PROJECT REPORT

ON

ORGANIC FARMING

(In partial fulfilment of acquiring Bachelors Degree in BZC Cluster Elective B-III - 2021-2022, Acharya Nagarjuna Nuniversity)

UNDER THE ESTEEMED SUPERVISION OF

Dr. SHAIK MASTAN VALI

and

Dr. N. TIRUPATHI SWAMY

CERTIFICATE

This is to certify that the following students are involved in Organic Farming Project Work in partial fulfilment of Bachelor Degree (BZC), Cluster elective B3. The efforts of the students put in this project work are appreciated.

List of students

Group:1(Bean, Cluster bean, Ladyfinger, Beet root, Raddish)

1.P. Jameema (Group Leader) Regd.No. Y193037031

2.M. Maneesha Regd.No.Y193037032

3.R. Prasanna Regd.No.Y193037033

4.Sk. Mahaboob Jani Regd.No. Y193037030

5.K. Kavitha Regd.No. Y193037019

6.A. Naveen Regd.No. Y193037003

7.A. SirishaRegd.No. Y193037005

Station: KANDUKUR

Date: 22.06.2022

Signature of the External Examiner

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NAAC Accredited B
KANDUKUR-523 105, Prakasam Dt.

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List of students

Group:2(Amaranthus, Spinach, Menthi, Ribbed guard)

1.J. Neelima (Group Leader) Regd.No. Y193037014

2.Sk. Anjum Regd.No.Y193037034

3.S. Maneesha Regd.No.Y193037035

4.N. Vengala Rao Regd.No. Y193037029

5.M. Mahendra Regd.No. Y193037021

6.K. Sowjanya Regd.No. Y193037018

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Date: 23.06.2022

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List of students

Group:3 (Tomato,Mirchi,Keera)

1.P. Maneesha (Group Leader) Regd.No. Y193037032

2.V. Chandana Kaveri Regd.No.Y193037039

3.G.Bhagyalakshmi Regd.No.Y193037010

4.D.Meghana Regd.No. Y193037008

5.G.Sandhya Rani Regd.No. Y193037013

6.M.Venga Veni Regd.No. Y193037022

7.Ch.PraveenRegd.No. Y193037007

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AKNOWLEDGEMENT:

We are very thankful to our concerned university authority for designing such a nice curriculum enriched with project works. These projects works sharpen our inherent skills and train us to write the scientific documents. It not only sharpens our research ability but also make us to learn several things. For this we would like to thank the concerned university authorities who incorporated the project work in our syllabus.

We are profusely thankful to our CCE, Vijayawada for encouraging students to take up such projects. We are very thankful to our college Principal Dr. M. Ravi Kumar garu for his constant encouragement and supervision and financial support throughout the completion of this project without whose support this project couldn't turn to a reality.

We are very thankful to the Jillellamudi Venkateswarlu, Expert Organic farmer for giving us permission for the field visit, where the idea of Organic farming was born in our minds. He is the man who taught us what organic farming is and the practices that are followed in the Organic farming. His efforts in training us in different aspects of Organic farming is unforgettable. We are really thankful to the V. Sunitha, AP CNF for sharing her knowledge on Organic farming with us.

We are very thankful to our Botany department faculty, Dr. Shaik Mastan Vali and Dr. N. Tirupathi Swamy for their guidance and encouragement throughout the successful completion of this project.

We thank all the departments of our college especially NSS, NCC and ECOCLUB and Physical Education Department for their constant support and encouragement in successful completion of this project.

We are really thankful to all the students who directly and indirectly involved in the successful completion of this project.

Last but not least, a special mention of our non teaching staff in safe guarding the plants is note worthy. We specially thank our Organic farm, Botanical garden care taker D. Dhana laxmi for her efforts in maintaining the garden in good condition. We

also thank the local farming community for giving the important tips on Organic farming

Our acknowledgement wont be complete without referring the workers involved in the establishment of the Organic farm. We thank all the persons who are directly and indirectly involved in the successful completion of our project.

OBJECTIVES:

- **To start the Organic farming in our college premises**
- **To Produce the pesticide residue free food**
- **To Acquire the knowledge of preparing different organic fertilizers and Organic pesticides**
- **To grow different leafy vegetables and tomato and Mirchi through organic farming**
- **To Grow cucurbits like Ribbed guard, and Water melon in our college through organic farming**
- **To Produce underground root crops like radish and Beetroot along with *Dolichos* and *Abelmoschus* through organic farming**
- **To master the art of nutrient, water, weed and disease management.**

ORGANIC FARMING

STUDENT GROUPS IN THE PROJECT WORK

GROUP 1 (DOLICHOS, ABELMOSCHUS BEET ROOT RADISH)

1. P. JAMEEMA, GROUP LEADER, (7995233146)
2. M.MANEESHA (6231088619)
3. R. PRASANNA (7330984557)
4. SHAIK MAHABOOB JANI (7207104205)
5. KAVITHA (9618709334)
6. A. NAVEEN (8096916483)
7. A. SIRISHA

GROUP 2 (AMARANTHUS, METHI, RIBBED GUARD)

1. J. NEELIMA (8008169705)
2. K. SOWJANYA (6301821707)
3. SHAIK ANJUM (7780608201)
4. SINGAM MANEESHA (7671941900)
5. M. MAHENDRA (9346927434)
6. N. VENGAL RAO (9398535811)

GROUP 3 (PRODUCTION OF TOMATO, MIRCHI, KEERA)

1. P. MANEESHA (8919716873)
2. V. CHANDANA KAVERI (9392748367)
3. G. BHAGYA LAKSHMI (9381860632)
4. D. MEGHANA (9441209742)
5. G. SANDHYA RANI (9347292032)
6. M. VENGAVENI (7675890745)
7. CH. PRAVEEN (9347927342)

METHODOLOGY:

Organic farming Project involved following steps

1. Field visit to the near by organic farm in Venkatadripalem village
2. Decision taken in the college to start the organic farming project in the college
3. BZC final year students were selected to start the project
4. Students are grouped in to three groups based on the plant they grow in the college garden
5. Preparation of land for Organic farming
6. Seed treatment
7. Sowing of seeds
8. Preparation of fertilizers and pesticides
9. Nutrient management
10. Water Management
11. Weed Management
12. Pest Management
13. Disease Management.
14. Harvesting the Crop
15. Sale of produce to the college staff

Under the leadership and guidance of Principal of the college our two of our Botany staff members along with Principal first visited the Organic farm in venkatadripalem village which is near to our TRR Govt. Degree college Kandukur. Later we were taken to the organic farm field visit on January 6th . there we met the Jillellamudi Venkateswarlu, an expert farmer who taught us the basics of Organic farming. On the same day we prepared few of the organic fertilizers with the knowledge we gained from the farmer.

Our Botany Department with the permission of the principal has taken permission to start the Organic farming in our college. As a part of Cluster Botany Curriculum we have taken up the Organic farming project in the final semester of our studies. Once the decision is taken at the higher level we were motivated to take up the project by the Botany faculty. For the sake of convenience we were grouped in to three groups based on the type of plant we are going to raise through the Organic farming. Our first group headed by P. Jameema selected beans, ladys finger and root crops like radish and beet root to grow. The second group headed by J. Neelima has selected the leafy vegetables and cucurbits like watermelon

and ribbed guard to grow in our garden. The third group headed by P.Maneesha selected the tomatoes and chillies plants.

As a part of preliminary preparation we selected the Palm Garden which is located in the backyard of our college to start the Organic farming. The land is roughly 1.5 cent in area and sufficient to practice the Organic farming. Soil test is done to know the carbon content and other macro elements in the land. Soil is slightly alkaline and deficient of many macro and micro elements. So we decided to increase the fertility of the land. We used nine types of food seeds in the garden to raise the crop. After one month the plants are ploughed in to the field to increase the soil fertility.

