ORGANIC FARMING

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WHAT IS ORGANIC FARMING

- Organic farming is a system by which plants are cultivated without the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc).
- In fact organic farmers must not just leave their gardens to nature. They should use all the methods, techniques, and products at their disposal to work as much as possible with nature. The main aim of organic farming is to create a healthy balanced environment in which plants can grow and thrive.
- As a form of agriculture, organic farming relies on techniques such as crop rotation, green manure, compost, and biological pest. Organic farming is also called ‘low input farming’

COMPONENTS OF ORGANIC FARMING

STEPS TO ORGANIC FARMING

Organic farming approach involves following five principles:

1. Conversion of land from conventional management to organic management
2. Management of the entire surrounding system to ensure biodiversity and sustainability of the system.
3. Crop production with the use of alternative sources of nutrients such as crop rotation, residue management, organic manures and biological inputs.
4. Management of weeds and pests by better management practices, physical and cultural means and by biological control system
5. Maintenance of live stock in tandem with organic concept and make them an integral part of the entire system

VERMICOMPOSTING

- Vermicomposting is a method of preparing enriched compost with the use of earthworms. It is one of the easiest methods to recycle agricultural wastes and to produce quality compost.

- It is the process of turning organic debris into worm castings. The worm castings are very important to the fertility of the soil. The castings contain: 5 times the available nitrogen, 7 times the available potash, and 1 ½ times more calcium than found in good topsoil

MATERIALS NEEDED FOR VERMICOMPOSTING

- Decomposable organic wastes such as animal excreta, kitchen waste, farm residues and forest litter are commonly used as composting materials.

- In general, animal dung mostly cow dung and dried chopped crop residues are the key raw materials.

STEPS TO PREPARE VERMICOMPOST

1. Beds of partially decomposed material of size 6x2x2 feet should be made. The number of beds can be increased as per raw materials availability and requirements
2. Mixed together cowdung and chopped dried leafy materials in the propotion of 3:1
3. Leave the mixture for partial decomposition for 15-20 days.
4. A layer of 15-20 cm of the above mixture should be kept as bedding material at the bottom of the bed.
5. Red earthworms (1500-2000) should be released on the upper layer of the bed
6. Kitchen wastes and farm residues can be given as food for earthworms.

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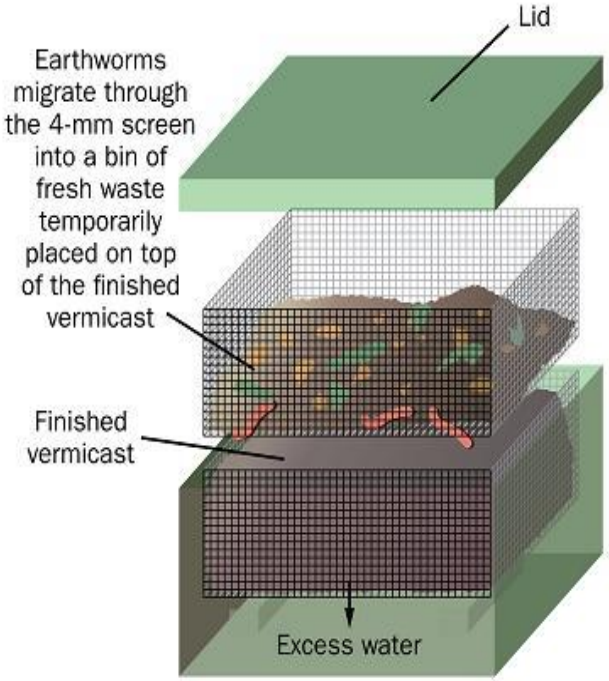
7. Water should be sprinkled with watering can immediately after the release of worms.
8. The beds should be kept moist by sprinkling of water daily and by covering with gunny bags/polythene.
9. Beds should be turned once after 30 days for maintaining aeration and for proper decomposition.
10. Compost gets ready in 45-50 days. The finished product is ¾ of the raw materials used.



