Project Description:

As part of the 10 Days Visualization Challenge, you need to create a storytelling dashboard in the Horticulture sector.

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Tool Used: Tableau

Challenge Theme:-Horticulture

Dataset Url:-https://data.gov.in/node/95670/download
Git repo link:-
https://github.com/smartinternz02/SPS-11250-Horticulture

1.What is Horticulture?

Horticulture is the art of cultivating plants in gardens to produce food and medicinal ingredients, or for comfort and ornamental purposes. Horticulturists grow flowers, fruits and nuts, vegetables and herbs, as well as ornamental trees and lawns.

2.Overview

The data refers to number of horticultural crops varieties released on national level during 1951-2009. The horticultural crops includes varieties released from vegetables, fruits, ornamental, medicinal and aromatic, plantation and spice crops.
Source: Division of Horticulture, Indian Council of Agricultural Research, New Delhi.

3.Objective

To visualize the:-
- No of crop varieties released crop group wise
- No of crop varieties released crop wise in each group
- No of crop varieties released in each improved categories (Hybrid, Mutant, Selection and others)

4.Crop Improvement: Development and release of clones /varieties and hybrids in:-

4.1.Fruit Crops: 134 varieties in 18 fruit crops comprising of Almond (4), Aonla (1), Apple (17), Apricot (3), Banana (4), Ber (3), Grapes (21), Guava (8), Khejri (1), Litchi (6), Mango (27), Papaya (19), Peach (1), Pear (3), Plum (2), Pomegranate (10), Sweet Orange (2) and Walnut (2) in which 70 varieties are belong to Hybrids, 4 varieties belong to Mutants, 50 varieties belong to Selections and 10 varieties belong to other category.

Total number of fruit crops released during 1951-2009: 134

Crop gro..	Crops	Hybrids	Mutants	Selections	Others	
Fruit Crops	Almond	Null	Null	4	Null	4
	Aonla	Null	Null	1	Null	1
	Apple	16	1	Null	Null	17
	Apricot	Null	3	Null	Null	3
	Banana	3	Null	1	Null	4
	Ber	1	Null	2	Null	3
	Grapes	13	Null	5	3	21
	Guava	4	Null	3	1	8
	Khejri	Null	Null	1	Null	1
	Litchi	2	Null	4	Null	6
	Mango	23	Null	4	Null	27
	Papaya	4	Null	15	Null	19
	Peach	Null	Null	Null	1	1
	Pear	Null	Null	Null	3	3
	Plum	Null	Null	Null	2	2
	Pomegranate	4	Null	6	Null	10
	Sweet Orange	Null	Null	2	Null	2
	Walnut	Null	Null	2	Null	2
	Sub-Total	70	4	50	10	134

iii Columns

≣ Rows ⊟ Crop groups ≞ Crops ≞ Hybrids Mutants Selections Others

Crop groups
- [ ] (All)
- [x] Fruit Crops
- [ ] Grad Total
- [ ] Medicinal and Ar.
- [ ] Ornamental Crop
- [ ] Plantation and Sr

Others
- [x] (All)
- [x] Null
- [x] 1
- [x] 2
- [x] 3
- [x] 4

Mutants
- [x] (All)
- [x] Null
- [x] 1
- [x] 2
- [x] 3
- [x] 4

Hybrids
- [x] (All)
- [x] Null
- [x] 1
- [x] 2
- [x] 3

4.2.Medicinal and Aromatic plants: 41 varieties in 23 Medicinal and Aromatic plants comprising of Asalio (1), Ashwagandha (2), Betel Vine (5), Foxglove (1), Isabgol (6), Jasminum Grandiflo (1), Lemon Grass (1), Liquorice (1), Long Pepper (1), Mucuna (1), Mushakbala (1),Opium Poppy (6), Palmarosa (2), Periwinkle (1), S Viarum (2), Safed Musli (1), Sarpagandha (1), Senna (1), Solanum Laciniatum (1), Spear MInt (1), Vetiver (1), Yam(2) and Yellow Horned Puppy (1) in which 2 varieties belong to Mutants, 24 varieties belong to Selections and 15 varieties belong to other category.There is no hybrid varieties in this group.