Later we divided the land in to three different plots to grow the desired vegetables. In one plot which is parallel to the fencing we decided to grow the cucurbits. IN the other two plots one is alloted for root crops, beans and ladies finger and the other plot is alloted to grow the chillies and tomato.

SEED TREATMENT:

Seed treatment is a process of strengthening the seed from harmful pathogens. The seeds and seedlings in the initial stages of growth are subjected to different pathogens and may fail to germinate. So to check this the seeds are treated with Pancha Gavya which enhances the seed germination.

Sowing of seeds

Sowing of seeds is an art that should be mastered for the better germination of seed. V. Sunitha and J. Venkateswarlu expert farmer of Organic farming helped us in seed treatment and sowing of the seeds. Different seeds require different depths to be sown. Most of the seeds are sown few centimeters from the top soil after seed treatment. Mass sowing program was organised to sow the seeds. The students from other groups who are not involved in the project also participated in the project.

Preparation of different Organic fertilizers :

Organic farming is found to be more favorable for farmer. Production of crops without use of the chemical fertilizer and pesticide is called organic farming. In this method of cropping anything which is naturally available can be utilized other then chemical fertilizer and toxins e.g. (farm yard manure, green manure, natural salt without any chemical reaction). We can

achieve our production goal if we use organic farming on scientific basis. It is also a wrong perception that organic farming decreases the yield. The worth of crop grown by organic method is more than that of chemical fertilizer and cost of production is also lesser. Positive effect is shown on the crops cultivated organically for a long period of time. Organic farming improves the physical, chemical and biological properties of the soil. Our soil health has been declined due to the prolonged usage of chemical fertilizers. Use of chemical pesticides resulted in killing of many beneficial bacteria and other microorganisms; on the other hand they have harmful effect on human beings and environment as well. Keeping all these factors under consideration organic farming is beneficial. Whereas, this idea is totally wrong that it can be done in developed and rich countries only.

Generally people have a misconception that organic farming only means application of Farm Yard Manure to the soil. Though in reality it is just a part of organic farming and constitutes only 10% of the organic farming while the rest 90% comes from other sources. For example decomposition of FYM is absolutely necessary because carbon and nitrogen content in fresh manure are not in dissolved form and therefore cannot be utilized. Manure contains 60-90% carbon and 0.5-5% of nitrogen. In addition there is phosphorus along with other macro- and micronutrients.

Compost;

A mixture of organic matter, as from leaves and manure, that has decayed or has been digeste d by organisms, used to improve soil structure and provide nutrients. Apart from manure, sugar cane straw and crop residues can also be used to prepare compost. Nothing can replace the uniqueness of compost, 25% of the applied chemical fertilizer would be taken up by plants and rest would be lost to either air through volatalization or to the soil through leaching and the remaining will be denitrified anaerobically by soil microbes. This means there is no reservoir of chemical fertilizer in the soil. In contrast, plants utilize 30-40% of compost in the form of humus and rest would be stored in the soil for the next cropping season this will eventually increase the soil fertility and productivity.

Method for preparation of compost

In order to prepare compost mix 25% of domestic manure, 25% poultry manure add bagasse or press mud and make it to 50%. We can also use kitchen organic waste, fallen leaves from

trees, residues of vegetable and fruit. Next prepare a solution of yeast by dissolving 400 grams of yeast in 500L of water and shake it thoroughly. Spray it on 10 ton mixture of FYM/ poultry manure and press mud then mix it and cover it with plastic sheet .This 10 ton fertilizer will ready within three weeks Effective Microbial Mixture can also be used instead of yeast.

To make this compost more effective we can add 15 kg dry blood, 150 kg rock phosphate, 150 kg gypsum and mix them with yeast/EM solution and cover it with plastic sheet. After 3 weeks pack this grounded organic fertilizer into 50 kg bags. 250 kg /acre is the recommended dose of organic fertilizer which contains 15 kg N, 20 kg P, and 10 kg K, and 30 kg micronutrient.

Effect of organic fertilizer on crops

Crop produced from organic forming is tastes better and is rich in nutrients. Bacteria and other microorganism present in the organic fertilizer are the cause of increase in organic content and nutrient availability to the crop. Sometimes organic production is not up to mark but it is not exposed to toxic chemicals.

Advantages of organic fertilizer application

Improve soil health

Organic matter is essential for having healthy soil. Organic fertilizer is composed of only natural material, which makes it an excellent additive for soil that are nutrient deficient. The organic matter in the fertilizer also helps the soil to retain moisture and increase its workability. Farmer depends on a soil that is plough able but the soil that is too hard or soft will not support plants effectively. Another great benefit of organic fertilizer is that it increases air flow through the soil which allow plant root to breathe. In some cases chemical fertilizer change the pH of soil due to excess nutrients which are not effectively absorbed by plants. Organic fertilizer do not have this problem because they slowly break down and release nutrients at a rate, which allows plants to absorb them naturally and completely with no waste and excess.

Improve plant growth

The basic purpose of organic fertilizer is to improve the soil quality amending it with nutrients it may lack. The international fertilizer industry association defines fertilizer as material containing 5% of more of the three essential plant nutrients; N, P and K. Nitrogen is vital for plant growth earth's atmosphere contain about 78% nitrogen. However this atmospheric form is not feasible for plant.

Organic fertilizer provide nitrogen, in a utilizable form which will help improve plant growth while neither burning roots nor destroying beneficial microorganism in the soil

Disease prevention

A healthy plant has the biological capacity to fend off some cases of disease. When plant is stressed due to lack of nutrients, its growth slows, its defense against disease –carrying bacteria and fungi weakens. Organic fertilizer help prevent diseases by meeting the plant nutritional needs. This action removes the serious source of stress.

Parasite prevention

Fertilizer can help plants resist parasitic infestation by insects and other agents. Parasite may attack plants at site of injury. A healthy plant has the ability to rapidly recover from such injuries and restore homeostasis, setting up a barrier against parasites. In addition to healthy growth organic fertilizer play another role in parasite prevention. A vegetable planted with organic fertilizer attracts less insect pests.

There are different fertilizers and pesticides used in Organic farming some of them are

1. Panchagavya

2. Brahmastra

3. Agniastra

4. Jeevamrut

5. Neemastra

6. Dasagavya

7. Sanjeevak

8. Amrutapani

9. Mattidravanam

Panchagavya or Panchakavya

How to make Panchagavya or Organic fertilizer using Cow by-products.
Panchagavya is prepared from cow dung, curd, ghee, urine, and milk. This is the best organic homemade
Things you need for preparing Panchagavya

1. Fresh Cow Dung-3Kg
2. Gee-1/2Kg
3. Curd-1/2 liter
4. Cow Urine -2 liter
5. Milk-1 liter
6. Water 3 liters
7. Container to mix

Preparation of Panchagavya organic fertilizer

- Take fresh cow dung and mix with gee, then cover it with a cotton cloth and keep it aside place for 4 to 8 hours.
- Add water and then mix it well and cover with a cotton cloth for 3 days for better results.
- Then add some milk, curd, and cow urine. Mix it well.
- The mix should be stirred well in the evening and morning for about 21 days.

How to use Panchagavya

To use Panchagavya dilute it with 30 times of water and it is ready to use as a Liquid fertilizer. To use Panchagavya as a foliar spray separate or filter the liquid using a cotton cloth to separate the waste. If you do not filter the liquid it will block your spray nozzle.

