

Frequently Asked Questions on Organic Farming

*N.K. Jat¹, B. Gangwar² and N. Ravisankar³

*ICAR- Indian Institute of Farming Systems Research, Modipuram,
Meerut, U.P.– 250 110*

What does “organic” mean?

Organic are the products and other ingredients that are grown without the use of pesticides, synthetic fertilizers, sewage sludge, genetically modified organisms, or ionizing radiation. Besides, the animal products like meat, poultry, eggs, and dairy products that are produced without use of antibiotics and growth hormones in animals. Before a product can be labeled “organic,” a Government-approved certifier inspects the farm where the food is grown to make sure the farmer is following all the rules necessary to meet the organic standards.

What is 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 relies upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection. Organic farming is a method of farming system which primarily aims 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 and biopesticides) to grow and protect the crops for increased sustainable production in an eco-friendly pollution free environment.

¹Scientist (Agronomy); ²Former Director; ³National PI (NPOF); ⁴Scientist (Agriculture Statistics)

*Present address: Scientist (Agronomy), ICAR-CAZRI, Jodhpur (Rajasthan)

Is there a need to practice organic farming?

With the increase in population our compulsion would be not only to stabilize agricultural production but also to increase it further in sustainable manner. Excessive use over years of agro-chemicals like pesticides and fertilizers may affect the soil health and lead to declining of crop yields and quality of products. Hence, a natural balance needs to be maintained at all cost for existence of life and property. The obvious choice would be judicious use of agro-chemicals and more and more use of naturally occurring material in farming systems.

What are the benefits of organic farming?

1. It helps in maintaining environment health by reducing the level of pollution.
2. It reduces human and animal health hazards by reducing the level of toxic residues in the product.
3. It helps in keeping agricultural production at a higher level and makes it sustainable.
4. It reduces the cost of agricultural production and also improves the soil health.
5. It ensures optimum utilization of natural resources for short-term benefit and helps in conserving them for future generation.
6. It not only saves energy for both animal and machine, but also reduces risk of crop failure.
7. It improves the soil physical properties such as granulation, and good tilth, good aeration, easy root penetration and improves water-holding capacity.
8. It improves the soil's chemical properties such as supply and retention of soil nutrients, and promotes favorable chemical reactions.

What is conventional agriculture?

Agricultural practices designed based on scientific principals after research and developments in the past about six decades are termed as conventional agriculture. It involves use of chemical inputs such as fertilizers, synthetic pesticides and herbicides; besides (a) improved seeds in terms of high yielding varieties, hybrids and genetically modified seeds; (b) mechanization and other cultivation tools, (c) irrigation, (d) other technological outputs such as growth hormones, antibiotics etc. Collectively these all are referred as "Green Revolution Technologies".

How organic farming is different from conventional farming?

Organic farming is a farming system based approach involving use of all potential “Good Agricultural Practices” comprising recycling of locally available natural resources; and integration of crops and animals in local farming system. Hence, it not only encourages multiple cropping on a given piece of land but also connects plants and animals of local ecosystem. These two approaches basically differ in meeting nutrients requirements and plant protection to crops. In conventional farming, nutrient requirement is met by fertilizers synthesized using fossil fuels while in organic farming it is met through applying organic manures and by activity of agriculturally beneficial microorganisms, used as bio-fertilizers. For plant protection in conventional farming, focus is on killing the pests using synthetic pesticides while organic farming depends more on predators, parasites, botanicals and microbial agents in managing them.

What is natural farming?

Natural farming, also known as “Do-nothing farming” or No-till farming was promoted by Masanobu Fukuoka in Japan during 1940s. The most essential aspect of natural farming is to let nature play a dominant role to the maximum extent possible. Hence, no-till, farm biodiversity, integration and symbiotic farm components and protection of soil cover all have a place in this method of farming. The seed ball technique for sowing has also been given importance by Fukuoka.

The immense importance placed on no-tillage has led to natural farming also being referred to as No-till farming. The term ‘Do Nothing Farming’ originated because the farmer is considered only to be a facilitator - the real work is done by nature herself. Hence, while there are lots to think about and do in natural farming, actual physical work and labour has actually been seen to reduce by up to 80% compared to other agricultural systems. In India, Fukuoka is fondly-regarded and his work has found a number of practitioners who have termed their method of farming as ‘Rishi Krishi or Rishi Kheti’ literally meaning agriculture of the sages.