Total number of fruit crops released during 1951-2009: 41

Crop groups	Crops	Hybrids	Mutants	Selections	Others	
Medicinal and Aromatic Plants	Asalio	Null	Null	1	Null	1
	Ashwagandha	Null	Null	1	1	2
	Betel vine	Null	Null	3	2	5
	Foxglove	Null	Null	Null	1	1
	Isabgol	Null	1	4	1	6
	Jasminum grandiflo..	Null	Null	1	Null	1
	Lemon grass	Null	Null	1	Null	1
	Liquorice	Null	Null	Null	1	1
	Long pepper	Null	Null	1	Null	1
	Mucuna	Null	Null	1	Null	1
	Mushakbala	Null	Null	Null	1	1
	Opium poppy	Null	Null	6	Null	6
	Palmarosa	Null	Null	Null	2	2
	Periwinkle	Null	Null	Null	1	1
	S. viarum	Null	1	Null	1	2
	Safed musli	Null	Null	1	Null	1
	Sarpagandha	Null	Null	1	Null	1
	Senna	Null	Null	1	Null	1
	Solanum laciniatum	Null	Null	Null	1	1
	Spear mint	Null	Null	Null	1	1
	Vetiver	Null	Null	Null	1	1
	Yam	Null	Null	2	Null	2
	Yellow horned poppy	Null	Null	Null	1	1
	Sub-Total	Null	2	24	15	41

Crop groups
- (All)
- Fruit Crops
- Grad Total
- ☑ Medicinal and Ar....
- Ornamental Crops
- Plantation and Sp...

Others
- ☑ (All)
- ☑ Null
- ☑ 1
- ☑ 2
- ☑ 3
- ☑ 4

Mutants
- ☑ (All)
- ☑ Null
- ☑ 1
- ☑ 2
- ☑ 3
- ☑ 4

Hybrids
- ☑ (All)
- ☑ Null
- ☑ 1
- ☑ 2
- ☑ 3
- ☑ 4

4.3.Ornamental Corps: 68 varieties in 11 Ornamental Crops comprising of Bougainvillea (6), Carnation (3), China Aster (4), Cryshanthemum (20), Crossandra (2), Dianthus (1), Gerbera (1), Gladiolus (18), Jasminum (3), Rose (4) and Tuberose (6) in which 9 varieties are belong to Hybrids, 8 varieties belong to Mutants, 14 varieties belong to Selections and 17 varieties belong to other category.

Total number of fruit crops released during 1951-2009: 68

Crop gro..	Crops	Hybrids	Mutants	Selections	Others	
Ornament al Crops	Bougainvillea	Null	1	2	3	6
	Carnation	Null	2	1	Null	3
	China aster	Null	Null	Null	4	4
	Chrysanthemum	Null	3	6	11	20
	Crossandra	2	Null	Null	Null	2
	Dianthus	1	Null	Null	Null	1
	Gerbera	Null	Null	1	Null	1
	Gladiolus	4	1	Null	13	18
	Jasminum	Null	Null	3	Null	3
	Rose	Null	1	1	2	4
	Tuberose	2	Null	Null	4	6
	Sub-Total	9	8	14	37	68

Columns

Rows | Crop groups | Crops | Hybrids | Mutants | Selections | Others

Crop groups
- [ ] Grad Total
- [ ] Medicinal and Ar...
- [x] Ornamental Crops
- [ ] Plantation and Sp...
- [ ] Vegetable Crops

Others
- [x] (All)
- [x] Null
- [x] 1
- [x] 2
- [x] 3
- [x] 4

Mutants
- [x] (All)
- [x] Null
- [x] 1
- [x] 2
- [x] 3
- [x] 4

Hybrids
- [x] (All)
- [x] Null
- [x] 1
- [x] 2
- [x] 3

4.4. Plantation and Spice Crops:

236 varieties in 19 Plantation and spice crops comprising of Ajowain (2), Anise (1), Arecanut (10), Black Pepper (16), Cardamom (13), Cashew (37), Celery (1), Cinnamon (6), Cocoa (17), Coconut (37), Coriander (24), Cumin (9), Dill (2), Fennel (10), Fenugreek (17), Ginger (7), Nigelia (1), Nutmeg (3) and Turmeric (23) in which 43 varieties are belong to Hybrids, 7 varieties belong to Mutants, 175 varieties belong to Selections and 11 varieties belong to other category.

