



## Organic farming: The only option we have to live healthy life

Robin Kumar and Swati Tyagi

ICAR-Indian Institute of Farming Systems Research, Meerut (U.P.) (India)

(Email : [khatiyar@gmail.com](mailto:khatiyar@gmail.com))

Organic farming refers to agricultural production systems reliant on green manure, compost, biological pest control, and crop rotation to produce crops, livestock and poultry. Organic farming is dependent on developing ecological biodiversity in the plantation farm to interrupt the habitation of pests and diseases, and ensuring meaningful maintenance and improvement of soil fertility. In simple terms, organic farming is an agricultural practice aimed at attaining balanced ecological production management system that encourages and improves soil biological activity and biodiversity. It involves minimum use of synthetic chemicals and inputs outside the farm while ensuring management practices that preserve, replenish, and enhance ecological stability. Organic production is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop enterprises that are sustainable and harmonious with the environment. Farmers pour tons of phosphate and nitrogenous fertilizer on their cropping lands every year. Because it is soluble, much of this fertilizer is either washed off the soil surface and into waterways (especially phosphates) or leaches through the soil profile beyond the reach of plants and finds its way less directly into waterways (especially nitrates). Organic farming is only cure of it. Organic agriculture with its low input needs of naturally derived substances produces less greenhouse gas emissions and is considerably more climate friendly.

### Principle of organic farming:

*The principle of health:* Organic agriculture should sustain and enhance the health of soil, plant, animal and human as one and indivisible. mm.

*The principle of ecology:* Organic agriculture should be

based on living ecological systems and cycles, work with them, emulate them and help sustain them with the help of it.

*The principle of fairness :* Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

*The principle of care :* Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well being of current and future generations and the environment.

**Quality of organic food material:** There is still considerable scientific controversy about whether or not

and to what extent organic production methods result in food quality and safety and human health gains. We, therefore, critically discuss the currently available evidence for composition differences and potential health impacts of organic food consumption below.

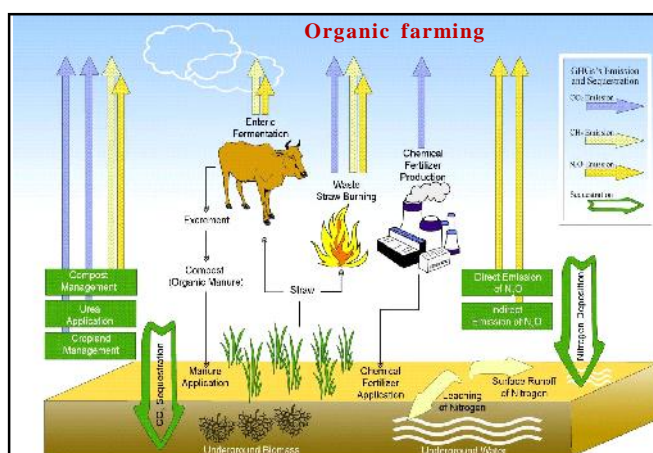
– Organic crops have higher antioxidant activity and between 18 and 69 per cent higher concentrations of a

range of individual antioxidants; increased intakes of polyphenolics and antioxidants has been linked to a reduced risk of certain chronic diseases such as cardiovascular and neurodegenerative diseases and certain cancers.

– Conventional crops have higher levels of the toxic metal cadmium and are four-times more likely to contain detectable pesticide residues, there are general recommendations to minimize the intake of pesticides and cadmium to avoid potential negative health impacts.

– Conventional crops also have higher concentrations of protein, nitrogen, nitrate, nitrite, respectively, increased intakes of these compounds have been linked to both positive and negative health impacts.

– Organic meat, milk, and dairy products have approximately higher concentrations of nutritionally-desirable omega-3 fatty acids, intakes of very long chain



omega-3 fatty acids in Western diets and there are EFSA (European Food Safety Authority) recommendation to at least double their intake .

- Organic milk was reported to contain higher levels of total conjugated linoleic acid (CLA), higher iron and  $\alpha$ -tocopherol concentrations, which are all considered to be nutritionally desirable, although the evidence for health benefits of CLA is mainly from in vitro and animal studies.

- Conventional milk was estimated to have and higher concentrations of iodine and selenium, respectively; milk is not a major source for selenium, but may be the main source of iodine in countries were iodized salt in not widely available or used; there is concern that the lower iodine content in organic milk may cause iodine deficiency (especially during pregnancy and/or in individuals with low milk consumption) and associated negative health impacts.

#### **Advantages of organic farming:**

- Organic farming method uses the natural environment to enhance the productivity of agriculture.

- Organic farming uses carbon based fertilizers and biological pest control and do not use synthetic fertilizers.

- Crop diversity can be seen in organic farming. In conventional farming mass production of one crop in one location is focused while in organic farming it is possible to grow multiple crops in the same place.

- Organic farming also controls other organisms with the help of methods such as biological pest control and integrated pest management.

- Organic agriculture improves the health of people, soil and ecosystem.

- Organic agriculture reduces the use of non-renewable energy sources by using organic fertilizers and reducing the consumption of agrochemicals.

- Organic farming helps to control green house effect.

- Organic stops global warming and climate change and keeps environment clean.

- Organic foods are rich in nutritional value and are free from harmful fertilizers, herbicides and pesticides.

- Organic farming improves the taste and quality of food and organic agriculture are climate and ecologically friendly.

- It helps in maintaining environment health by reducing the level of pollution

- It reduces human and animal health hazards by reducing the level of residues in the product.

- It helps in keeping agricultural production at a higher level and makes it sustainable.

- It reduces the cost of agricultural production and also improves the soil health

- It ensures optimum utilization of natural resources for short-term benefit and helps in conserving them for future generation.

- It not only saves energy for both animal and machine, but also reduces risk of crop failure.

- It improves the soil physical properties such as granulation and good tilth, good aeration, easy root penetration and improves water-holding capacity.

- It improves the soil's chemical properties such as supply and retention of soil nutrients and promotes favourable chemical reactions.

#### **Challenges in organic farming:**

*Productivity:* Though industrialized farming is more productive but over the longer time frame, productivity advantages dwindle. In my years working with broadacre farmers in the wheatbelt of WA, it was common for them to remark on how much richer pastures and crops were in their youth. Industrialized agriculture thrashes the land, and diminishes its soil life to the point where it can no longer function to convert available organic matter into soil fertility. Organic farming benefits food production without destroying our environmental resources, ensuring sustainability for not only the current but also future generations.

*Cultivation :* While their conventional counterparts may sow by direct drilling of seed into herbicide treated soils, organic farmers are usually at least partly dependent on cultivation to remove weeds prior to sowing. In contrast to cultivation, direct drilling does not mechanically disrupt soil structure and removes the risk of exposed soil being lost to wind or water erosion. It's a major disadvantage of organic farming.

*GM Crops:* Organic growers do not use genetically modified or engineered food crops, some of which are engineered to tolerate herbicides (e.g. "Roundup Ready Canola") or resist pests (e.g. Bollworm resistant cotton). Conventional growers, on the other hand, are free to "take advantage" of GM crops.

*Time :* Indeed, organic farming requires greater interaction between a farmer and his crop so that, naturally a single farmer can produce more crop using industrial methods than he or she could by solely organic methods.

*Skill:* It requires considerably more skill to farm organically. Organic farmers do not have some convenient chemical fix on the shelf for every problem they encounter. They have to engage careful observation and greater understanding in order to know how to tweak their farming system to correct the cause of the problem.