What are the major advantages of organic farming vis-a-vis chemical farming now in vogue?

Organic farming is a holistic approach based upon a set of processes that leads to sustainable ecosystem, safe and nutritive food, animal welfare and social justice. It is based on minimizing the use of external inputs and avoiding the use of synthetic fertilizers and pesticides. It is the process of farming system employing management practices, which seek to nurture

ecosystem, achieve sustainable productivity and provide weed, pest and disease control through a diverse mix of mutually dependent life forms. The major advantage of organic farming includes:

- Maintains environment health by reducing the level of pollution.
- Reduces human & animal hazards by reducing the level of residue in the product.
- Keeps agricultural production sustainable.
- Reduces the cost of agricultural production by relying on internal sources for nutrient, pest and disease management
- Improves the soil health and associated organisms
- Ensures the optimum utilization of natural resources for short-term benefit and helps in conserving them for future generation.
- Saves energy for the future
- Improves the soil physical properties such as granulation, and good tilth, giving good aeration, easy root penetration and improves water-holding capacity.
- Improves the soil's chemical properties such as supply and retention of soil nutrients, and promotes favourable chemical reactions.
- Organic agriculture promotes job creation and it can provide 30% more jobs than chemical farming by way of resource recycling, certification, product marketing and packaging

Which are the areas where the chemical farming steals march over organic?

- Huge financial subsidy to chemical fertilizer producing factories exists while no subsidy is given to individual farmers/groups who are producing the organic manures/pesticides etc.
- Funding for research, extension and development are more focussed towards the chemical based farming rather than organic farming. Very few institutions or centres only carrying out the research and promotion of organic farming while >90 % funds are provided towards agriculture supported with chemicals.
- The Agricultural Education system is also dominated by chemical based farming and as on date college is offering degree on organic /traditional farming systems. Only few agricultural universities are

having department for research on organic farming. Diploma and training certificates only given for organic farming.

- Chemical fertilizers and pesticides are promoted through Fertilizer Corporation and pesticide manufactures. However, corporation or no support exists for promotion of organic sources as nutrient and pest/disease management.

How does a farmer go about converting land to organic status?

Soil and natural fertility building are important parts of organic farming. Hence, converting land to organic status is a three-year process. However, produce grown in the first year cannot be stated as organic. In the second year produce may be stated as “In Conversion”. It is not until the third year that produce may be stated as fully ‘organic’.

Is organic farming non-scientific and unproven?

Several aspects of organic farming are plausible and scientifically explicable. Recent researches and long term experiment trials have proved that comparable yields are possible under organic management. Large number of practicing organic farmers, their high yields and their scientific system of farming is a proof of it and can be validated and researched by the scientists.

Does organic farming yields low?

Lower yield in the initial years when a field is converted from conventional system to organic, is widely observed and on this basis organic farming cannot be quoted as low-yielder. The initial one to three year period is needed to build the agriculturally beneficial microorganisms in soil that have been adversely affected by use of agro-chemicals in conventional agriculture. Various long term experiments conducted in several countries, including India have proved that once the soil health is restored, comparable yields of most of the crops can be harvested. During conversion period when soils are not fit for organic farming yields may decline, but with appropriate planning and crop selection it can be maintained.

What are strengths and weaknesses of chemical agriculture?

Use of external inputs boosted yield of almost every crop and animal production and helped many countries such as India to come out of starvation situation to self-sufficiency and even export. But there was a price paid for this and these are widely referred as “ill effects of the Green Revolution Technologies and involve (a) pesticide residues in the food

chain, (b) spoilage of land due to injudicious use of fertilizers and water, (c) declining water table, (d) pollution of aquifers and above surface water bodies, (e) disregard of locally available natural resources of crop nutrients and crop protection, (f) increased cost of production each year without a corresponding increase in production, (g) agro-technologies that make farmers dependant on market for inputs. These ill effects became more apparent after about 30-years of their use and now scientists are addressing them by use of natural resources. Use of FYM, vermicompost and biopesticides (botanicals and microbial agents) are now widely recommended to use in crop production.

What are the strengths and weaknesses of organic farming?

