



COMPONENTS OF ORGANIC FARMING



ORGANIC FARMING



GREEN LEAF MANURE



CROP ROTATION



BIOLOGICAL MANAGEMENT



BIOFERTILIZERS



MANURES



VERMICOMPOST



ANIMAL HUSBANDRY

Organic farming system in India is not new and is being followed from ancient time. It is a method of farming system which primarily aimed at cultivating the land and raising crops in such a way, as to keep the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (biofertilizers) to release nutrients to crops for increased sustainable production in an eco friendly pollution free environment.

As per the definition of the United States Department of Agriculture (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”.

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”.

Some of the important components of Organic Farming are described below-



CHOICE OF SOIL/ LAND



The success of organic farming depends on the soil type and fertility of the farm. It should always be noted that the soil in the field where you want to do organic farming should be healthy and fertile. Some insecticides are present in soil and water for years. These can adversely affect the nervous system through crop products which can also lead to serious diseases like cancer. Therefore, as far as possible, one should stay away from pesticides. Before starting organic farming, the land is not considered suitable for organic food for two years. So that during this period crops can absorb all the harmful and toxic elements present in the soil. In this way the inorganic chemical elements of the soil are completely eliminated.

SELECTION OF SPECIES/VARIETIES

Any species of a crop can be planted for organic farming. But it has been felt that indigenous species will be more suitable for organic farming. Because their energy demand is less. Some crops are fragile and are susceptible to pests and diseases. As far as possible, anti-disease species of crops should be selected. Often, a packet of seeds of such crops is inscribed. It is also notable here that transgenic crops and their species are not used in organic farming.

ORGANIC FERTILIZER



Among the organic manures used in the country are dung manure, compost manure, vermicompost, poultry manure, animal laying, pigs and sheep manure and cow dung manure. Normally 5 kg of cow dung and one ton of compost manure. Nitrogen, 2-5 kg phosphorus and 5 kg potash are available. But unfortunately we are able to use only 50 percent of them. Mostly dung is used by farmers to burn as dung cakes.

Some biodynamic manures like cow urine, animal horn manure, bone manure are also being used in organic farming. Compost made with the help of earthworms by mixing crop residues, weeds, leaves of herb vegetables and cow dung is called vermicompost or earthworm compost. By this method, organic residues are kept in a long pile and earthworms are left in the *Eichenia femida*. The vermi compost is prepared in about 45 days.

Organic fertilizers improve soil quality as well as increase the availability of major, second and micronutrients. Only 30 percent of the given amount of organic fertilizers in a crop is used in the first year, the remaining amount is used by the next crop. The availability of phosphorus in the soil also increases due to the humic content in organic fertilizers.



ORGANIC MANURE



The use of organic fertilizers is proving beneficial in taking good production of crops. Among them, Rhizobium culture, Azotobacter, Azospirillum, PSB, Azola, vesicular mycorrhiza, indigo-green algae, bio activator etc. are prominent. Use of organic fertilizers is very important for sustainable farming and maintaining soil health. Organic fertilizers are easily available at low cost and they are also very easy to use. The use of organic fertilizers increases the yield of various crops

by 10 to 25 percent. They are considered to be the main ingredients of organic farming management.

Rhizobium and Azotobacter provide nitrogen (78 per cent) present in the atmosphere and deposited in the ground through fixation. PSB By changing the insoluble phosphorus in the soil to a soluble state, the phosphorus for the plants increases the availability, which also benefits the next crops. In addition bacterial fertilizers produce growth factor hormones around the roots of plants (rhizosphere) which have a favorable effect on plant growth and development.

Organic fertilizers should be selected according to the variety of crops. While using organic fertilizer, must see the production date, the last date of use and the name of the recommended crop above the packet. While using organic fertilizers should be protected from sunlight and hot air.

USE OF GREEN MANURES



Use of green manure can increase the quantity and availability of all secondary and micronutrients in the soil, besides the main elements like carbon, nitrogen, phosphorus and potash. Pulses are mainly used for green manure. Sanai, Dhaincha, Cowpea, Moong, Guar and Soyabean are the main among them. It takes only two months to make green manure from these crops. All these crops are short-term and fast growing. These crops are pressed into the soil with

the help of a soil turning plow or harrow before flowering.

Green manure crop takes about 10 days to rot. After this the field is prepared and the next crop is sown and planted. Using green manures can easily secure 20-30 kg of nitrogen in the field. In addition, the reserves of phosphorus, potash and micronutrients can also be increased.

Multipurpose trees and plants like acacia, neem and glyceridia leaves and twigs can also be used as green manure. Farmer brothers must grow green manure crops once in three to four years. With this, the fertility of the land not only increases, but also improves soil health.



