

DEPARTMENT OF AGRICULTURE

AELP REPORT 2022-23

(AZOLLA CULTIVATION)

The students of organic farming AELP unit under the guidance of Mr. Satish & Mr. Noel Sebastian have undertaken growing of Azolla in the shade net house. Azolla is a nature's gift for rice cultivation and has tremendous other agricultural uses. It is one of the most nutritive animal feeds and also a source of green manure. Moreover, it is also an excellent bio fertilizer too. Azolla has several times higher level of crude protein than other forage crops and is also rich in mineral nutrients. Despite its benefits this commonly available water fern is in disguise due to lack of knowledge among farming community. Azolla is a floating aquatic pteridophyte (a fern) with symbiotically associated nitrogen fixing Cyanobacteria (*Anabaenaeazollae*). In fact it often forms green or red mats in water bodies and also has names as 'duckweed' and 'fairy moss'. Six species of Azolla are there viz:- *A. carolina*, *A. filiculoides*, *A. mexicana*, *A. microphylla*, *A. nilotica* and *A. pinnata*. Out of these *Azolla pinnata* is very common and good yielder in tropical climates.



Report on Mushroom Production AELP unit

Staff in-charge: Mr. Yaddanapudi Satish

Students have been trained on various types of mushrooms. Production technologies of different edible mushrooms were taught, namely, Milky mushroom, Button mushroom, Oyster mushroom and Paddy straw mushroom.

Practically grown paddy straw mushroom. Chopped paddy straw, straw is soaked in 44% formaldehyde, Bavistin for 17 hours and drains excess water and spread it on the dried floor. the filled straw is filled in polybags@2kg/substrate, multilayered spawning is done and tie the upper end of the cover incubate in growing room, later we have cut the bag into two halves and case the bag with fym-and sandy loam in the ratio of 4:1 and maintained the humidity and moisture by spraying water at regular intervals (for every 2 hours) and we have observed for pinhead initiation after 13-15 days after bagging. The pinheads are ready to harvest for 30-45 days.



Paddy straw cutting by chaff cutter



Paddy straw cutting



Observing the spawn under stereo microscope



Multilayer spawning in Polythene bags



Preparation of casing soil



Casing on 21st day



Milky Mushroom



White oyster Mushroom

REPORT ON NURSERY MANAGEMENT AELP UNIT - 2022 -23

Subject - AELP - NURSERY MANAGEMENT

Class : FAG

LECTURER-IN-CHARGE: D.SARITHA , Department Of Agriculture

INTRODUCTION : Nursery is a place where planting material, such as seedlings, saplings, cuttings, etc., are raised, propagated and multiplied under favourable conditions for transplanting in prepared beds. Setting up of a nursery is a long-term venture, and requires planning and expertise. In a nursery, plants are nurtured by providing them with optimum growing conditions to ensure germination. Nursery saves considerable time for the raising of the next crop. As there is more demand for the horticultural crops , the nursery is raised and maintained by the students . This programme includes the raising and selling of horticultural crops . it also includes the vertical gardening . In nursery management we have learned many methods such as various propagation methods, intercultural operations in different plants, greenhouse management, potting mixture and many other activities.

Activities :

1. **POT FILLING:** pots and grow bags are filled with soil and kept different plants like snake plants, dracaena, lemon grass etc.



Filling the stones in pots.



Filling the soil in pots.



Planting

HARVESTING: And in this activity group of people are participated. Harvesting of chrysanthemum flowers are done. And it is done in the months of January. The cost of flowers is 25 Rs.per 250 gm.



Harvesting of chrysanthemum

LAND PREPARATION: In this activity ploughing the soil followed by harrowing the land to break the soil and bunds are prepared on the four sides of a plot.





Land Preparation

SOWING: Marigold and Tulasi seeds are sown in line sowing method of two different plots.



Sowing of marigold and Tulasi seeds

PROPOGATION: In this Propagation methods we have done cuttings, grafting, layering to different plants. In cuttings on the top circle cut is given and at the bottom slant cut is given. And while planting the cuttings are dipped in rooting hormone and then planted in grow bags.

Cuttings: Chrysanthemum, rose, hibiscus, bougainvillea, acalypha.

Layering: guava, chrysanthemum.



Cutting of hibiscus plants

dipping in rootex hormone.

Planting in grow bags



Chrysanthemum cuttings



Dragon fruit cuttings.



Guava layering.

VERTICAL GARDENING: In this activity we have removed all the plants and soil, cleaned the pipe. Filled the soil in pots and pipe and kept plants in pots.



Filling and planting in vertical gardening

VISIT TO COMMERCIAL NURSERY: The aim of the visit was to see how the nursery is operating, how they are cultivating their various horticultural plants and trees, controlling pest and diseases, etc. And also observed different plants.