As a fertilizer, we use it once every two weeks during the normal growth of a plant and once a week during flowering and fruiting. And, as a foliar spray, we use it every week. We have noticed that when Panchagavya is sprayed all pests disappear and start to make an appearance after about a week. Hence we spray once in a week. Spraying must be done early in the morning or late in the afternoon. Plants and leaves should be dry when you spray Panchagavya. You can spray it between 8-9 AM on a normal day in the morning time. In the evening spray about an hour before the sunset and do not waste your Panchagavya on rainy days.

Effect of Panchagavya in plants

Leaf – Plants sprayed with Panchagavya invariably produce bigger plant leaves and develop denser canopy. The photosynthetic system is activated for enhanced biological efficiency and enabling the synthesis of maximum metabolites and photosynthates.

Roots-The rooting is profuse and dense. Further, they remain fresh for a long time. The roots spread and grow into deeper layers were observed. All such plant roots help maximum intake of nutrients and water.

Yield- The key feature of Panchagavya is its efficacy to restore the crop yield level of all crops when the land is converted from an inorganic cultural system to organic culture from the very first year. The harvest is advanced by 15 days in all the plants. It not only enhances the shelf life of vegetables, fruit plants, and grains but also improves the taste. By reducing or replacing costly chemical inputs, Panchagavya ensures higher profit and also liberates the organic farmers from the loan.

Preparation of Brahmastra organic fertilizer

Brahmastra is a natural insecticide/pesticide. Brahmastra Control Bigger Caterpillar and Bigger Pests.

Ingredients for preparation for Brahmastra are Cow urine, castor leaf, Indian beech, and Neem

- 20 Liter Cow Urine

- 2 Kg Neem Leaves and Stems
- 2 Kg Castor Leaves and Stems
- 2 Kg Mango Leaves and Stems
- 2 Kg Indian Beech Leaves and Stems

How to prepare Brahmastra

- Make Paste of Individual Leaves and Stems
- Keep it separately
- Put all these in a Big Vessel
- Mix all the components and stir clockwise
- Keep this Big Vessel for Cooking
- Leave it for cooling for 48 hours
- Shaded Place. Not expose to Sunlight / Rain
- Cover with Cloth
- Filter with a cloth and then put in a bottle or can
- After 48 hours ready for usage
-

Preparation of Agniastra organic fertilizer

How to prepare Agniastra

It acts as manure for the soil and plants and it can remove all kinds of pests, insects and increase the richness of the soil. Moreover, it acts as an enriched for the greenery of the plant, can be used for vegetables, fruits, flowers, and other agriculture crops.

The below ingredients will get you 2 liters of Agniastra solution.

Ingredients of Agniastra

- Tobacco – 50 gm
- Green chilies – 50 gm
- Garlic – 50 gm
- Neem leaf – 500 gm
- Cow urine – 1500 ml

Grind all the above ingredients into a fine paste and then mix with cow urine. Boil this for 4 times. Then, leave it for 48 hours, filter it, and mix some water and sprinkle over the plants.

You can save and use it for 3 months. Spray this medicine Agniastra on the pest such as Leaf Roller, Stem Borer, Fruit borer, and pod borer.

Method of Agniastra preparation

- Add 10 Liters of Cow's Urine to the Pot.
- Crush the Tobacco and add them to the urine.
- Then, crush the Green Chillies and add them as well.
- Crush the Neem Leaves and add the pulp as well.
- Boil this mixture continuously for 5 times.
- Allow this solution to ferment for 24 hours and filter the solution using a cloth and use it.

The pesticide must be kept in the shade and then covered with a wire mesh to prevent houseflies from laying eggs and the formation of maggots or worms in the solution.

Preparation of Jeevamrut organic fertilzier

Jeevamrut is a combination of two words – Jeevan + Amrut. Jeevan means life and Amrut means medicinal potion. Jeevamrut is an excellent source of natural Carbon, Nitrogen, Phosphorous, Potassium, and other micronutrients which are mainly used as natural manure in Organic farming. As compared to other forms of Manure, Compost, and Vermicompost; Jeevamrut can be prepared very easily and quickly. It along with other manure can also be very beneficial for crops. It is liquid organic manure popularly used as a means of organic farming. It is considered to be an excellent source of 'natural carbon', 'biomass', 'Nitrogen', 'Phosphorous' 'Potassium', and a lot of other micronutrients required for the plants.

Benefits of Jeevamrut

- Acts as an agent to increase the microbial count and friendly bacteria in the soil.
- Improves the pH of the soil.
- Jeevamrut can be made within 4 to 5 days so it can be used effectively and frequently.
- Suitable for all crops and increases the yield.
- Reduces the costs of chemical fertilizers.

Preparation of Jeevamrut

- Take 200 liters of water in the barrel.
- Take 10 kg local cow dung (Indian breed) and 5-10 liter cow urine and add it in water.
- Add 2 kg jaggery, 2 kg pulses flour, and handful soil from the bund of the farm in the barrel.
- Then stir the solution well and keep it for 48 hours in the shadow. The mixture needs to be stirred a couple of times for a minimum of 10 minutes. It gets fermented. After 48 hours Jeevamrut is ready to use. It can be used for 2-3 days.
- After 8 days of preparation, bacteria start reducing which are present in liquid Jeevamrut.

Preparation of Neemastra organic fertilizer

Materials Required for Neemastra

1. Water 200 liters for one acre of land.
2. In cow-urine 50 ml per liter of water.
3. In cow's dung 10 grams per liter of water.
4. In crushed neem leaves (with thin stems) or neem seeds powder 50 gm per liter of water.

How to prepare Neemastra

Step 1) Mix all the above ingredients in a plastic or cement tank. Make sure there is no lump in cow's dung and use a wooden stick to mix the mixture of the ingredients. The wooden stick must be rotated in the mixture according to the clockwise direction so that positive energy spreads in the mixture.

Step 2) Then, cover the tank with a jute sack or poly net. The tank must be in shadow and the tank should not be directly exposed to sunlight or rainwater. Leave the mixture for 48 hours for fermentation.

Step 3) Using a wooden stick for at least 1 minute, mix the mixture in a clockwise direction in the morning and evening every day.

Step 4) Filter the mixture and use it after 48 hours.

Use – The mixture must be sprayed on plants. Do not mix the water in the mixture, sprinkle the same mixture.

Preparation Dasagavya organic fertilizer

It is an organic growth promoter for crops, which is prepared by mixing certain plant extracts along with Panchagavya.

How to prepare Dasagavya

Ingredients for preparing Dasagavya is cow dung 5 kg, cow urine 3 liters, cow milk 2 liters, curd 2 liters, cow deshi ghee 1 kg, sugarcane juice 3 liters, tender coconut water 3 liters, banana paste of 12 fruits and toddy or grape juice 2 liters.

- Mix cow dung and ghee in a suitable container and ferment for 3 days with intermittent stirring. Add the rest of the ingredients on the fourth day and ferment for about 15 days with stirring twice daily.
- Then, the formulation will be ready in 18 days. Sugarcane juice can be replaced with 500 grams jaggery in 3 liters water. In case of non-availability of grape juice, 100g yeast powder mixed with 100 g jaggery and 2 lit of warm water can also be used.
- For foliar spray 3-4 liters, Dasgavya is diluted with 100 liters water.

Advantages of Dasgavya

- Increases plant growth, yield, and quality of the crops
- Controls pests such as aphids, thrips, mites, and other sucking pests
- Control diseases like leaf spot, leaf blight, and powdery mildew, etc.

Preparation Sanjivak organic fertilizer

What is Sanjivak

Sanjivak is an organic nutrient used for enriching the soil with microorganisms and quick residue decomposition.