USE OF PULSES CROPS



Crop must be grown once a year. Pulses are not only a nutritional base for more than half of India's population, but are also the cheapest source of protein and essential amino acid supplies. In addition, due to lack of protein in the diet, malnutrition due to lack of protein can also be prevented. The roots of lentil crops contain knots of Rhizobium bacteria, which act as nitrogen fixation.

After harvesting wheat, coral crop should be taken. After plucking two coral beans, the crop should be plowed and mixed into the soil. Its use increases the amount of bacterial substance in the soil which ultimately supplies the main nutrients as well as secondary and micronutrients in the soil after decomposition. Due to this the fertility of the land increases. Also, soil health also improves.

CROP RESIDUE MANAGEMENT



Farmer brothers generally ignore the contribution of crop residues in crop production. The use of crop residues is common in the paddy-wheat crop cycle in northwest India. Due to mechanization and increasing productivity in agriculture, excessive amount of crop residue is being produced. Farmers often burn crop residues after harvesting donations after harvesting. It is quite prevalent in Punjab, Haryana and West Uttar Pradesh as well as other parts of

the country. Environmental pollution is increased by the smoke emanating from the burning of crop residues. Also, heart and lung diseases also increase due to smoke. The amount of organic carbon in the soil can be improved by using crop residues in organic farming. Similarly, after plucking the fruits of vegetables, their stem, leaves and roots remain in the field, which by plowing and pressing in the soil improves the fertility of the field.

Crop, straw, sawdust and farm residues are prominent among the crop residues. Although crop residue has an important contribution in providing nutrients. But most of the crop residues are burnt in the field or thrown out of the field. Crop residues have a favorable effect on the physical, chemical and biological functions of the soil along with providing nutrients to the plants.

WEED CONTROL



As far as possible, weeds in organic farming should be controlled only through weeding. In addition, weeds can be controlled by deep plowing in summer, solarisation by sun rays, proper crop management and adequate number of plants per unit area. Also, parasites and other bacteria that eat weeds can be used. In addition, weeds can also be eliminated by sowing the main crop in organic farming, giving them an opportunity to grow.



In this method, first irrigate the field, causing most weeds to grow after getting moisture. These weeds are then destroyed by running plow to the field. Outbreaks of weeds can also be reduced by adopting drip irrigation techniques in crops such as vegetables, fruits and cotton. In this method, water around the roots of the main crop is given by dripping it only when needed. Sometimes the number of weeds can be reduced by growing short-duration crops as intercrops with the main crop.

PEST AND DISEASE CONTROL



Pests and diseases under organic farming should also be controlled through biological means. Different types of insect-mites are found in crops with different vegetables, fruits and flowers. These insect-mites suck the juice of leaves, buds, stems and fruits or munch them and eat them. This causes the quality of crops to deteriorate, as a result of which farmers are unable to get a fair price for the produce in the market. For this, one gram per liter of neemali powder can be sprayed and dissolved in water. Nowadays Neemgold, Neem oil, Nimoline etc. Organic insecticides prepared from Neem tree are easily available in the market.

Trichogramma has been found to be good for preventing insects in vegetables. Trichogramma is a microscopic egg parasite that invades the eggs of insectivorous, leguminous and leaf-eating insects. A trichocard is a card similar to a postcard, on which about 20 thousand parasites produce trichogramma. This card is applied in the fields to control the insects that are planted in crops like cotton, sugarcane and paddy.

Similarly, Trichoderma and Newmaria have proved to be good for prevention of soilborne fungal diseases such as wilt, caller rot and rotting in nurseries. For seed treatment, by adding 6 to 8 grams of powder per kg of seed and for land treatment at the rate of 2 to 3 kg of powder per hectare by mixing with cow dung and vermi compost, various ground-borne fungal diseases can be prevented.

(Source : National Center for Organic Farming- NCOF)



Contact for More Information

Organic Farmer Producer Association of India

J-890, Phase-III, Tonk Road, Sitapura Industrial Area, Jaipur, Rajasthan- 302022

Mobile : 97850-15005, 98875-55005, 81073-79410, 83291-99541, 96100-02243, 78919-55005

E-mail : • atul.hcms@gmail.com, • info@iaasd.com, • organic.naturaljpr@gmail.com,

• info@sunriseagriland.com, sunriseagrilandb2b@gmail.com

Website : • www.hcms.org.in, • www.iaasd.com, • www.sunriseagriland.com

Important Links : • <https://www.hcms.org.in/ofpai.php>, • <https://www.hcms.org.in/sunrise-organic-park.php>

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