Visit to commercial nursery

VISIT TO NURSERY MELA: The nursery mela is conducted near people plaza. The main aim of the visit was to see how the grand nursery mela has been organized in which various plants displayed and to gain the knowledge regarding all the ornamental plants, medicinal plants, vegetables, and fruits.



Visit to nursery Mela

SALE OF NURSERY PLANTS : On convocation day and parent teacher meeting we have kept plants for sale in our college premises.



SALE OF NURSERY PLANTS

REPORT ON AELP UNIT-VERMICOMPOSTING(2022-23 II SEM)

In-charge: K.Sudha Sundari

Vermi-composting is the process of converting any organic residue into rich compost with the help of earthworms. The earthworms convert the decomposed organic waste into Vermi-compost.

The biotechnological reactions and the worm castings results in a rich compost compared to normal compost. The students have utilized all the leaf litter of the campus and have converted into vermi-compost.

Final year students as part of AELP(Agricultural Experiential Learning Programme) have gathered all the crop stubbles from the fields as well as the leaf litter gathered by the non-teaching staff. The decomposed leaf litter as well as the crop stubbles were then added with fully dried cow dung prepared as slurry. The slurry was then added to the organic waste and allowed to settle. After a week, earthworms were added and allowed to feed on the organic residue. The worms feed on the organic matter and start converting into rich compost. The pits have to be watered every now and then. They have to be protected from ants and other crawlers. Finally, after a month, vermi-compost can be collected after sieving.





Report on “Organic Farming”

In charge lecturer: **Mr. Noel Sebastian**

As per the definition of the USDA study team on organic farming “Organic farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection”. In another definition FAO suggested that “Organic agriculture is a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity, and this is accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs”.

conversion of land from conventional management to organic management, (ii) management of the entire sustainability of the system (iii)crop production with the use of alternative sources of nutrients such as crop rotation, residue management, organic management of weeds and pests by better management practices, physical and cultural means and by biological control system, and, (v) maintenance of livestock in tandem with organic concept and make them an integral part of the entire system.

About the unit

This unit covers the Azolla production, Crop farming and Preparation of various organic fertilizers.

1. The crops grown through organic farming method are Coriander, Ridge gourd and Spinach.

Coriander



Area: 5 X 5 M²

Soil and Its Preparation: It grows well on all type of soil. But sandy loam and clay loam soil are best suited for it. The land should be prepared thoroughly. The soil has been loosened with the spade and thoroughly leveled.

Sowing: Seeds of coriander are crushed and then sown. It is generally Line sowing method. Seeds be soaked in water for overnight to remove inhibitor and thereby enhance germination. About 250 grams of seeds are enough for the mentioned crop area. It is an excellent intercrop in tomato, brinjal, cabbage and cauliflower.



Irrigation: First irrigation is given immediately after sowing and frequent irrigations are given at regular interval

Fertilizer: Farm yard manure- 10 kgs and Vermicompost- 5-6 kgs are applied during soil preparation followed by little irrigation. Neemastra is applied as Plant protection fertilizer.

Harvesting: The crop is harvested before flowering (45 days) for tender leaves.

Ridge gourd



Area-5*5m²

Method of sowing: Raised bed nursery with Palak as intercrop.

Seeds are sown in raised beds, furrows or pits @ 10-15 grams/25m² for ridge gourd . Since seeds are with hard seed coat, it is advisable to soak seeds overnight in water. A row-to-row distance of 1.5-2.5 m and hill to hill distance of 60cm is required.



Irrigation: Flooding method

Manure and fertilizer requirements, irrigation and intercultural operations are same as that of coriander.

Azolla cultivation



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Organic Fertilizers and Pesticide

Neemastra- Organic Pesticide

Due to the presence of neem extract, this organic pesticide is highly effective in controlling a wide range of pests. However, this pesticide is mainly effective for sucker pests, rice weevil, caterpillars etc. It also improves the fertility of the soil. It can also be stored for 6 months.



Jeevamrutham- Organic Fertilizer

Jeevamrutham is a natural, low budget, fermented, microbial preparation that enriches the soil and helps the growth of micro organism and improves mineralization of the soil.

Advantages

It helps the soil to activate their available nutrients, microorganisms to make them available for the crop sown in that particular area. It increases the count of earthworms in soil which is beneficial for soil fertility. Jeevamrutham is one of those organic fertilizers which have large number of nutrients like nitrogen, phosphorus, calcium, and other micronutrients. This will ensure higher yield by enhancing the availability of nutrients through faster decomposition of bulky organic manures by boosting the microbial activity in the soil.

REPORT ON AELP FOOD PROCESSING UNIT (2022-23 II SEM)

In- charge: K.Sudha Sundari

Food-processing is an allied activity of Agriculture. The agricultural produce can be processed and utilized in the seasons of non-availability. Foods can be processed conventionally by drying, salting, pickling and fermentation. The students of final year Agriculture as a part of AELP(Agricultural Experiential Learning Programme) have tried several types of food-processing techniques and have marketed the products in the campus.

