to 40% of the dry weight of the stem, is an ideal blend of long short fibers.

Kenaf is a tropical plant and is well-adapted to the hot humid conditions. It needs a soil temperature of around 55 °F for germination and growth. Kenaf is adapted with a wide range of soils. It grows in areas receiving an annual rain fall of 500-1700 mm and the most favorable temperature for kenaf production is 16-32°C. Under conventional production system, the fiber yield is usually 1-2 ton per hectare, however under favorable conditions and optimum management practices yield as high as 3-3.5 ton per hectare can be obtained.

The importance of kenaf fiber in Ethiopia was realized on several occasions since in 1970 when the National Fiber Work Corporation (NFWC) organized a meeting in Addis Ababa for the first time and created a forum for Researchers, development workers and processors to come together and deliberate in depth regarding increased production of kenaf in Ethiopia.

G-Seven PLC which owns Meher and Ethiopia fiber product processing factories is presently the sole producer of different natural fiber products in the country. The two factories owned by the campany use jute ,sisal and enset (domestic sources) fiber as row materials for the manufacturing of sacks ,ropes ,twines and other packaging materials at the moment more than 90% of the row material is being imported from abroad .The country investing an estimated amount of Birr 63,786,600.00 for the import of fiber from abroad annually.

In general, for the demand for organic packaging materials produced by the company is increasing from time to time and despite concerted efforts being made, the company is unable to satisfy the ever increasing demand by different customers. The major challenges which the company faces in this connection include dependency on external sources for its raw fiber supply, frequent delays in delivery and exorbitant price for raw fiber which tends to increase from time to time making the cost of production relatively high. Factory demand will be attained, if and only if the variety registered by Pawe Research Center, is demonstrated and scale it out till the producer level.

2.1 New variety

- No new variety released in 2020

2.2 Varieties under production

2.2.1 Variety:	Sojat-Dangur (G-2)
2.2.1.1 Year of release:	2012
2.2.1.2 Maintainer:	PARC/G-7 P.L.C

3. Sugarcane (*Saccharum officinarum*)

Sugarcane is the main sugar producing crop in Ethiopia and sugar industry plays a significant role in the socio economy of the country. Sugar consumption outstrips its production in Ethiopia. The per capita sugar consumption in Ethiopia is very low (5-6 kg) which is even below the African standard (15 kg) while the world average per capita consumption is 21 kg in 2016. The commercial sugarcane sector in Ethiopia started in 1951. Today, sugarcane plantations are expanding in different corners of the country with current area coverage of 105,000 hectares and production of 400,000 tons of sugar and 25,388m³ of ethanol per annum. Currently, the average cane yield production from commercial varieties is around 114 ton ha⁻¹.

With broad objectives of satisfying the local demand and for export there are expansion programs in the old sugar estates and establishment of new sugar development projects that aims to have ethanol and cogeneration facilities thereby increasing the production of sugar and coproducts. Within the completion of these projects annual sugar production will be boosted to 3.9-4.17 million tons, ethanol production will be 181 million litres and the factories contribute 709 Mega Watt electric power to the national grid.

Sugarcane has been cultivated in homesteads and farmers fields since the 16th century and preceded commercial production (Esayas et al., 2018/19). During **2019/20** production season, the total area under production reaches **32,068.982** hectares and the production is estimated to be **14,991,344.23** quintals. This is mostly used for making confectioneries and household consumption.

3.1. New variety

- No new variety released in 2020

3.2 Varieties under production

3.2.1 Variety:	'Tafach Shenkora'
3.2.1.1 Year of release:	2019
3.2.1.2 Maintainer:	Sugar Corporation
3.2.2 Variety:	'Kay Shenkora'
3.2.2.1 Year of release:	2019
3.2.2.2 Maintainer:	Sugar Corporation
3.2.3 Variety:	'Wonji RD-1'
3.2.3.1 Year of release:	2019
3.2.3.2 Maintainer:	Sugar Corporation
3.2.4 Variety:	'Ye Beskula Shenkora'
3.2.4.1 Year of release:	2019
3.2.4.2 Maintainer:	Sugar Corporation

Group IX. Stimulant Crops

1. Coffee (*Coffea arabica* L.)

Coffee is the most important agricultural commodity and beverage enjoyed throughout the world. Coffee grows at various altitudes, ranging from 550 to 2750 meters above sea level. However, Arabica best thrives and produced between altitudes of 1300 and 1800 m a.s.l, with annual rainfall amount ranging from 1500 to 2500 mm with an ideal minimum and maximum air temperatures of 15 and 25 0C, respectively. But, for extremes and some cases, it grows up to 550 m a.s.l (like Bebeka) and in areas where annual rainfall ranges from 1000 to 2000 mm.