HARVESTING

- When raw material is completely decomposed it appears black and granular.
- Watering should be stopped as compost gets ready.
- The compost should be kept over a heap of partially decomposed cow dung so that earthworms could migrate to cow dung from compost
- After two days compost can be seperated and sieved for use.

JEEVAMRIT

- *Jeevamrit'* word comprises of two different words: '*Jeevan*' which means *Life* and '*Amrit*' means *medicinal potion*.
- Jeevamrit is a highly nutritious organic fertilizer. It is an excellent fertilizer in liquid form containing nitrogen, phosphorus, potassium and many other important essential nutrients.
- It adds organic matter to the soil which improves soil structure, aeration, soil moisture-holding capacity, and water infiltration. Jeevamrit improves the quality and yield of fruits, vegetables and other crops.

MATERIALS REQUIRED

- Plastic bucket-20 L
- Fresh cowdung- 1 kg
- Cow urine- 1 L
- Chickpea powder (Beson)- 250-500g
- Jaggery- 250-500g
- Handful of top soil
- Water- 10 L
- Bamboo stick for stirring
- Black cloth

PROCEDURES

Step 1: Mix together cowdung and cow urine

Step 2: In the mixture above pour beson powder, jaggery and a handful of soil . Mix it well

- Step 3: Pour water and mix it well. Cover with a black cloth

- Step 4: Stir the mixture twice a day every morning and evening for 7 days continuously.

- ✓ After 7days of regular stirring and keeping it covered with black cotton cloth, our Jeevamrit will get ready to use.

PANCHAGAVYA

- Panchagavya is an organic fertilizer that helps in improving the yield and quality of crops.

- Besides this, it also enhance the productivity of micro-organism which in turn improves the fertility of the soil.

MATERIALS REQUIRED

- Fresh cowdung (1kg)
- Cow Ghee (5gm)
- Besan Powdar (100 gm)
- Cow Milk(250-500 ml)
- Curd (250 ml)
- Jaggery (100 gm)
- Riped fruits (2-3 nos.)
- Cow urine (1 litre)
- A handful of soil
- Water (1 litre)
- Black cotton cloth
- Plastic bucket

PROCEDURES

- Step 1: In a plastic bucket mix cow dung and ghee and cover it with a black cloth. Leave the mixture for 3 days. In these 3 days stirr the mixture twice daily i.e morning and evening.
- Step 2: After 3 days, in the same bucket mix Besan powder, Cow's milk, Curd, Riped fruits, Jaggery, cow urine, a handful of soil. Then fill the bucket with and cover with black cloth.

U Besan Powdar

Ka Dud Masi (250mi)

Ka Doi (250ml)

Ki soh ba la ih bha

Ka Mithai

Ka Umpynjhieh Masi (1lt)

Ka Khyndew (1 kham)

Ka Um (1 lt)

- ✓ After 20 days of regular stirring and keeping it covered with black cotton cloth, our Panchagavya will get ready to use.

Ka jain iong

BERKELEY'S 18 DAYS COMPOST


Berger

GREEN MANURING

- A cover crop is a crop of a specific plant that is grown primarily for the benefit of the soil rather than the crop yield. Cover crops are commonly used to suppress weeds, manage soil erosion, help build and improve soil fertility and quality, control diseases and pests, and promote biodiversity.

Benefits of cover crops:

1. Cover crops are typically grasses or legumes but may be comprised of other green plants. And, most often, a cover crop is grown in the off-season before the field is needed for growing the cash crop.
2. Cover crops reduce the amount of water that drains off a field, protecting waterways and downstream ecosystems from erosion. A cover crop can help conserve water and prevent soil erosion.
3. Cover crops can help break disease cycles by reducing the amount of bacterial and fungal diseases in the soil. If you have a soil that is infested, you can plant a cover crop in that area as a means to eradicate the disease.

4. Cover crops are sometimes called "green manure" because they provide nutrients to the soil, much like manure does. They are also called "living mulches" because they can prevent soil erosion.