Organic farming is a knowledge intensive system and has been developed by experiences of its practitioners over the years. There is very little external input and therefore, it is a low-cost system. But in the absence of research support, farmers are not able to access the desired information required for crating appropriate management protocol. Concern of low yields during conversion period is a major restrictive factor in its wide scale adoption.

Can organic farming produce enough food for country like India?

The performance of organic agriculture on production depends on the prevailing agricultural management system. A generalization of the impact of conversion to organic agriculture on yields indicates that in “Green Revolution” areas (irrigated, intensively cultivated), conversion to organic agriculture usually leads to almost identical yields and in traditional rainfed agriculture (with low external inputs), organic agriculture has the potential to enhance yields.

In fact, many multiple cropping systems, such as those developed by small holders and subsistence farmers, show higher yields in terms of total harvest per unit area. These yield advantages have been attributed to more efficient use of nutrients, water and light and a combination of other factors such as the introduction of new regenerative elements into the farm (e.g. legumes) and less loss due to pests and diseases. It can be concluded that increased yields on organic farms can be achieved depending on management skills and ecological knowledge.

What is the highest yield recorded under traditional farming in India and yield obtained under chemical farming?

Available records on grain yield of paddy under traditional farming practices indicates yield up to 2.95 t/ha (2605 lbs/acre) in the first crop (Kuruwai)

and 2.81 t/ha (2484 lbs/acre) in the second crop (Thaladi) [1925-26] in Lalgudi Sivagnanam Co-operative Agricultural Society in the Madras Presidency [Royal Commission on Agriculture in India report volume III, 1927]. Similarly in case of wheat, yield of 2.41 t/ha has been reported from West Bengal during 1970-71 [Report of National Commission on Agriculture, 1976]. In case of chemical farming, grain yield of 6.20 t/ha in paddy during 2004-05 and 5.08 t/ha in wheat during 2007-08 were recorded in Ludhiana (Punjab) in the network project (Annual Progress Report, 2004-05 & 2007-08 of Network Project on Organic Farming, Punjab Agricultural University, Ludhiana).

Whether the conversion to organic agriculture will have any adverse impact on the food security in India?

- Organic growers generally resorts to immediate conversion of their lands/soils to organic which leads to yield loss during the initial 3 to 4 years depending upon the conditions. The yield and income loss in the initial years can be minimized by adopting “towards organic approach” means slowly increasing the organics and reducing the inorganics.
- Organic agriculture is always compared with conventional yields which receives 100 % recommended quantity of major nutrients. However, in the real sense, the organic agriculture yield should always be compared with the yield obtained under farmer’s package of nutrient management; then only, the real issue of food security can be discussed. The large number of on-farm data available indicates, existence of nutrient application gap between farmers and recommended package with farmers package receiving 33, 37, 77 and 62 % lesser quantity of N, P₂O₅, K₂O and micro nutrient respectively for major food crops namely rice, wheat and maize. The farmers are resorting to under dose application of nutrients due to various factors such as affordability, availability and knowledge. Once, farmer resorts to application of organic manures and recycling of residues, balanced supply of nutrients to crops can be ensured. Studies indicate, in case of paddy and maize, there will not be any decrease in production due to moving towards organic farming rather the production will increase.

What are views on nutritional aspect of organic produce?

- The higher content of key antioxidants under organic management than conventionally grown crops is possible due to the sufficient

uptake of micronutrients due to application of sufficient quantity of organic manures. The trace elements such as Fe, Zn, Cu and Mn act as anti-oxidant enzyme co-factor. Since, organic manures applied have both macro and micro nutrients; uptake of micronutrient will influence the anti-oxidant level. The uptake of micro nutrients was found to be higher under organic management for most of the crops experimented under Network Project on Organic Farming (NPOF) also.

- The results from NPOF indicate slight to moderate improvement in protein content of the crops tested whereas the oil, methionine and oleoresin were not significantly different. The piperin content in blackpepper was significantly higher under organic management.

Is organic food safe?

It is a common misconception that organic food could be at greater risk of *Escherichia coli* contamination because of raw manure application although conventional farmers commonly apply tons of raw manure as well with no regulation. However, organic standards set strict guidelines on manure use in organic farming. Either it must be first composted, or it must be applied at least 90 days before harvest, which allows ample time for microbial breakdown of pathogens. Besides, organic produce contains significantly lower levels of pesticide residues than conventional produce.