Ethiopia is the home of Arabica coffee and there exists extremely diverse genetic reserves in the montane rainforests of southwest and south east of the country. About 5,800 Arabica coffee accessions are conserved as *ex-situ* and 25,000 ha of forest lands have been preserved as *in-situ* forest coffee conservation. Many important characteristics were identified in the Ethiopian Arabica coffee such as resistance to orange leaf rust and coffee berry disease. Variations in green bean caffeine, chlorogenic acid and sucrose, and trigonelline contents variation were also observed. There is also variation in the size and shape, bean size, shape, color and cup quality. The distinct attributes such as resistant to coffee diseases, adaptable to diverse environmental conditions (drought) also indicates the existence of diverse *C. arabica* genetic resources in the country. There are four types of production system in Ethiopia: forest coffee, semi-forest coffee, garden coffee and plantation coffee. Ninety-five per cent of the coffee produced under these systems is organic.

Under the Ethiopian condition, control of CBD (Coffee Berry Disease) with resistant variety was recognized and therefore, a program was initiated to select resistant genotypes. As a result, a number of CBD resistant Coffee Cultivars have been released. During 2019/20 production season, the total area under production reaches **758,523.29** hectares and the production is estimated to be **4,825,605.71** quintals.

1.1 New variety

- No new varieties released in 2020

1.2 Varieties under production

1.2.1 Variety:	74158*7530 (Gera coffee hybrid 1)	1.2.9 Variety: 1.2.9.1 Year of release: 2010 1.2.9.2 Breeder/Maintainer: JARC/EIAR	Haru-1(W66/98) 2010 JARC/EIAR
1.2.1.1 Year of release:	2018	1.2.10 Variety: 1.2.10.1 Year of release: 2010 1.2.10.2 Breeder/Maintainer: JARC/EIAR	Challa (W76/98) 2010 JARC/EIAR
1.2.1.2 Breeder/Maintainer:	Jimma ARC /EIAR	1.2.11. Variety: 1.2.11.1 Year of release: 2010 1.2.11.2 Breeder/Maintainer: JARC/EIAR	Sende (W92/98) 2010 JARC/EIAR
1.2.2 Variety:	L55/01 (Limu 1)	1.2.12 Variety: 1.2.12.1 Year of release: 2010 1.2.12.2 Breeder/ Maintainer: JARC/EIAR	Menesibu (W78/84) 2010 JARC/EIAR
1.2.2.1 Year of release:	2018	1.2.13 Variety: 1.2.13.1 Year of release: 2010 1.2.13.2 Breeder/Maintainer: JARC/	Harusa (H-674/98) 2010 JARC/ EIAR/MCARC/OARI
1.2.2.2 Breeder/Maintainer:	Jimma ARC/EIAR	1.2.14 Variety: 1.2.14.1 Year of release: 2010 1.2.14.2 Breeder/Maintainer: JARC/EIAR/	Mercha-1 (H-823/98) 2010 MCARC/OARI
1.2.3 Variety:	EIAR50/CH	1.2.15 Variety: 1.2.15.1 Year of release: 2010 1.2.15.2 Breeder/Maintainer: JARC/EIAR	Bultum (H-857/98) 2010 JARC/EIAR /MCARC/ORARI
1.2.3.1 Year of release:	2016	1.2.16 Variety: 1.2.16.1 Year of release: 2010 1.2.16.2 Breeder/Maintainer: JARC/EIAR	Mocha (H-739/98) 2010 JARC/EIAR /MCARC/OARI
1.2.3.2 Breeder/Maintainer:	JARC/EIAR		
1.2.4 Variety:	Melko-Ibsitu		
1.2.4.1 Year of release:	2016		
1.2.4.2 Breeder/Maintainer:	JARC/EIAR		
1.2.5 Variety:	Tepi HC5		
1.2.5.1 Year of release:	2016		
1.2.5.2 Breeder/Maintainer:	JARC/EIAR		
1.2.6 Variety:	Fayate (971)		
1.2.6.1 Year of release:	2010		
1.2.6.2 Breeder/Maintainer:	JARC/EIAR		
1.2.7 Variety:	Odicha (974)		
1.2.7.1 Year of release:	2010		
1.2.7.2 Breeder/Maintainer:	JARC/EIAR		
1.2.8 Variety:	Koti (85257)		
1.2.8.1 Year of release:	2010		
1.2.8.2 Breeder/Maintainer:	JARC/EIAR		

