CHAPTER 1

INTRODUCTION

The name of the new course started by MG university is **" JAIVA KRISHI ARIVAUM PADANAVUM"** and it is the first online course of the mg university.the main objective of this course is educate the youth about agriculture and moltivated to do agricultural**.** Organic farming is an agricultural system that uses fertilizers of organic origin such as compost manure, green manure, and bone meal and places emphasis on techniques such as crop rotation and companion planting. Compared with conventional agriculture, organic farming uses fewer pesticides, **reduces soil erosion, decreases nitrate leaching into groundwater and surface water**, and recycles animal wastes back into the farm. These benefits are counterbalanced by higher food costs for consumers and generally lower yields

Organic farming definition: specifications

- No use of "synthetic" chemicals – yet, fertilizers or pesticides at their "natural origin" are allowed;
- No use of genetically modified organisms (GMOs);
- Recycle all organic waste;
- Crop rotation to improve soil regeneration;
- Pest control by biological agents

Organic farming aims to: • Increase long-term soil fertility. • Control pests and diseases without harming the environment. • Ensure that water stays clean and safe. • Use resources which the farmer already has, so the farmer needs less money to buy farm inputs. • Produce nutritious food, feed for animals and high quality crops to sell at a good price

CHAPTER 2

>>MATERIALS AND METHOD.

2.1>>LOCATION OF COLLEGE AND STUDENT.

COLLEGE	STUDENT
NAME OF COLLEGE: Santhigiri college of computer science	NAME OF STUDENT:Anandu sabu

LOCATION: Vazhithala po,	Pallipattu (h) purapuzha po
Vazhithala,thodupuzha,Idukki	Purapuzha,thodupuzha,Idukki
Kerala,india	Kerala,india

2.2.crops selected

2.2.1 VARIETIES

CROPS SELECTED	PEA	TURMERIC	GINGER	LADY FINGER	AMARATHUS(CHEERA)

2.2.2 *SOURCE OF SEEDLINGS/SEED* : FROM PREVIOUS HARVES

2.3 AREA:BACKYARD

2.4.CROP SEASON

SL.NO	CROP	SEASON
1	PEA	October-december
2	Turmeric	January-march
3	Ginger	March-April
4	Lady finger	Febuary -march
5	Amarathus	June-july

2.5.weather condition prevailed

Warm climate

Cool and moderate temperature ,tropical condition,warm humid climate

Rain fed condition …

2.6.agricultural implements and equipments used

Implements and equipments

- **Sickle**
- **Hand fork**
- **Pickaxe**
- **Rake**
- **Hoe**

- **Vessels**

2.7.liming material and quantity

To correct the ph of soil and to get a value of about 7.we add calcium carbonate
Calcium carbonate, the chief component of limestone, is a **widely used amendment to neutralize soil acidity** and to supply calcium (Ca) for plant nutrition.

2.8.manures

2.8.1 BASAL APPLICATION.

Broadcasting at sowing or planting (Basal application)

The main objectives of broadcasting the fertilizers at sowing time are to uniformly distribute the fertilizer over the entire field and to mix it with soil.

Basal application
Green manure,ash,dry cow dung,bone manure,dry leaves

2.8.2. TOP DRESSING

This is the application of quick-acting fertilisers to the soil surface around plants to stimulate growth, and is usually carried out in spring at the start of the growing season.

2.8.3 BIO FERTILIZER

The substances that have living microbes and reside in the area surrounding

roots, i.e. rhizosphere, and are involved in enhancing the supply of nutrients to plants are known as biofertilizers. Biofertilizers have a key role in organic agriculture**.** It protects environment from pollutants

Bio fertilizer
vermicompost

2.8.4 BIO SLURRIES

Bioslurry is **a good fertiliser for crops and improves the soil fertility, soil structure and yields of crops**. It is often even better than regular Farmyard Manure (FYM) and may also reduce the use of chemical fertilisers. ... Indeed, bioslurry increases crop revenues by 25 percent on average.