How organic farming will different from the conventional farming practices for a beginner?

Organic production of crops is very similar to regular production for planting and harvesting. Varieties are usually the same. Fertility, weeds, insects and diseases need to be managed in a more intensive way. Crop rotation and timing of mechanical cultivation are critical to success. The integration of livestock, to help supply manure/compost nutrients will also be a benefit.

Is organic production economically feasible?

Many factors need to be considered by producers when taking into account the economic feasibility of converting to organic production. There may be reduced costs involved in relation to not having to purchase chemicals, however, there may be increases related to the cost of organically certified inputs such as feed, organic fertilisers and seed. There is sometimes apprehension among farmers that when they switch from inorganic farming to organic farming, they may get lower yields. This transition can be

successfully tackled by first switching to sustainable type of Agriculture i.e. including bio inputs along with inorganic inputs and subsequently reducing the inorganic inputs and switching to complete organics without any loss in yields, rather improvement in yields, quality and taste of the produce.

Is organic farming is advantageous for small and marginal farmers and rainfed areas?

Organic farming is advantageous particularly for the resource poor small and marginal farmers of rain fed areas where the use of costly chemical fertilizers is lower than national average. Total area under organic farming is reported as 7.2 lakh hectares and is miniscule as compared to the net sown area of 140 million hectares. The potential for organic farming is in the niche market that commands premium price for these products. Keeping in view the potential demand, attention needs to be focused on areas which are under natural farming and also in rain fed areas where majority of the farmers are small and marginal and are constrained to practice intensive conventional farming. In these areas, high value crops that fetch premium price to the farmers have to be grown under organic conditions. The ICAR Network Research Project have developed package of practices to be followed under organic farming along with new technologies.

Does organic food cost more than the conventional food?

Production of organic food takes longer to produce and need more work. They are produced, processed and distributed on a smaller scale and subjected to controls and certification. Besides, the cost of organic food production is higher due to following facts:

- Organic farmers don't receive input subsidies like conventional farmers do.
- Organic farming is more labor and management intensive.
- Organic farms are usually smaller than conventional farms and so do not benefit from the economies of scale.

As demand for organic food and products is increasing day by day, technological innovations and economies of scale may reduce costs of production, processing, distribution and marketing of organic produce in long run. Besides, in India there are still plenty of places where food is organic by default because the farmer is growing an indigenous variety of crop that requires no chemical pesticides or fertilizers and one can get cheap organic food that uses no pesticides.

Is organic produce better than that from non-organic farms?

Since the organic production methods differ from conventional ones however, the aim is to produce high quality food and drink. Organic produce has to meet certain safety standards. The difference is that instead of using chemical compounds to combat pests or weeds, organic farmers use multiple crop rotations and resistant varieties to prevent such problems from occurring in the first place. Besides, rather than using artificial preservatives, organic processors keep products as fresh as possible by concentrating on seasonality and local markets.

Does organic food taste better than conventional food?

Scientific studies so far failed to find any conclusive evidence to back this up. However, organic ingredients are increasingly finding favour for taste across the nations. Since, organic food is grown in well-balanced soil; it makes sense that these healthy plants have a great taste. Nowadays, an increasing number of consumers are also of the opinion that organic food tastes better.

Is organic food more nutritious than conventional food?

Although, nutritious quality of food depends on many variables such as seeds, soil type, climate, postharvest handling and crop variety. However, organic products are invariably free from chemical residues and are rich in some nutrients. There are enough indications that organically grown products are rich in vitamin-C and some minerals. Recently under Network Project on Organic Farming, initial studies indicate improvement in some quality parameters of ginger (oleoresin and oil content), turmeric (oil, oleoresin, starch and curcumin content), black pepper (oleoresin content), chillies (ascorbic acid content), cotton (ginning percentage) and vegetables (iron, manganese, zinc and copper content in tomato, French bean, cabbage, cauliflower, pea and garlic).

Is organically produced foods are better in quality?