Total number of fruit crops released during 1951-2009: 236

Crop gro..	Crops	Hybrids	Mutants	Selections	Others	
Plantation and Spice Crops	Ajowain	Null	Null	2	Null	2
	Anise	Null	Null	1	Null	1
	Arecanut	2	Null	1	7	10
	Black pepper	4	Null	12	Null	16
	Cardamom	1	Null	12	Null	13
	Cashew	12	Null	25	Null	37
	Celery	Null	Null	1	Null	1
	Cinnamon	Null	Null	6	Null	6
	Cocoa	8	Null	9	Null	17
	Coconut	16	Null	21	Null	37
	Coriander	Null	1	23	Null	24
	Cumin	Null	1	8	Null	9
	Dill	Null	Null	2	Null	2
	Fennel	Null	Null	7	3	10
	Fenugreek	Null	2	14	1	17
	Ginger	Null	1	6	Null	7
	Nigella	Null	Null	1	Null	1
	Nutmeg	Null	Null	3	Null	3
	Turmeric	Null	2	21	Null	23
	Sub-Total	43	7	175	11	236

4.5. Vegetable Crops: 607 varieties in 51 Vegetable crops comprising of Ash Gaurd (5), Bitter Gourd (12), Bottle Gourd (18), Brinjal (59), Broccoli (3), Cabbage (8), Carrot (13), Cassava (13), Cauliflower (16), Chillies (37), Chinese Potato (1), Cluster Bean (2), Coleus (1), Colocasia or Bunda (3), Colocasia or Taro (13), Cowpea Veg (12), Cucumber (10), Dolichos Bean(7), Elephant Foot Yam (7), French Bean (17), Garden Pea (22), Garlic (23), Greater Yam (6), Ivy Gourd (5), Kachri Melon (2), Kakri Cucumber (2), Knol-Khol (3), Lesser Yam (3), Long Melon (2), Musk Melon (20), Onion (51), Pointed Gourd (5), Potato (50), Pumpkin (10), Ridge Gourd (8), Round Gourd (3), Round Melon (1), Snake Gourd (6), Snap Melon (3), Spine Gourd (1), Sponge Gourd (8), Squash (3), Sweet Pepper (9), Sweet Potato (30), Sword Bean (1), Teasel Gourd (1), Tomato (54), Water Melon (13), White Yam (3), Xanthosoma (1) and Yam Bean (1)   in which 97 varieties are

belong to Hybrids, 5 varieties belong to Mutants, 392 varieties belong to Selections and 113 varieties belong to other category.

Total number of fruit crops released during 1951-2009: 607

Crop groups	Crops	Hybrids	Mutants	Selections	Others	Total
Vegetable Crops	Ash gourd	Null	Null	5	Null	5
	Bitter gourd	1	1	9	1	12
	Bottle gourd	5	Null	12	1	18
	Brinjal	10	Null	38	11	59
	Broccoli	Null	Null	3	Null	3
	Cabbage	Null	Null	2	6	8
	Carrot	Null	Null	7	6	13
	Cassava	7	Null	4	2	13
	Cauliflower	2	Null	14	Null	16
	Chillies	1	1	28	7	37
	Chinese potato	Null	Null	1	Null	1
	Cluster bean	Null	Null	2	Null	2
	Coleus	Null	Null	1	Null	1
	Colocasia (Bunda)	Null	Null	3	Null	3
	Colocasia (Taro)	1	Null	12	Null	13
	Cowpea (veg.)	Null	Null	7	5	12
	Cucumber	Null	Null	8	2	10
	Dolichos bean	Null	Null	4	3	7
	Elephant foot yam	1	Null	6	Null	7
	French bean	Null	1	6	10	17
	Garden pea	Null	Null	Null	22	22
	Garlic	Null	Null	23	Null	23
	Greater yam	1	Null	5	Null	6
	Ivy gourd	Null	Null	5	Null	5
	Kachri (melon)	Null	Null	2	Null	2
	Kakri (Cucumber)	Null	Null	2	Null	2
	Knol-khol	Null	Null	1	2	3
	Lesser yam	Null	Null	3	Null	3
	Long melon	Null	Null	2	Null	2