Ingredients to prepare Sanjivak

- Water-300 Liters
- Jaggery-500 grams
- Cow urine(Gaumutra) 100 liters
- Cow dung 100 to 200 kg's

How to prepare Sanjivak

- Mix 100-200 kg cow dung, 100-liters cow urine, and 500 g jaggery in 300 liters of water in 500 liters closed drum
- Keep it in a drum for 10 days for fermentation
- It should be diluted with 20 times water

Preparation of Amrutpani organic fertilizer

Amrutpani is used to improve soil fertility.

Materials required for Amrutpani

1. The fresh cow dung of Indian breed – 1 kg.
2. Cow urine of Indian breed – 1 liter.
3. Jiggery – 50 grams (sugarcane juice can be replaced with 2 glasses or raped six bananas)
4. Water – 10 liters.

How to prepare Amrutpani

Phase 1:

1. Take a container of plastic or wood, add water and jaggery to it and mix it well.
2. Mix fresh cow dung and cow urine in the mixture, stirring the mixture with a wooden stick.

Phase 2:

Mix the water again in the mixture and stir it slowly in the same direction and bind the container's face to the clothes.

Phase 3:

Amrutpani is ready for use in 4 days, mixed with wooden sticks 3 times a day.

Use of Amrutpani

- Mix one liter of nectar-water with 10 liters of water and use it.
- Use Amritpani to irrigate it every week.
- The root treatment should be done 30 minutes before planting.
- Dried leaves or dried sugarcane leaves are soaked in Amrutpani and used as mulch.

- By giving water to plants using Amrutpani every week, Amrutpani keeps the soil alive and enriches nutrients.
- If the sprouting of nectar-water once in a week or 14 days, the infection of pests on plants can be reduced, as well as better use by the foiler-spray.
- Before planting soak the seeds in nectar-water for 24 hours, after which use of seed yields better germination rate and stronger plants.

NUTRIENT MANAGEMENT:

Soil is the main source of nourishment to the plants. It provides necessary Macro and micro elements to the plants. The soil deficient in minerals will be sterile and gives less yield. Before starting the organic farming in the preparation of land 9 different seeds are sown in the land and allowed to grow for one to two months. When the plants are grown for considerable height they are ploughed in the soil through the process called mulching. This mulching process is essential to increase the fertility of the soil. In our college we have solid waste management unit under which the wet and dry solid organic waste is separated and channeled for vermicompost preparation. We nourish our plants with vermicompost prepared in our college. Green leaf manure is also prepared from the decomposed leaves and litter. In addition to this every week Organic fertilizers are given to the plants as per the requirement. Drava Jeevamrutham prooved to be most effective fertilizer in our garden. The point not to be missed in our project is that we have Azolla biofertilizer in our Garden. We cultivate the Azolla fertilizer in Azolla pond. The dried Azolla powder is also used to nourish our plants.

WATER MANAGEMENT:

In our Palm garden where we have taken up the organic farming, three tap connections are present. The water is efficiently used for the crops grown in our college. Daily in the morning hours our gardener water the plants. Channels are made in the field for proper distribution of water to the plants. Any necessary ingredient required for the plants is mixed with the water and poured in to the channel for uniform distribution. In our college we have dug four Rain Water harvesting pits to increase the water table level. After qcquiring funds we are planning to go for drip system for more efficient usage of water.

PEST MANAGEMENT:

Pest are the serious threat to the plants. Nearly 20 % of the crop loss is done by the pest. As we following organic farming/ Natural farming we do not use chemical pesticides. We use Neemastra and Panchagavya to remove the pest. It is found that the neemastra proved to be more effective pesticide in our field. Mattidravanam also eradicate some nematode pests.

WEED MANAGEMENT:

Weeds are the unwanted plants that grow in the wanted place. They compete with the crop plants for water space and nutrition. Regular weeding of the plants is very important for the better growth of the crop plants. No chemical or herbicides are used to weed out the plants. All the students involved in the organic farming process involve in the weeding out of weeds. Hands, Spades, Knifes and daggers are used for weeding out the plants. It is a regular practice in the field. Every day Half an hour is allotted to weed out the weeds from the organic field. The most common weed we found in the field is *Parthenium* and *Eupatorium*. In future up coming projects we wish to use the Biopesticides to eradicate the pests from our fields.

DISEASE MANAGEMENT:

Diseases are identified based on the symptoms. The most commonly found symptoms in our crops are leaf mottling and Chlorosis, Most of the symptoms are related to the nutritional problems. The only disease we come across is the powdery mildew observed in Ribbed guard. Mattidravanam is most effective against this disease. The diseased plants are first identified Based on the damage done they are totally removed from the field to stop the spread of the disease. Regular removal of the discolored leaves and necrotic leaves will the check the problem to certain extent. Excess watering the some plants also led to damping off disease where their roots are damaged. Regular monitoring and removal of diseased parts of the plants have given better results in our disease management.

HARVESTING THE CROPS:

Except the root crops most of the vegetable crops are harvested in three to four months of their lifespan. Harvesting is done in the evening hours. Lady's finger and Ribbed guard proved to be among the best crops in production. Every day we used to get 1- 2 kg of vegetables from our farm which are free from pesticide residues.

SALE OF THE PRODUCE;

Our first production sold to our college Principal and remaining daily produced vegetables are sold to the staff of our college. The money we get from the selling of vegetables is used for making fertilizers and purchasing seeds. The price of the product is fixed more than the market price as these are organic vegetable which are free from any contamination and good for health.

RESULTS:

The organic farming that we under took in our palm garden yielded best results. All the crops except the coriander were successfully grown. The most productive crops are Ribbed Guard, Abelmoschus and Methi. The success of our organic farming lies in efficient nutrient, water weed pest and disease management that we practiced in the field.

Table: 1 (Production of crops)

S.No	Name of the Crop	Number of seeds sown	Production(Kgs)	Diseases if any
1	Abelmoschus esculentes	60	25	-nil
2	Luffa acutangularis	70	40	DownyMildew
3	Lycopersicon esculentum	20	10	Chlorosis
4	Capsicum frutiscens	20	2	Leaf curl
5	Amaranthus viridis	200	10	nil
6	Spinach	100	10	nil
7	Beta vulgaris	50	2	nil
8	Raphanus sativus	50	1	nil
9	Dolichos lab lab	20	02	Leaf burn
10	Citrullus vulgaris	10	10	DownyMildew
11	Mentha viridis	30	3	Nil
12	Hybiscus cannabinus	30	5	Nil
13	Momordica charantia	10	3	Downy mildew
14	Cucumis sativus	20	NIL	Chlorosis
15	Cyamopsis tetragonalabo	10	05	Nil
	Total	720 SEEDS	128 kg	

OBSTACLES FACED DURING ORGANIC FARMING

The first and foremost obstacle we faced is the knowledge transfer of Organic farming. Though our faculty of Botany are doctorates they have minimum knowledge in Organic farming. This obstacle is cleared by our Principal of the college. His initiative and guidance paved a smooth transfer of knowledge from organic farming experts to our faculty and students.

The second obstacle we faced is uneven and low fertile land. This is overcomed by active and mass participation of our students with technical support from experts.

The third obstacle and most important obstacle is who will take the responsibility of the organic farming site. The BZC students of the college has taken over the responsibility of maintaining the practice. During holidays and vacations gardener and other office subordinates will take over the charge of watering plants and their maintenance.