The concentrations of a range of antioxidants such as polyphenolics were found to be substantially higher in organic crops/crop-based foods, with those of phenolic acids, flavanones, stilbenes, flavones, flavonols and anthocyanins being an estimated 19, 69, 28, 26, 50 and 51% higher, respectively. Many of these compounds have previously been linked to a reduced risk of chronic diseases, including CVD and neurodegenerative diseases and certain cancers, in dietary intervention and epidemiological studies. The frequency of occurrence of pesticide residues was found to be four times higher in conventional crops, which also contained significantly

higher concentrations of the toxic metal Cd (Marcin Baranski, et al. 2014. Higher antioxidant and lower cadmium concentrations and lower incidence of pesticide residues in organically grown crops: a systematic literature review and meta-analyses, British Journal of Nutrition (doi:10.1017/S0007114514001366), p. 1-18.

Slight to moderate improvement in protein content of the crops were observed whereas the oil, methionine and oleoresin were not significantly different. The piperin content in blackpepper was significantly higher under organic management (Annual Report, 2012-13, Network Project on Organic Farming).

Does organic food carry greater risks of food poisoning?

Organic food has to meet all the safety and quality standards as applied to non-organic foods. But sometimes, it is argued that because organic farmers use FYM; and don't routinely use antibiotics; this allows bacteria (particularly *E. coli*) into the food chain and there is a greater risk of pathogen contamination in organic crops. However, FYM is also extensively used in non-organic farming, but with less strict controls than are applied to organic methods. But research has shown that overuse of antibiotics may have resulted in resistant strains of *E. coli* in non-organic production. There is evidence to suggest that organic animals build up a natural resistance to these bacteria.

Agri-Inputs

Where is the large quantity of organic manures for organic farming?

Plant does not differentiate whether a nutrient is offered from chemical fertilizer or from organic sources. There is popular misconception that one would need large quantity of FYM or compost for growing crops under organic farming. This conviction is due to the fact that we measure value of the FYM or compost as a source of nutrients (NPK). This is misleading because this perspective ignores the fact that there are different types of agriculturally beneficial microorganisms in nature with ability to facilitate crop nutrition and even protection. To harness this gift of nature, one has to provide food for these microorganisms in the form of plant biomass, FYM etc. to multiply and function in rhizosphere of a crop. On the field where crops grown small quantities of cow-dung or its ferments can serve as source of beneficial microorganisms and recycling of plant biomass can serve as food for microorganisms. Thus there is no need of large quantities of compost for organic farming. Recycling of all locally available natural resources (plant biomass in particular) is very important.

Scientifically, where crop nutrients come from in organic farming?

A plant can access majority of nutrients from water and air (C, H, O); and assimilate them in its body through biochemical processes during the growth process. Only <10% of its body weight is accessed from soil. Besides, multiple cropping but the integration of annual plants, perennial trees and animals on a given piece of land is also essential to meet the nutrient need of the crop in organic farming. Unlike crop plants, trees accesses potential crop nutrients from meters down in the soil and offer on the soil surface in the form of fallen leaves and lopped branches. In conventional farming importance of this plant biomass that can be harnessed by recycling, is ignored. This plant biomass is an important asset in organic farming and can be used for crop production in various ways e.g. composting or surface mulch.

Do organic farmers must use organic seeds/planting materials?

As per the directives of organic certification, once a field has been fully converted and certified as organic, it should use the seeds that are produced on an organically certified field only. But during conversion period and under non-certified system chemically untreated seeds can be used as an ideal option.

Is organic farming labour intensive?

In absence of mechanization, several protocols of organic farming can be labour intensive. But this fact should go in favour of countries like India where labour is comparatively cheap and ample.

Does the soil fertility deteriorate when fertilizers are not used?

It is scientifically untrue and large numbers of long term studies have concluded that, on the contrary organic management systems improve soil fertility and long term sustainability.

How the insect-pests can be managed on organic farms?

Organic farming systems protect crops from insect-pest damage primarily through biological and cultural practices such as crop rotation, diversification, habitat management, beneficial organism releases, sanitation and timing. Prevention is the organic farmer's primary strategy for disease, weed and insect control. As healthy soils results in healthy plants which are better able to resist disease and insects. Growing plant species that are well adapted for the climate can resist disease and pests in better way. However, when pest populations get out of balance, growers

can try options like insect predators, mating disruption, traps, and barriers. If these fail, permission may be granted by the certifier to apply botanicals and a few relatively non-toxic synthetic pesticides such as soap under restricted conditions.