Crop Variety Register		Crop Variety Register	
1.2.17 Variety:	Merdacheriko (8136)	1.2.26 Variety:	ABABUNA
1.2.17.1 Year of release:	2006	1.2.26.1 Year of release:	1997
1.2.17.2 Breeder/Maintainer:	JARC/EIAR	1.2.26.2 Breeder/Maintainer:	JARC/EIAR
1.2.18 Variety:	Buno-washi 2-05 (7416)	1.2.27 Variety:	DESSU
1.2.18.1 Year of release:	2006	1.2.27.1 Year of release:	1997
1.2.18.2 Breeder/Maintainer:	JARC/EIAR	1.2.27.2 Breeder/Maintainer:	JARC/EIAR
1.2.19 Variety:	Yachi-1-05 (7576)	1.2.28 Variety:	CATIMOR J-21
1.2.19.1 Year of release:	2006	1.2.28.1 Year of release:	1997
1.2.19.2 Breeder/Maintainer:	JARC/EIAR	1.2.28.2 Breeder/Maintainer:	JARC/EIAR
1.2.20 Variety:	Wushwush 2-05(7414)	1.2.29 Variety:	CATIMOR J-19
1.2.20.1 Year of release:	2006	1.2.29.1 Year of release:	1997
1.2.20.2 Breeder/Maintainer:	JARC/EIAR	1.2.29.2 Breeder/Maintainer:	JARC/EIAR
1.2.21 Variety:	Angafa 5-05(1377)	1.2.30 Variety:	75227
1.2.21.1 Year of release:	2006	1.2.30.1 Year of release:	1989
1.2.21.2 Breeder/Maintainer:	JARC/EIAR	1.2.30.2 Breeder/Maintainer:	JARC/EIAR
1.2.22 Variety:	Gawe (74110xF-59)	1.2.31 Variety:	754
1.2.22.1 Year of release:	2002	1.2.31.1 Year of release:	1989
1.2.22.2 Breeder/Maintainer:	JARC/EIAR	1.2.31.2 Breeder/Maintainer:	JARC/ EIAR
1.2.23 Variety:	Me'oftu (F-35)	1.2.32 Variety:	7454
1.2.23.1 Year of release:	2002	1.2.32.1 Year of release:	1989
1.2.23.2 Breeder/ Maintainer:	JARC/EIAR	1.2.32.2 Breeder/Maintainer:	JARC/ EIAR
1.2.24 Variety:	Geisha	1.2.33 Variety:	744
1.2.24.1 Year of release:	2002	1.2.33.1 Year of release:	1988
1.2.24.2 Breeder/Maintainer:	JARC/ EIAR	1.2.33.2 Breeder/Maintainer:	JARC/ EIAR
1.2.25 Variety:	MELKO CH-2	1.2.34 Variety:	740
1.2.25.1 Year of release:	1997	1.2.34.1 Year of release:	1988
1.2.25.2 Breeder/Maintainer:	JARC/EIAR	1.2.34.2 Breeder/Maintainer:	JARC/ EIAR

1.2.35 Variety:	74148
1.2.35.1 Year of release:	1988
1.2.35.2 Breeder/Maintainer	JARC/ EIAR
1.2.36 Variety:	74110
1.2.36.1 Year of release:	1987
1.2.36.2 Breeder/Maintainer	JARC/ EIAR
1.2.37 Variety:	74112
1.2.37.1 Year of release:	1987
1.2.37.2 Breeder/Maintainer:	JARC/ EIAR
1.2.38 Variety:	74140
1.2.38.1 Year of release:	1987
1.2.38.2 Breeder/Maintainer	JARC/ EIAR
1.2.39 Variety	74158
1.2.39.1 Year of release:	1987
1.2.39.2 Breeder/Maintainer	JARC/ EIAR
1.2.40 Variety:	74165
1.2.40.1 Year of release:	1987
1.2.40.2 Breeder/Maintainer	JARC/ EIAR
1.2.41 Variety:	741
1.2.41.1 Year of release:	1986
1.2.41.2 Breeder/Maintainer	JARC/EIAR