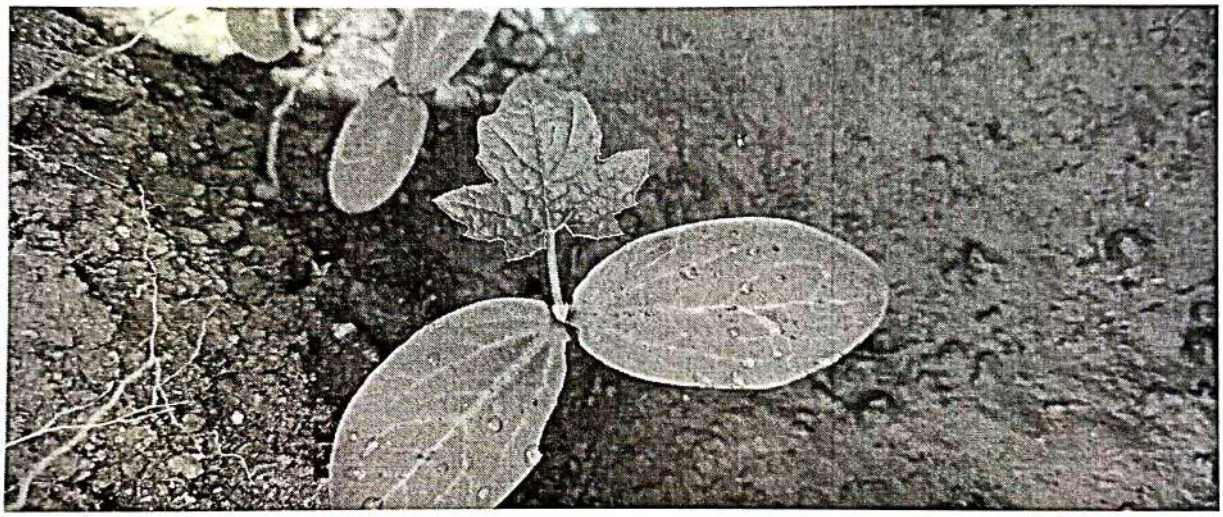
The fourth obstacle we come across is the leaf spoilage of plantlets. The students brought this to the notice of staff and sprayed mattidravanam to solve this problem. All the plants are growing healthily up to this stage and the students along with the staff are looking anxiously forward for the production.

Conclusion:

The joy of producing the healthy produce is unexplainable in words. All the students involved in Organic farming are enjoying it. This practice really created a work culture, responsibility and accountability among the students and staff. So many farmers and parents of the students visited our organic farming site and appreciated the students and staff involved in the practice. It is our small attempt to change and divert our local public towards healthy produce. We think the work is half done. In future we will conduct seminars and workshops on Organic farming and dissipate the organic farming practice to our nearby local farmers as a part of social responsibility of our institution.

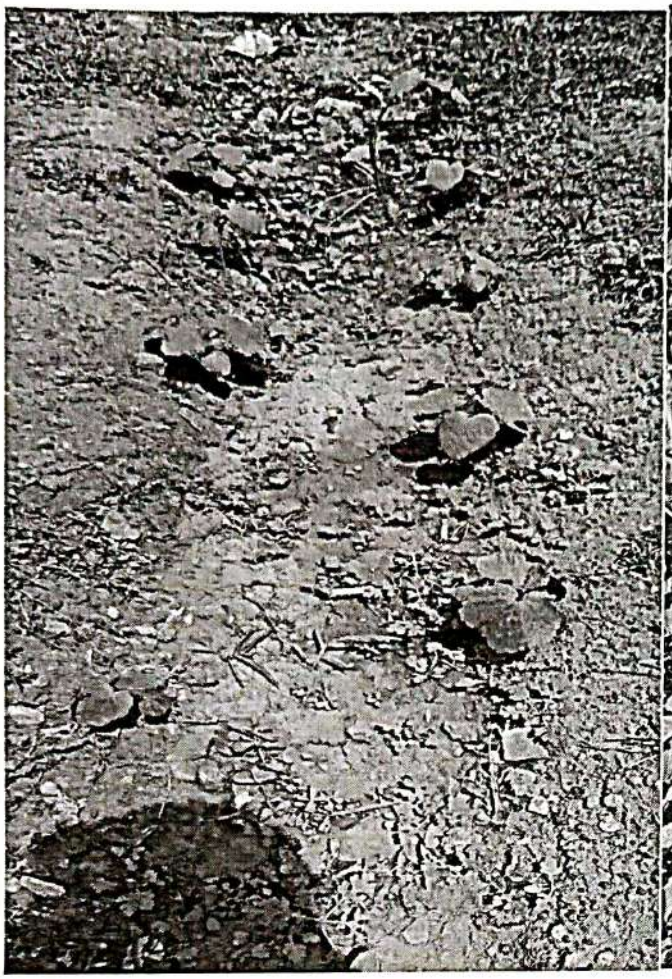
CROP WISE PHOTOS:

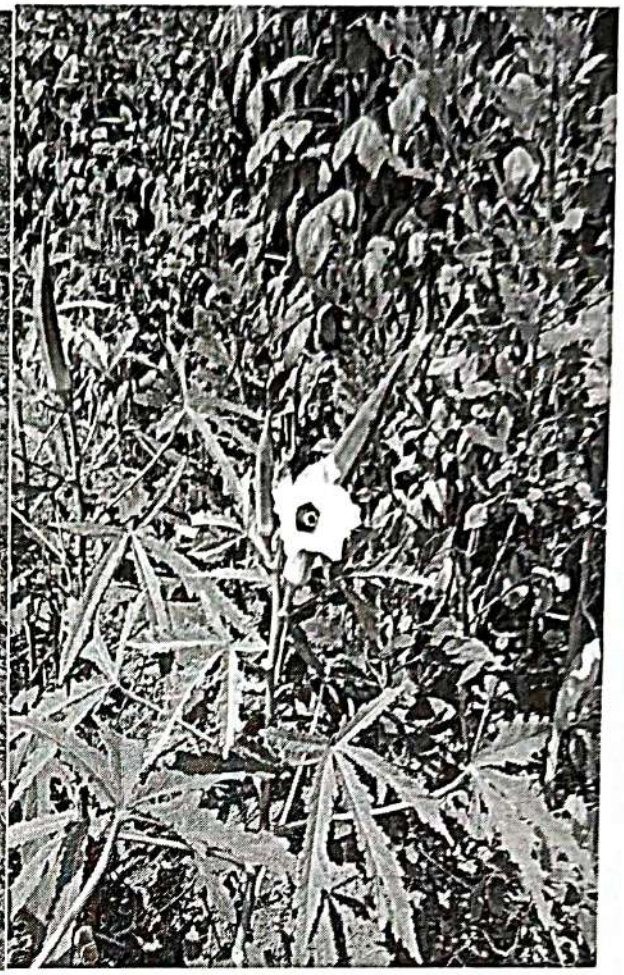
RIBBED GUARD

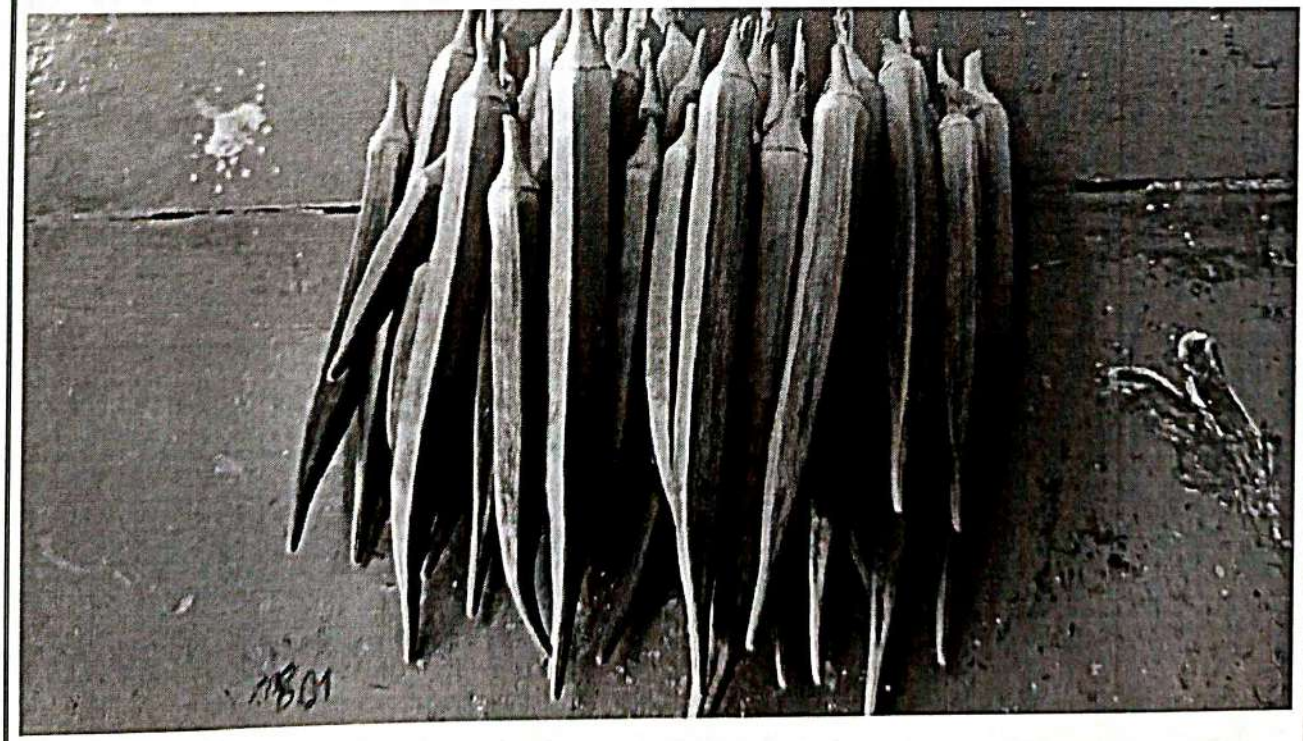


WATER MELON:

LADY'S FINGER:





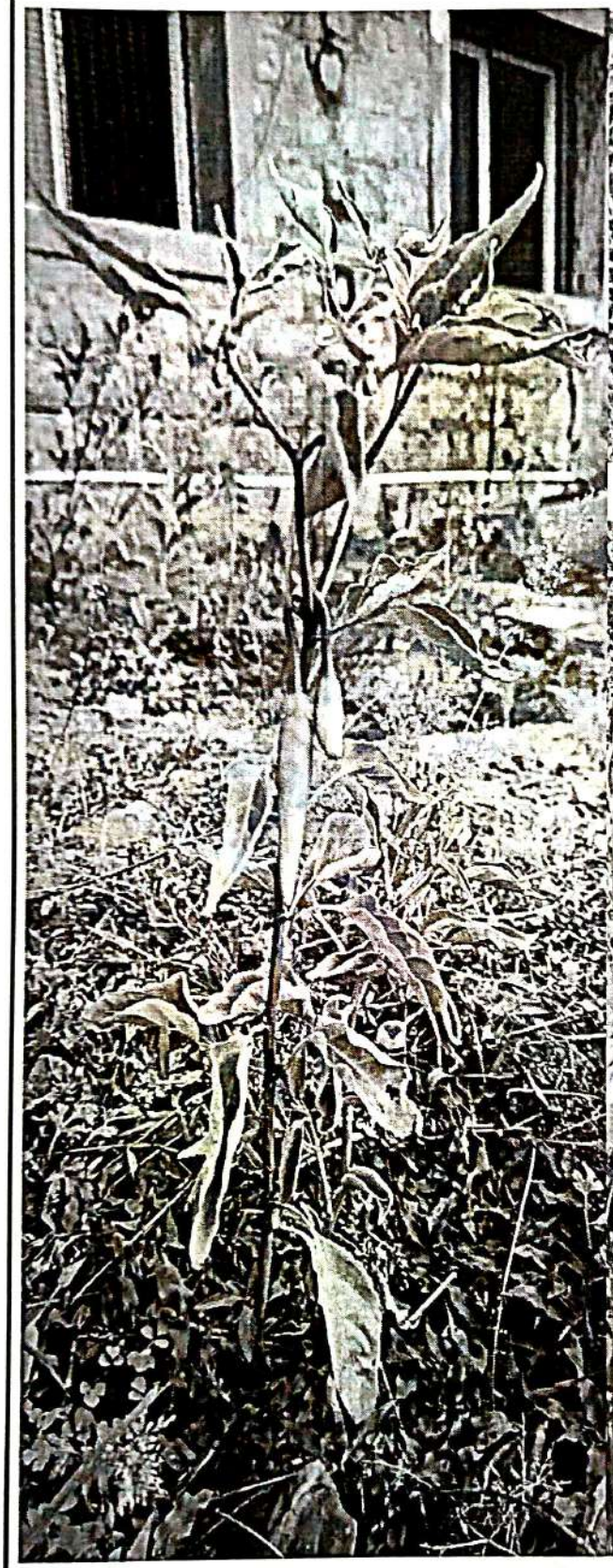


CLUSTER BEAN:

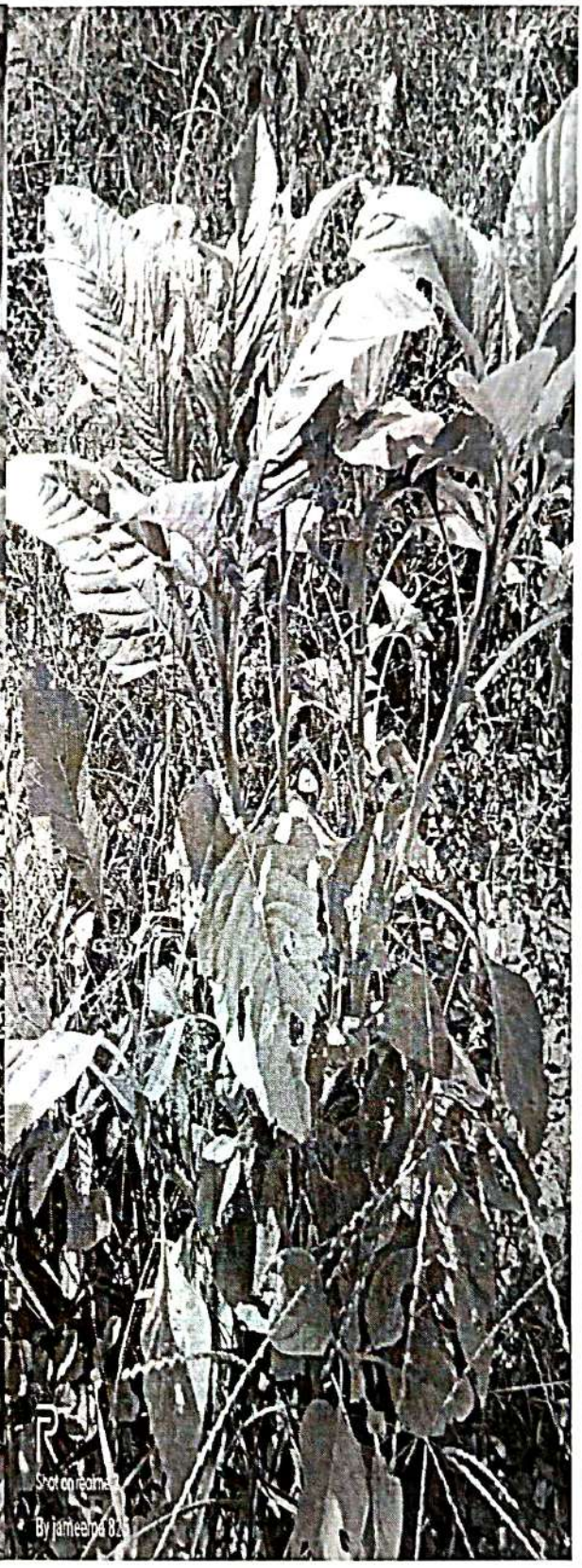
TOMATO:

BITTER GUARD:

MIRCHI

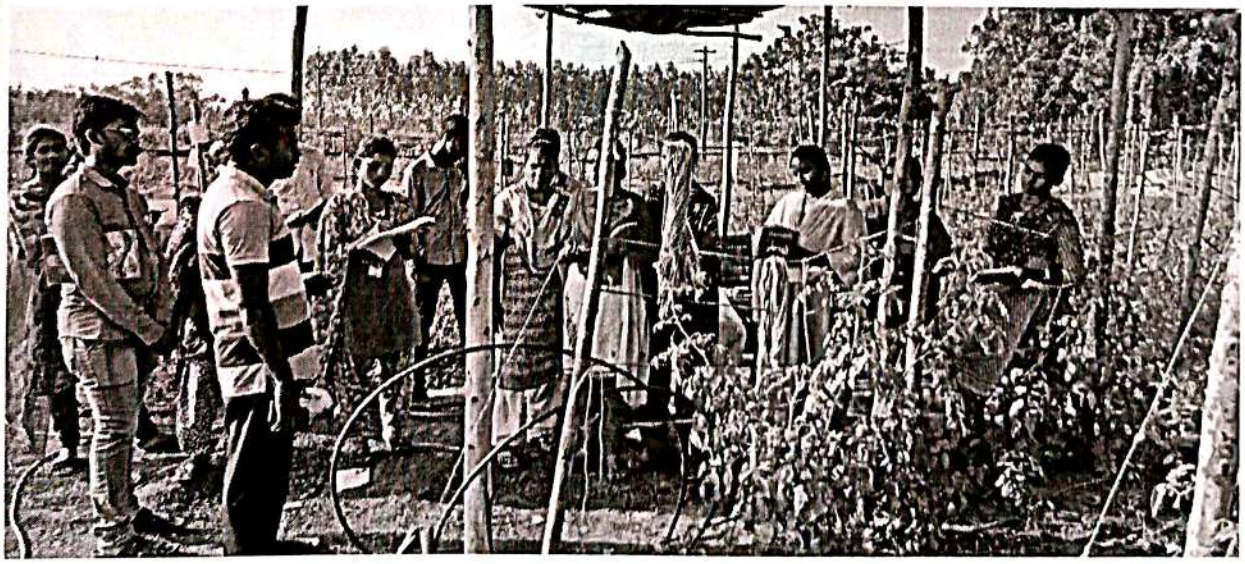


AMARANTHUS

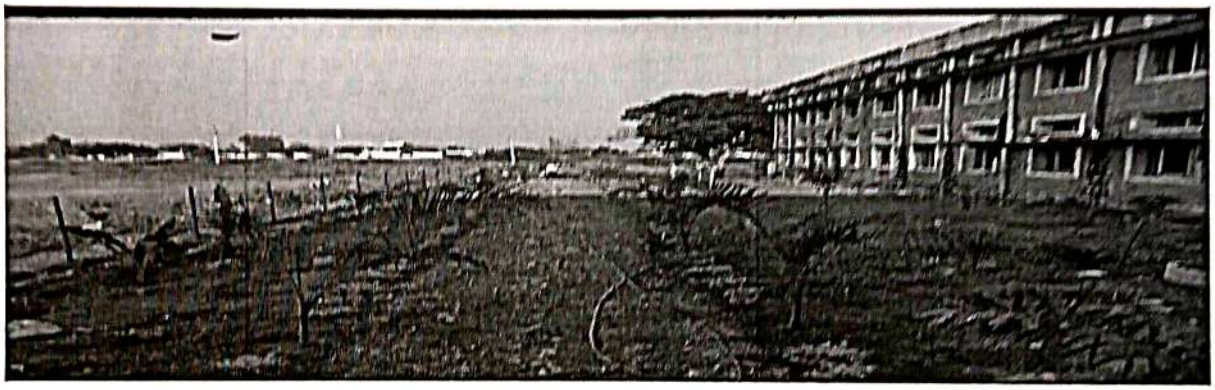


FIELD VISIT BY BOTANY DEPARTMENT FACULTY AND PRINCIPAL

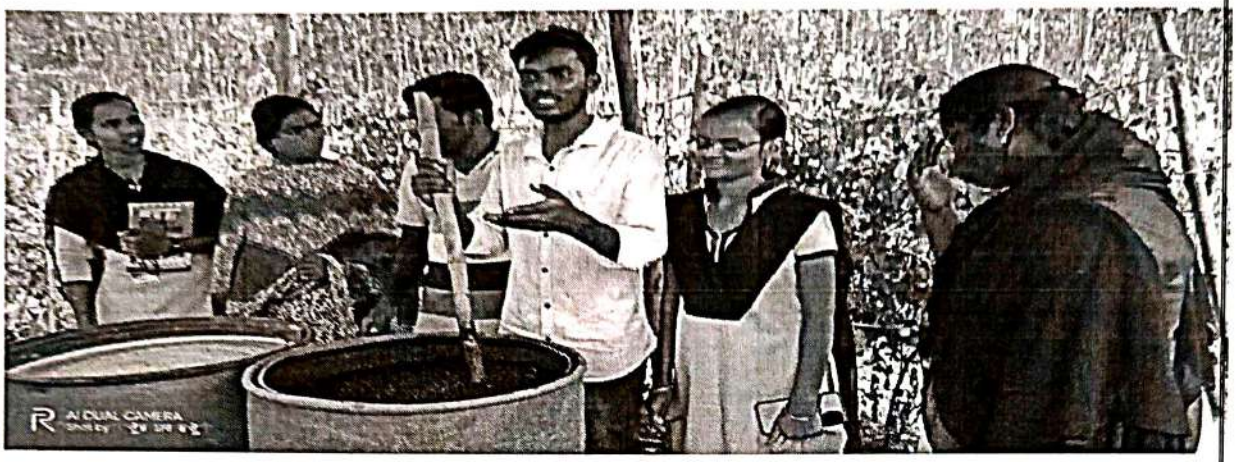
STUDENT FIELD VISIT TO VENKATADRIPALEM ORGANIC FARM