How are crop diseases managed on organic farms?

Cultural, biological and physical methods such as crop rotation, sanitation, pruning, and selection of disease resistant varieties are all part of organic disease management. By improving organic matter and biological activity of soil, soil-borne diseases can be minimized. Some natural substances, such as clays and a few synthetic fungicides such as copper sulphate are permitted by the NSOP when used in conjunction with the farm plan and used according to the restrictions.

Natural enemies and bio-diversity in traditional/integrated and chemical farming conditions?

Natural enemies of crop pests and diseases such as Coccinellids, syrphids, spiders, Micromus, Chrysopa and campoplexids were higher under organic management compared to integrated and inorganic management. Coccinellids, which naturally reduce the hoppers and leaf folders was found to be two to three times higher under organic management in cotton, groundnut, soybean, potato and maize crop fields. Similarly, spiders which also control the pests are found to be twice higher under organic management compared to inorganic management. The diversity of arthropod population in soil viz., Collembola, dipluran, pseudoscorpions, cryptostigmatids and other mites population was also found to be higher under organic management compared to integrated and chemical management (Annual Progress Report, 2010-2013, Network Project on Organic Farming, University of Agricultural Sciences, Dharwad, Karnataka). Integrated pest management validation trials conducted in Basmati rice (Atterna and Sibouli in Haryana; Tilwari in Uttarakhand; Bambawad in Uttar Pradesh) by ICAR-National Centre of Integrated Pest Management, New Delhi has shown higher population of natural enemies and more biodiversity in integrated crop management compared to chemical farming.

How are weeds managed on organic farms?

Weeds often help to conserve soil, improve organic matter and provide beneficial habitat for natural enemies on organic farms. Weed management on organic farms consists of application of cultural and mechanical techniques such as rotation of crops that suppress weeds, mulching, tillage,

water management and manual weeding. Use of plastic mulches are permitted provide they are removed at the end of the season.

Why restrict pesticides when India is a low user?

Since on the basis of quantity of pesticide used per unit area India is one of the lowest users. However, on the basis of quantity of pesticide used in a given crop such as vegetables, it may even be more than the high use countries. Higher chemical residue in many food items is an indication of toxic levels of pesticide use.

What pesticides can I use in organic production?

1. No chemical weed killers are allowed in organic production.
2. A very small number of basic fungicides e.g. copper hydroxide, copper oxychloride, copper sulfate (Bordeaux mixtures), sulfur (elemental), Lime-sulfur, soap are allowed with special permission from certifying agencies.
3. Few simple insecticides e.g. nicotine sulfate, sabadilla, rotenone, neem, pyrethrum/pyrethrins etc. are allowed with special permission to use them on certified farms.

Are all organic produces pesticide free?

Sometimes organic crops can be exposed to the traces of agricultural chemicals by rain and ground water, due to their overuse. Pesticide residues are rarely detected on organic produce, and are certainly well below levels on conventionally produced food.

How soil fertility managed on organic farms?

Soil fertility on organic farms is managed through planned cropping rotations, green manures, FYM, composts and slurries, approved supplementary fertilizing materials and imported organic manures such as organic poultry manure etc. Mined minerals and few synthetic substances are also permitted as supplemental sources of nutrients.

Should organic farmers take any precautions when they apply manure on organic farms?

On organic farms, raw manure and other organic materials must be properly handled to avoid water, soil and crop contamination. In order to be applied, manure must be properly composted. Crops that have the edible portion in contact with the soil e.g. leafy greens, some cucurbits etc. must be harvested at least 120 days after the application of undecomposed manure. Other

crops for human consumption must be harvested at least 90 days after raw manure application.

What is the National List?

The National List contains the **allowed synthetic** and **prohibited natural** (non-synthetic) substances that are exceptions to the general rule for organic production. It is not a comprehensive list of all approved materials, rather it can be described as an "open" list since it contains only 1) synthetic materials allowed for use in crop and livestock production and 2) non-synthetic (natural) materials prohibited for use in crop and livestock production.

How are organic manures beneficial in the cultivation of crops?