Crop groups	Crops	Hybrids	Mutants	Selections	Others	Total
Vegetable Crops	Ivy gourd	Null	Null	5	Null	5
	Kachri (melon)	Null	Null	2	Null	2
	Kakri (Cucumber)	Null	Null	2	Null	2
	Knol-khol	Null	Null	1	2	3
	Lesser yam	Null	Null	3	Null	3
	Long melon	Null	Null	2	Null	2
	Musk melon	2	Null	13	5	20
	Onion	2	Null	47	2	51
	Pointed gourd	Null	Null	5	Null	5
	Potato	48	Null	2	Null	50
	Pumpkin	Null	Null	9	1	10
	Ridge gourd	Null	1	7	Null	8
	Round gourd	Null	Null	2	1	3
	Round melon	Null	Null	1	Null	1
	Snake gourd	Null	Null	6	Null	6
	Snap melon	Null	Null	3	Null	3
	Spine gourd	Null	Null	1	Null	1
	Sponge gourd	Null	Null	8	Null	8
	Squash	Null	Null	1	2	3
	Sweet pepper	Null	Null	6	3	9
	Sweet potato	7	Null	23	Null	30
	Sword bean	Null	Null	1	Null	1
	Teasel gourd	Null	Null	1	Null	1
	Tomato	5	1	30	18	54
	Water melon	4	Null	6	3	13
	White yam	Null	Null	3	Null	3
	Xanthosoma	Null	Null	1	Null	1
	Yam bean	Null	Null	1	Null	1
	Sub-Total	97	5	392	113	607

5.Visualization of no of crop varieties released in each improved categories (Hybrid, Mutant, Selection and others)