Bio slurries
Cow dung ,goat ,rabbit,and chicken manure,green manure

2.9 bio pesticides

Biochemical pesticides are naturally occurring substances that control pests by non-toxic mechanisms. ... Biochemical pesticides include substances that interfere with mating, such as insect sex pheromones, as well as various scented plant extracts that attract insect pests to traps**.**

Bio pesticides
neem oil emulsion
Mixture of neem leaves and garlic
Tobacco and soap mixture

2.10 bio control agents

Biocontrol is used to get pest-free fields. It is very effective and a long-term method to remove invasive plants. The living organisms are used in this method to eradicate, weeds, pests, insects, pathogens, etc. The biocontrol agents protect plants from their natural enemies like parasites, from predation, etc.

Bio control agents

Weaver ants

2.11 ANY OTHER INPUTS USED

NO other inputs were used in this process .

2.12 cROP MANAGEMENT

2.12.1 LAND PREPARATION.

Land which was unde mulching is used for cultivating : In mulching,the land covered with all types of short cover crops or covered with dead plants and remains of last harvested crops.

Land is prepared by cutting down all the short cover crops by sickle and they are mixed with the soil, which then acts as green manure

This process will help in carbon cycling and increases the amount of carbon in soil. For a healthy growth of plants the soil should have a carbon content of 2%

2.12.2 liming

Liming is done to correct the ph of the soil and the advised value of ph is 7. The main liming material used is calcium carbonate

2.12.3 basal manuring

Before seeding/planting the soil is made fertile by mixing a suitable amount of dry cow dung, ash and bone manure

2.12.4 GROW BAG FILLING

we need to fill the grow bags (or containers) with soil, peat, coir, composted green waste, composted wood chips, or a mixture of all of these as per availability. We need to mix organic fertilizers like dry cow dung, neem cake, vermi compost etc with the soil to ensure the growth of the plant.

2.12.5 SEEDING

1.PEA

2. LADY FINGER

The seeds of respective crops are placed on the prepared soil with sufficient distance between the seeds. After placing the seeds it is covered with a small amount of soil and water the seeds.

3.amarathus

A soil bed is prepared, small depressions are created at regular intervals by adding mixture of cow dung and ash.in these place seed spreading over the soil.

2.12.5 PLANTING

1,GINGER

2,TURMERIC

A soil bed is prepared, small depressions are created at regular intervals by adding mixture of cow dung and ash. In these depressions place the turmeric and ginger with nodes facing upward. Cover it with small amount of soil and leaves

2.12.6 Top dressing

When the sapling attains a minimum height top dressing is done. At this point more soil and manures are added to the base. The main manures used are goat and chicken manure, vermicompost and green manure is also added

2.12.7 Pest management

Insect traps are used: They typically use food, visual lures, chemical attractants and pheromones as bait and are installed so that they do not injure other animals or humans or result in residues in foods or feeds.

Pea	**Spreading of ash on leaves ,Weaver ants**
Lady finger	Spraying mixture of garlic and rice water, Light trap

2.12.8 Disease management

Pea	Spraying mixture of rice water and ash
Amarathus	Spraying neem oil emulsion
Lady finger	Neem leaves and onion peels are mixed with base soil/Neem cake is added

2.12.9 Water management

1. Pea , Amarathus and ladyfinger: Sufficient amount of water was made available according to temperature variations.
2. turmeric, ginger: Natural rainfall will provide sufficient water and no excess water management is to be done.

2.12.10 HARVEST

BETTER

CHAPTER 3

OBSERVATION AND DATA COLLECTION

TABLE 1:GERMINATION

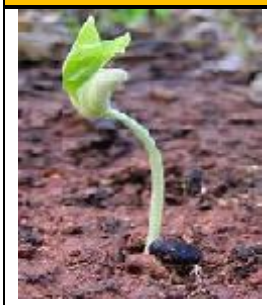
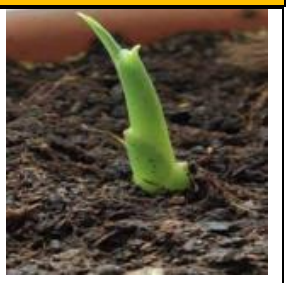
PEA	AMARATHUS	LADY FINGER	TURMERIC	GINGER
				

