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ORGANIC FARMING TECHNIQUES

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Farmer adopting certified organic farming needs to have accurate knowledge of ecology and biological standards as well as the available farming techniques and measures, because the preparation of organic inputs on the farm, proper use of method and control of pests and diseases is essential. Lack of accurate knowledge of the inputs required for this can be troublesome and may result in loss rather than cost reduction. As far as possible, as a farmer experiment, test these methods at their level and use them on the basis of evaluation experience. Farmers should take information about these methods before stepping into organic farming so that it is easy to ensure organic production plan for the farm in consultation with the investigators of the certification body and you can establish your knowledge about organic techniques in front of them. In view of the increasing demand of customers for organic products, new organic farming techniques are coming in the market by government and private institutions, so after seeing the reliable mark, use it only after approval from the certification body or the producer of contract farming. In case of export, it is beneficial to choose these techniques keeping in mind the organic farming standards of the importing country. Thus it is clear that organic farming techniques are widely available, but after proper training, they should be used according to their own purpose so that the cost is less and the profit is higher.

The details of different techniques of organic farming are as follows.

- 1. Proper tillage:** Repeated deep ploughing of the land has a bad effect on the micro-organisms and animals of the soil. Due to soil erosion, the availability of nutrients decreases, so ploughing of the land should be done only as per requirement.
- 2. Soil and Water conservation:** The soil erosion caused by wind and water should be stopped at all costs. No natural resource should be wasted and it should be used properly. The soil surface should be kept covered with vegetation and bio-waste.
- 3. Mixed Agriculture:** In mixed agriculture, crop production and animal husbandry are complementary to each other and are the pillars of organic farming, for effective organic farming, more benefits can be taken from integrated farming by keeping two milch animals per acre.

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4. **Selection of crops and species:** The selection process of different crops and their species should not be based on human need but based on the soil environment and season of the particular place.
 5. **Green Manure Crop:** Green manure process is a very ancient and well-known process and it has an important place in organic farming. In this process, the green manure furl (like dhaincha etc.) is mixed in the soil after good distribution and it is not allowed to rot. This helps in the restoration of the amount of organic carbon in the soil.
 6. **Use of organic manure:** Whenever there was residual waste, it is very important to stop the misuse of organic matter. Instead of allowing it to be destroyed by burning or leaving it open, it should be preserved and converted into organic manure by composting or vermicomposting method.
 7. **Use of bio fertilizers:** It is proved by scientists that some micro-organisms living in the soil are capable of providing atmospheric nitrogen and phosphorus, potash and zinc available in the soil. The population and effectiveness of these microorganisms depend on the amount of organic matter available in the soil. The bacteria such as *Azatobacter*, *Azospirillum*, *Rhizobium*, Blue green algae leaves, etc., when used as fertilizer, grow rapidly around the plant roots and Benefits to crops by converting various nutrients into available form through their biological action deliver.
 8. **Reuse of organic matter:** The main way to increase the amount of organic matter in the soil is to use the remaining crop residues. In this, crop and other plant residues are buried in the soil and allowed to decompose slowly naturally.
 9. **Weed Management in Organic Farming**
 - Mechanical tillage
 - Crop rotation
 - Cover crops
 - Sowing on scheduled date
 - Plant geometry management
 - Soil solarisation
 - Ploughing of meadows
 - Mulch
 10. **Pest Management:** Botanical insecticides like neem oil, neem extract, karanj and mahua products should be used. Various biological techniques available for pest and disease management should be used in a four stage phased approach.

First stage: cropping activities adapted to natural processes such as crop rotation, soil management, field condition, non-transgenic, nutrient management and plant resistance

Second stage: To increase the natural competitive effect and effectively control the pest population through vegetative management.

Third stage: Reducing the effect of pests and diseases by using biological controllers at regular intervals.

Fourth stage: approved organic and mineral pesticides.

The main biological methods of pest management are as follows -

- Crop rotation
- Sowing time change
- Beneficial insect habitat
- Beneficial vertebrate habitat
- Use of *Bacillus thuringiensis*
- Control with botanical insecticides (pyrethrum, rotenone, ryania, sabadilla, quassia, etc.)
- Grow trap crops

11. Plant disease and nematode management

- Crop growing according to crop rotation
- Use of resistant varieties
- Use of compost or compost tea
- Simultaneous sowing of companion crops
- Sulphur or sulphur based substances
- Soil solarisation
- Use of biological pesticides

12. Appropriate use of irrigation water: Water is an essential input in agricultural production and it should be used in the right quantity. The disadvantages of excessive use of water are well known. Therefore, water management has been given an important place in the organic farming process and it was recommended that irrigation should be done at the right time and in the right amount as per the requirement.