6.Visualization of no of crop varieties released crop group wise

| Columns | ⊞ Crop groups |
| Rows | SUM(Total) |

Sheet 5
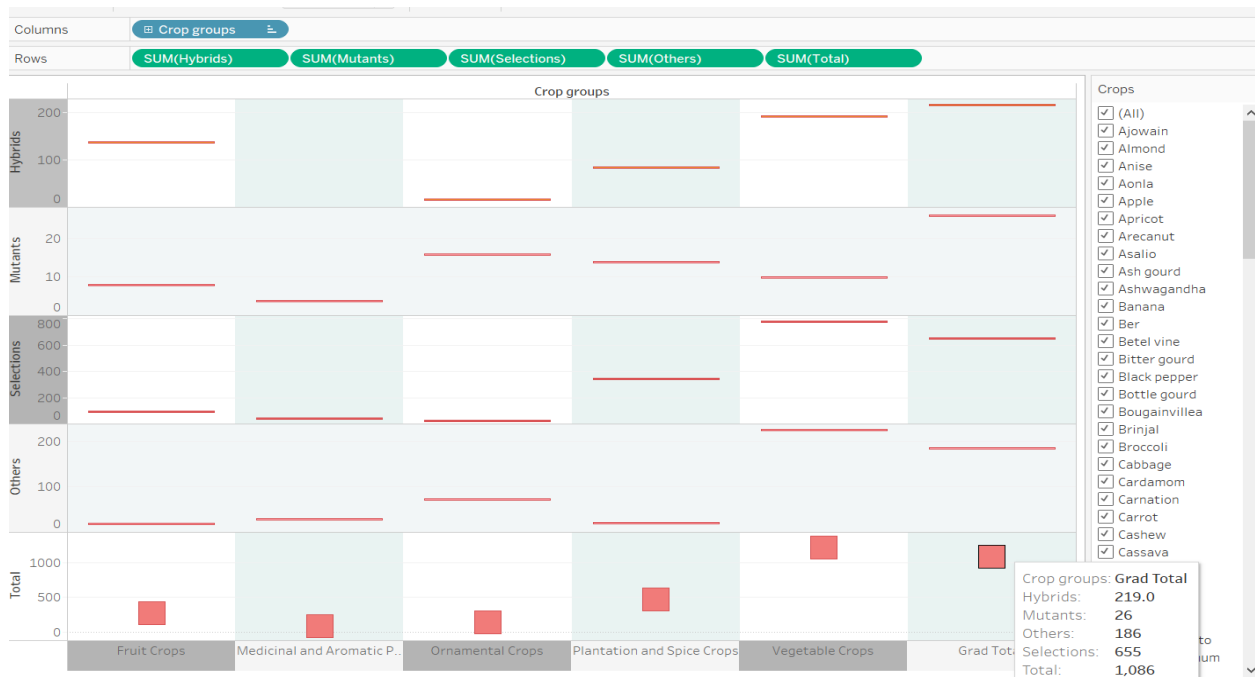
Crop groups
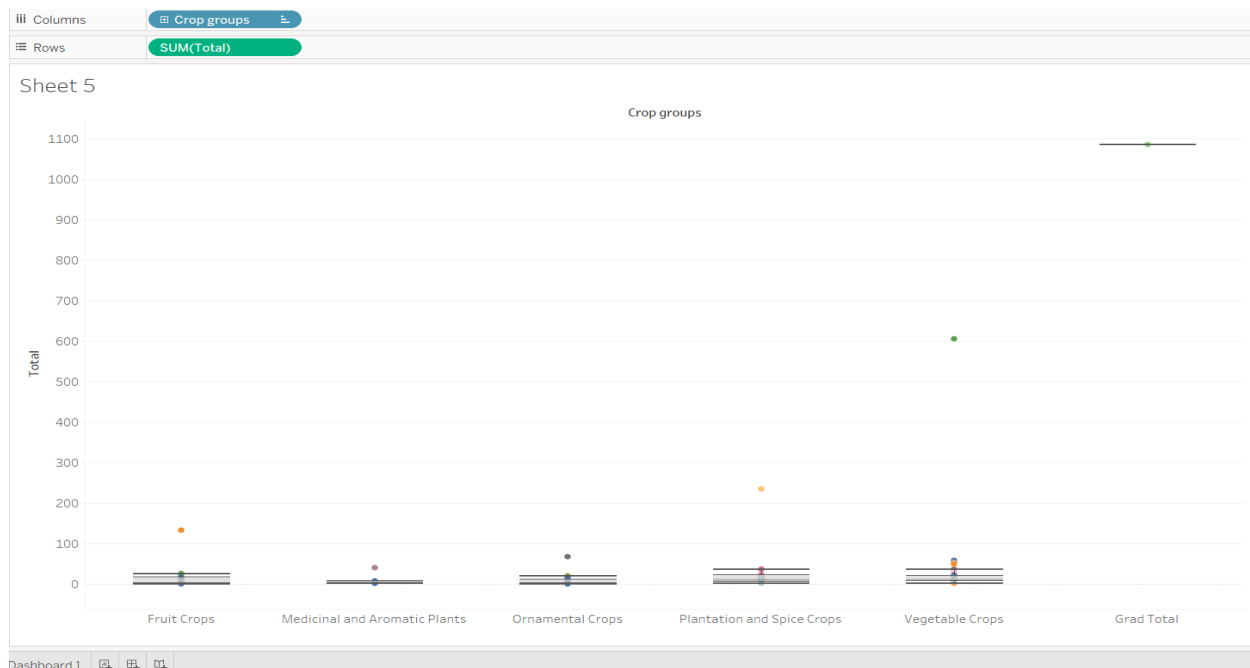
8.Application

- **R&D Sector:** Will help to analyse more those sector which is having less improvement done in previous year.
- **Farming Sector:** Farmer will able to grow crops which does not belong to their climatic region.
- **Reduce cost of crop.**
- **Increase Production.**
- **Reduce cost production time.**

9.Conclusion

Systematic research efforts over the years have led to the development of 1086 improved varieties and hybrids, improved production and protection technologies for different horticultural crops for varying agro-climatic regions and situations of the country as well as post harvest processing.

10.Future Scope

- You can insert sum so that we can calculate percentage of all the crop groups and various improved categories.
- You can visualize more attractive.

11.Bibliography

- https://data.gov.in/resources/number-horticultural-crops-varieties-released-during-1951-2009

- https://public.tableau.com/en-us/s/

THANK YOU FOR YOUR PATIENCE