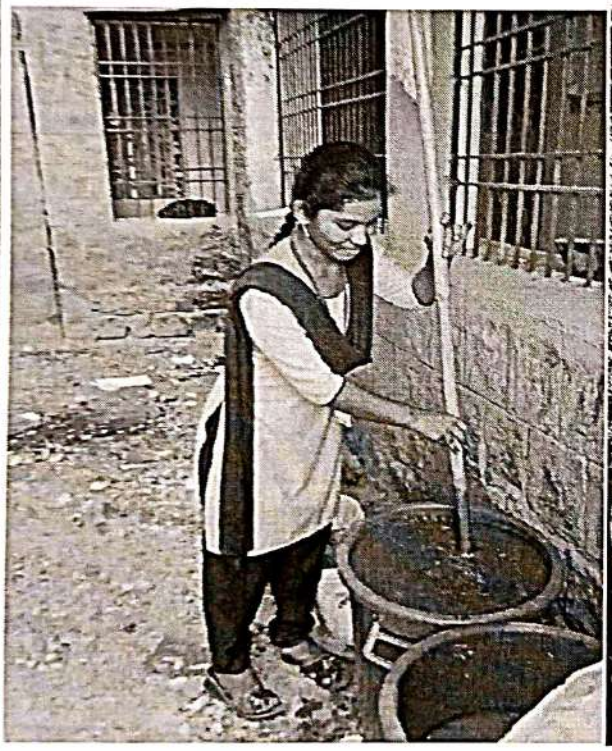


LAND PREPARATION

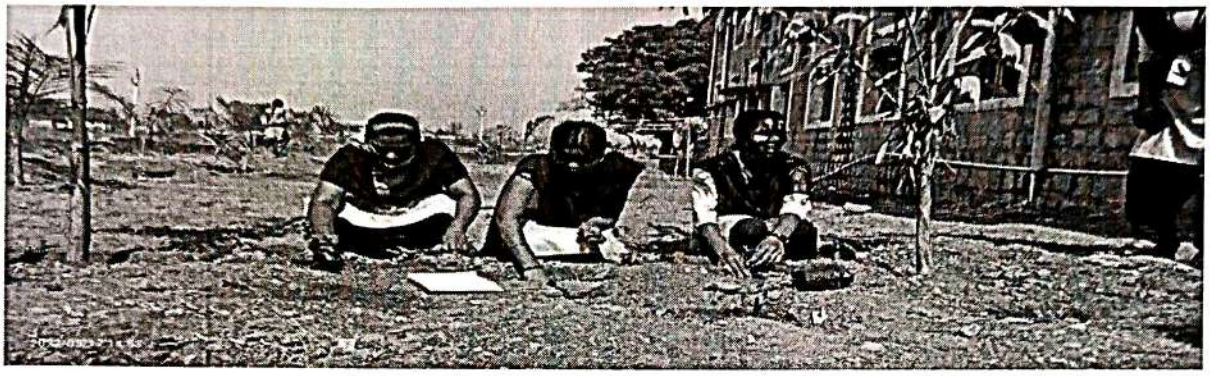


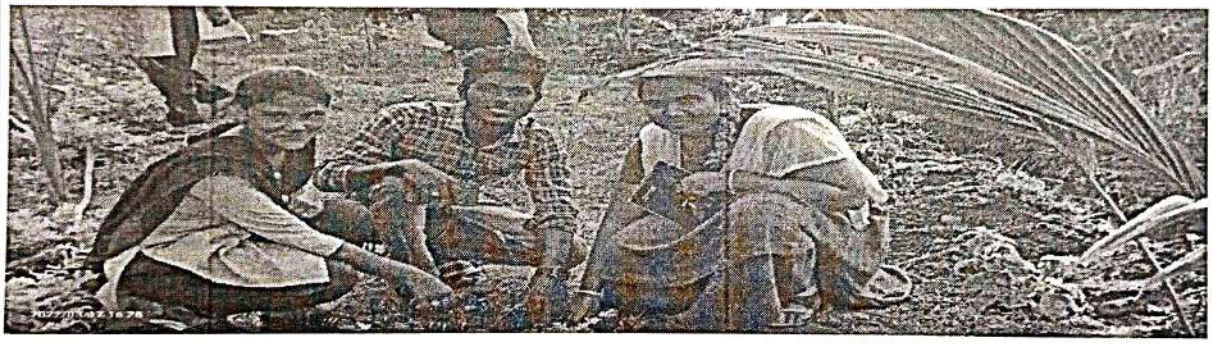
ORGANIC FERTILIZER AND PESTICIDE PREPARATION





SOWING





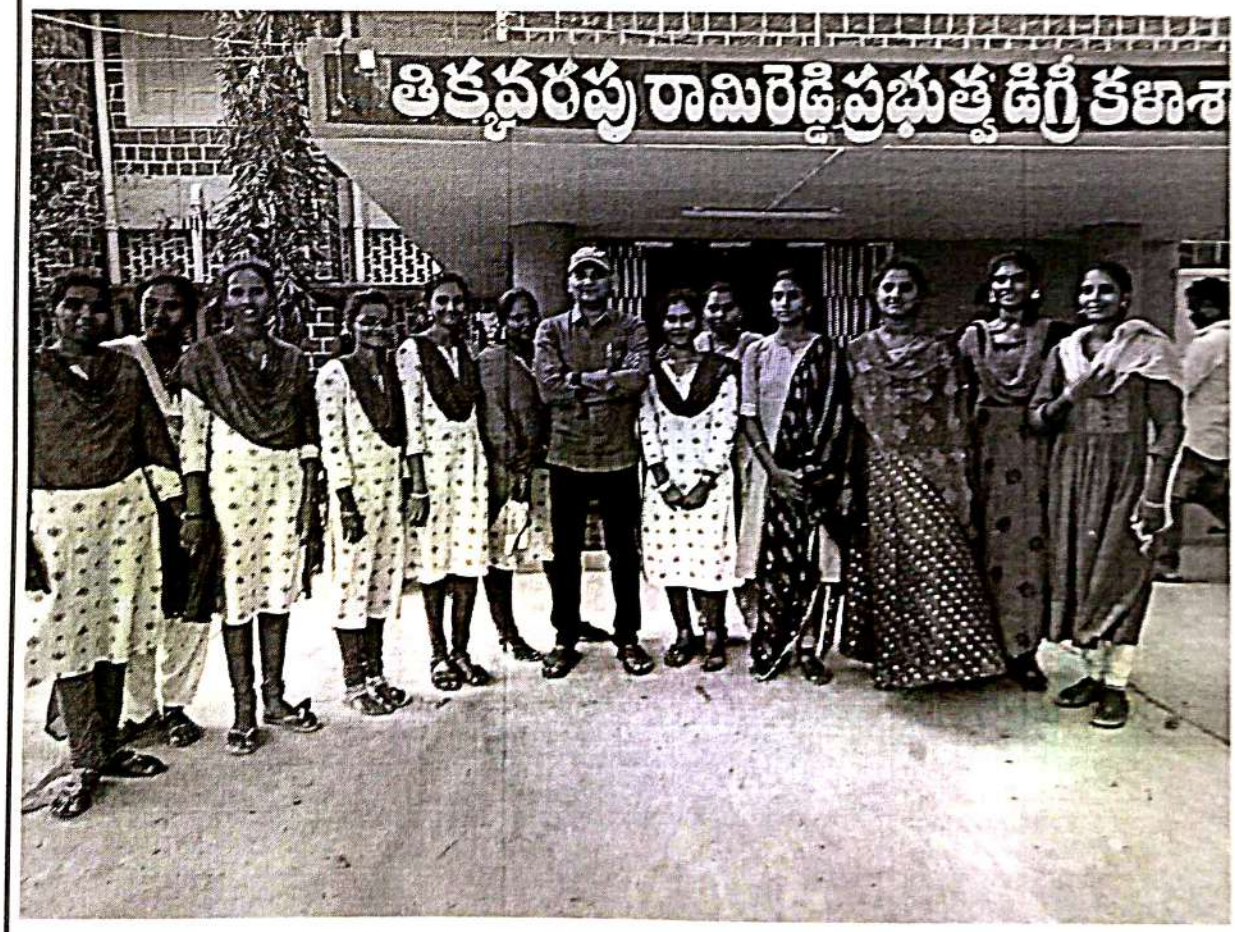
WATER MANAGEMENT

BIO PESTICIDE SPRAYING

WEED MANAGEMENT

HARVESTING

OUR ORGANIC FARMING TEAM



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