Table 2:height of the plant(15 days interval)

Pea	amarathus	Lady finger	turmeric	ginger

8 18 25, 38 ,43 Cm in 15 days of interval	5 10 18 28	15 20 45 50 55	16 25 36 48 54	10 28 40 70 80

Table :3 no of branches

Days	Pea	turmeric	Lady finger	amarathus	ginger
0-15	1	1	1	1	1
15-30	5	1	1	1	1
30-45	7	1	1	1	1
45-60	16	1	1	1	1
60-75	17	1	1	2	1
75-90	17	1	1	2	1

Table.4

Day of first flowering (Days After Sowing/ planting)

Pea	Turmeric	Lady finger	amaratus	Ginger
65		70		

Table 5

Day of first fruiting (Days After Sowing/ planting)

Pea	Turmeric	Lady finger	amarathus	Ginger
72	3months	75	1.5 month	219

Table 6

Harvest days (Days After Sowing/ planting)

Pea	Turmeric	Lady finger	amarathus	Ginger
88days	3 months	80days	2 months	230days

Table 7

weight of fruits from each harvest

Pea	Turmeric	Lady finger	amarathus	Ginger
4kg	3kg	2kg	2kg	4kg

Table 8

Cumulative Yield (kg)

Pea	Turmeric	Lady finger	amaratus	Ginger
1kg from 1 seed	1kg from 1 seed	.5 kg from 1 seed	000	2kg from 1 seed

Chapter 4 : photos

4.1 grow bag preparation and layout

Pea	turmeric	Lady finger	amarathus	ginger

4.2 flowering stage

Pea

lady finger

Amarathus

4.3 fruiting stage

pea

lady finger

4.4 harvest stage

ginger

amarathus

pea

lady finger

turmeric

Chapter 5: cost benefit analysis

The cost-benefit analysis indicates that the economic advantages of organic farming help to offset these costs and thereby incur a higher overall profit. The price premiums and lesser requirements of expensive fertilisers and pesticides

make up for the increased labour costs of implementing such a kind of farming process.

A write up on the expenditure incurred and income obtained

	Pea	Turmeric	Lady finger	Amarathus	Ginger
Price	40.00	62.00	15.00	30.00	70.00
Cost of seed	1.00	2.00	0.40	0.75	2.00
Manure	8.00	12.00	3.00	6.00	14.00
Labour	15.00	23.00	6.00	11.00	26.00
Pesticide	5.00	8.00	2.00	4.00	9.00
Total	29.00	45.00	11.40	21.75	51.00
Profit	11.00	17.00	3.60	8.25	19.00

Chapter 6

Conclusion

Inference on the most suitable and profitable crop for - the locality with reasons

Organic farming practices reduce pollution in the air, water, and soil. It also helps conserve water, reduce soil erosion, and uses less energy. "Organic products are the best from nature, and the best for nature," Organic farming is the best and the most viable alternative for traditional farming techniques. The producer of organic farming has high nutritional value in comparison to conventional food.

Abstract

1. **Preparing the soil for cultivation**
   Fertile soil is the major component of organic farming. The soil which was under mulching for years is used because it will contain the right moisture content and humus in it. Liming is done to correct the ph of the soil and the basal manure is made by mixing cow dung, ash and bone manure. According to the crops different organic manures are added at regular interval.
2. **Preparing the seeds and nodes**

The seeds of pea and lady finger are kept for soaking in cow dung water for a day before seeding. Turmeric and ginger are covered in wet cotton cloth for the faster growth of nodes.

3. **Management of crops after planting**

- ✓ At the stage of 2 leaves the soil is loosened and the weeds around the plant is removed
- ✓ At the stage of 5-6 leaves small amount cow dung is added
- ✓ After 3 months vermin compost is added and more soil is added at the base of plants
- ✓ At the stage of flowering and fruiting more manure is added for healthy growth
- ✓ Regular watering is done at all stages
- ✓ For pest and disease management Spreading of ash on leaves ,Weaver ants, Spraying mixture of garlic and rice water, Light trap etc are used