2. Tobaco (*Nicotiana tabacum*)

Tobacco, *Nicotiana tabacum*, is an herbaceous annual or perennial plant in the family Solanaceae grown for its leaves. The tobacco plant has a thick, hairy stem and large, simple leaves which are oval in shape. The tobacco plant produces white, cream, pink or red flowers which grow in large clusters, are tubular in appearance and can reach 3.5-5.5 cm in length. Tobacco may reach 1.2-1.8 m in height and as is usually grown as an annual, surviving only one growing season. Tobacco may also be referred to as Virginia tobacco or cultivated tobacco and originates from South America. Tobacco is a stimulant and the dried leaves of the tobacco plant can be cured and used to produce tobacco cigarettes, cigars and snuff or for pesticide production.

Tobacco grows very well in a wide range of climates and will grow optimally at temperatures between 20 and 30°C in areas where there is a dry period to facilitate harvest of the leaves. The type of soil depends on the variety of tobacco being grown but the best yields are usually obtained in loam to sandy loam soils. The soil should have a pH between 5.0 and 6.6. Tobacco plants are easily damaged by waterlogged soils and quality can be affected by high salinity. Plants should be grown in a well-draining and well aerated soil. Tobacco is propagated from seed on well prepared seed beds or in the glasshouse and transplanted to the final growing site. Seeds grown outdoors protected for the first few weeks to prevent weather damage to the emerging young plants. Seedlings are transplanted after 30–60 days when they are approximately 15 cm in height. The young plants should be spaced 46–61 cm apart.

The best quality tobacco leaves are produced when the flowerheads of the plants are removed. Topping or removal of leaves promotes the development of suckers. Fertilizer and irrigation requirements of tobacco vary with the variety being grown but generally, tobacco has a requirement of 40-80 kg per hectare of nitrogen, 80-90 kg per hectare of phosphorous and 50-110 kg per hectare of potassium.

Tobacco is harvested by hand in most parts of the world by picking 2–3 leaves from each plant per harvest. In the USA and Canada, tobacco

plants are mechanically harvested by cutting the stalks of the plants. Only fully mature leaves should be harvested when hand picking is practiced and harvests should be carried out at weekly intervals. After harvest, leaves are usually tied in pairs to cure.

Tobacco is one the popular commercial plant grown by Ethiopian farmers for local consumption and as industrial crop for international market. Despite, tobacco growing is an ancient cultivated crop there is no registered variety in the country based on the aforementioned fact, National (Ethiopian)

2.1 New varieties

2.1.1 Variety name: K-110

2.1.1.1. Agronomic and morphological characteristics

- Adaptation area: Hawassa, Bilate, Jawe similar agro-ecology
- Altitude (m.a.s.l):- -
- Seed rate (no/ha):- 24,700
- Spacing(cm): 45 between plants
90 between rows
- Fertilizer rate (kg/ha): -
 - Urea : 148
 - NPSB: 148
- Date of maturity: First harvest: 2 months after transplanting & last harvest was completed after 3 to 4 months after transplanting
- Plant height (cm): 99-142
- Green leaf weight/plant (kg): 0.4-1.41
- Fresh to dry leaf ratio: 7:1-7.8-1
- Leaf number/plant: 17-22
- An average leaf width (cm): 19.69-34.19
- An average leaf length (cm): 53.4 -64.26
- Stem width (cm): 3.12
- An average leaf area (cm²): 10597.91
- Crop pest reaction:*
- Leaf quality parameters
 - Nicotine content (%): 2.10-2.37
 - Sugar content: 8.96-11.9
- Yield (t/ha)
 - Green leaf: 8.0-11.28
 - Dry leaf: 1.12-1.45

2.1.1.2. Year of registration:

2.1.1.3. Breeder/maintainer:

National Tobaco Enterprise

* Highly resistant to different disease such as; Powdery mildew, Blank shank, Root rot, Brown leaf spot and moderately resistant to Tobacco Mosaic varus, leaf wilt, Leaf curl and Tobacco bushy top

National Variety Release Committee (NVRC) Standing Committee