Types of Cover Crops

Examples of plants that have proven to be effective cover crops include:

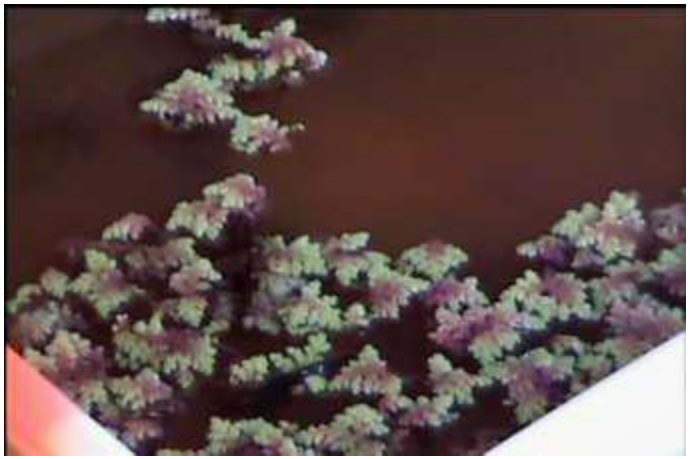
- Rye: Also known as winter rye or cereal rye, this cover crop is often used to loosen compact soil and suppress weeds.
- Buckwheat: Fast-growing buckwheat helps prevent erosion and suppress weeds.
- Clover: Clover is great for fixing nitrogen in the soil and adding fertility.
- Sorghum: This hybrid cover crop grows quickly, adds biomass, and suppresses weeds.
- Hairy vetch: Vetch adds nitrogen and is a good overwinter crop for northern climates.

AZOLLA

- Azolla is an aquatic floating fern, found in temperate climate suitable for paddy cultivation. The fern appears as a green mat over water.

PREPARATION OF AZOLLA

- Gather azolla, and bring it home in a plastic cover, then put it in a tub that has water in it. It will be fresh for only 2 days. It should not be exposed to sunlight
- Make a pit that is 5 feet by 3-3 ½ feet. The floor of the pit should be very even. Remove any roots.



- Spread out the plastic sheet.It should be 2 feet longer and 2 feet wider than the pit, with no holes. The sheet must be spread out smooth.The sheet's outer edges should be fixed with mud so that they don't move.

- Now fill the pit with water. The depth of the water should be the same as the height of a brick.

The water level must be maintained daily – if it goes down add more water. Even small holes in the sheet will result in water leakage.

- Add 1 ½ kilograms of cow dung.

- Bring azolla in jeevamuthra water and add it to the pit.In 15-20 days, the azolla will grow to fill the pit.

USES

- Azolla is grown alone for two to three weeks in flooded fields. Afterwards, water is drained out and Azolla fern is incorporated in the field before transplanting of paddy. Otherwise, 4-5 q of fresh Azolla is applied in standing water one week after planting of paddy.
- Dry Azolla flakes can be used as poultry feed and green Azolla is also a good feed for fish.

- It can be used as a bio-fertilizer, a mosquito repellent, in the preparation of salads and above all as a bio-scavenger as it takes away all heavy metals.

ADVANTAGES

1. It easily grows in wild and can grow under controlled condition also.
2. It can easily be produced in large quantity required as green manure in both the seasons – Kharif and Rabi.
3. It can fix atmospheric CO2 and nitrogen to form carbohydrates and ammonia respectively and after decomposition it adds available nitrogen for crop uptake and organic carbon content to the soil.
4. The oxygen released due to oxygenic photosynthesis, helps the respiration of root system of the crops as well as other soil microorganisms.
5. It solubulises Zn, Fe and Mn and make them available to the rice.

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6. Azolla suppresses tender weeds such as Chara and Nitella in a paddy field.
7. Azolla releases plant growth regulators and vitamins which enhance the growth of the rice plant.
8. Azolla can be a substitute for chemical nitrogenous fertilizers to a certain extent (20 kg/ha) and it increases the crop yield and quality.
9. It increases the utilisation efficiency of chemical fertilizers.
10. It reduces evaporation rate from the irrigated rice field.

THANKYOU