Organic manures increase the organic matter in soil. Organic matter in turn releases the essential plant nutrients in available form for the use of crops. However, organic manures should not be seen only as carriers of plant food. These manures also enable a soil to hold more water and also help to improve the drainage in clay soils. They provide organic acids that help to dissolve soil nutrients and make them available for the plants.

Organic Certification

What does "Certified Organic" mean?

"Certified Organic" means the item has been grown according to strict uniform standards that are verified by independent state or private organizations. Certification includes inspections of farm fields and processing facilities, detailed record keeping, and periodic testing of soil and water to ensure that growers and handlers are meeting the standards which have been set.

What are organic standards?

Organic standards are the set of "rules" which, as a registered organic producer, one must follow in order to maintain the certificate which will allow selling produce as organic.

Can any type of agricultural product become certified organic?

Any agricultural product that meets state certification requirements may be considered as organic. Nowadays organic foods are becoming available in exciting varieties e.g. pasta, sauces, frozen juices, milk, ice cream, cereals, meat, poultry, breads, soups, chocolate, cookies, beer, wine, vodka etc. in order to be certified organic these foods have been grown and processed

according to organic standards. Organic fibre products have moved beyond food items and include clothing in a wide variety of styles.

What is organic labelling?

Organic label indicates that a product has been certified against specific organic standards. The label carries the name of the certification body and the standards with which it complies. This label functions as a guide to the consumer. Certification bodies evaluate operations according to different organic standards and can be formally recognized by more than one agency. The label of a given certification body, therefore, informs the consumer on the type of standards complied with during production and processing as well as on the type of recognition granted to the certification body.

What are certified organic products?

Certified organic products are those which have been produced, stored, processed, handled and marketed in accordance with precise technical specifications (standards) and certified as “organic” by a certification body. Once conformity with organic standards has been verified by a certification body, the product is afforded a label. This label will differ depending on the certification body but can be taken as an assurance that the essential elements constituting an “organic” product have been met from the farm to the market. It is important to note that an organic label applies to the production process, ensuring that the product has been produced and processed in an ecologically sound manner. The organic label is therefore a production process claim as opposed to a product quality claim.

What is non-certified organic food?

In developing countries like India there are agricultural systems that fully meet the requirements of organic agriculture but which are not certified. Non-certified organic agriculture refers to organic agricultural practices by intent and not by default; this excludes non-sustainable systems which do not use synthetic inputs but which degrade soils due to lack of soil building practices. It is difficult to quantify the extent of these agricultural systems as they exist outside the certification and formal market systems. The produce of these systems is usually consumed by households or sold locally (e.g. urban and village markets) at the same price as their conventional counterparts. Although the uncertified organic produce does not benefit from price premiums, some cases have been documented where non-certified organic agriculture increases productivity of the total farm agro-ecosystem, and saves on purchasing external inputs.

How long an organic certificate valid for?

Organic certificate of a farm remains valid until 31st December of next year or until its inspection in the next year. Organic certificate stands invalid on voluntarily surrender or when certification is suspended by the certification agency.

Who carries out organic certification in India?

In India, Agricultural Processed Foods Export Development Authority (APEDA) under Ministry of Commerce is the controlling body for organic certification for export. To provide a focused and well directed development of organic agriculture and quality products, Ministry of Commerce and Industry, launched a National Program on Organic Production (NPOP) in 2000, notified under the Foreign Trade & Development Act (FTDR Act). This document provides information on standards for organic production, systems criteria, and procedures for accreditation of Inspection and Certification bodies, the national organic logo and the regulations governing its use. Currently 25 certification agencies have been authorized to undertake certification 13 process under NPOP.

What is the Accreditation and Certifying Mechanism for Organic Farming in India?

There are two ways of accreditation and certifying organic farming. Participatory Guarantee System (PGS-India) is for domestic trade and Agricultural and Processed Foods Export Development Authority (APEDA) under Ministry of Commerce as third party verification and certification of organic production processes for export.

What are NSOP and NPOP?

NSOP is National Standards for Organic Production, which has been formulated under National Programme for Organic Production (NPOP) by Ministry of Commerce, Govt. of India.

References

- http://www.icrisat.org/vasat/learning_resources/OrganicFAQs/organic_farming.html
- <http://www.mycorrhizae.com>
- <http://www.hortsorb.com>
- <http://kendujhar.nic.in>
- <http://www.greenpeace.org>