ORGANIC FARMING AND ITS HEALTH IMPLICATIONS

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INTRODUCTION

In recent years, organic farming as a cultivation process is gaining increasing popularity. Organically grown foods have become one of the best choices for both consumers and farmers. Organically grown foods are part of go green lifestyle. These products are not grown with synthetic pesticides, antibiotics, growth hormones, application of genetic modification techniques (such as genetically modified crops), sewage sludge, or chemical fertilizers. The main principles and practices of organic food production are to inspire and enhance biological cycles in the farming system, keep and enhance deep-rooted soil fertility, reduce all types of pollution, evade the application of pesticides and synthetic fertilizers, conserve genetic diversity in food, consider the vast socio-ecological impact of food production, and produce high-quality food in sufficient quantity.

Organic food and farming have continued to grow across the world. Since 1985, the total area of farmland under organic production has been increased steadily over the last three decades. By 2017, there was a total of 69.8 million hectares of organically managed land recorded globally which represents a 20% growth or 11.7 million hectares of land in comparison to the year 2016. In 2017, it was also reported that day to day the number of organic produces increases considerably all over the world. Asia contributes to the largest percentage (40%) of organic production in the world and India contributes to be largest number of organic producer. The growth of organic farming in India was quite dawdling with only 41,000 hectares of organic land comprising merely 0.03% of the total cultivated area. In India during 2002, the production of organic farming was about 14 000 tons of which 85% of it was exported. The most important barrier considered in the progress of organic agriculture in India was the lacunae in the government policies of making a firm decision to promote organic agriculture. Moreover, there were several major drawbacks in the growth of organic farming in India which include lack of awareness, lack of good marketing policies, shortage of biomass, inadequate farming infrastructure, high input cost of farming, inappropriate marketing of organic input, inefficient agricultural policies, lack of financial support, incapability of meeting export demand, lack of quality manure, and low yield.

NUTRITIONAL BENEFITS AND HEALTH SAFETY

- According to a study conducted by AFSSA (2003), organically grown foods, especially leafy vegetables and tubers, have higher dry matter as compared to conventionally grown foods.
- Although organic cereals and their products contain lesser protein than conventional cereals, they have higher quality proteins with better amino acid scores. Lysine content in organic wheat has been reported to be 25%–30% more than conventional wheat.
- Organically grazed cows and sheep contain less fat and more lean meat as compared to conventional counterparts (Hansson et al., 2000). Organically fed cow's muscle contains fourfold more linolenic acid, which is a recommended cardio-protective ω-3 fatty acid, with accompanying decrease in oleic acid and linoleic acid.
- Pastushenko et al. (2000) found that meat from an organically grazed cow contains high amounts of polyunsaturated fatty acids. The milk produced from the organic

farm contains higher polyunsaturated fatty acids and vitamin E. Vitamin E and carotenoids are found in a nutritionally desirable amount in organic milk.

- Organic plants contain significantly more magnesium, iron, and phosphorous. They also contain more calcium, sodium, and potassium as major elements and manganese, iodine, chromium, molybdenum, selenium, boron, copper, vanadium, and zinc as trace elements.
- Organic foods (94%–100%) contain no pesticide residues in comparison to conventionally grown foods. Fruits and vegetables contain a wide variety of phytochemicals such as polyphenols, resveratrol, and pro-vitamin C and carotenoids which are generally secondary metabolites of plants.
- Organic fruits and vegetables contain 27% more vitamin C than conventional fruits and vegetables. These secondary metabolites have substantial regulatory effects at cellular levels and hence found to be protective against certain diseases such as cancers, chronic inflammations, and other diseases.
- Some organic foods such as corn, strawberries, and marionberries have greater than 30% of cancer-fighting antioxidants. The phenols and polyphenolic antioxidants are in higher level in organic fruits and vegetables. It has been estimated that organic plants contain double the amount of phenolic compounds than conventional ones.
- Organic wine has been reported to contain a higher level of resveratrol.
- Organically grown tomatoes contain more salicylic acid than conventional counterparts. Salicylic acid is a naturally occurring phytochemical having anti-inflammatory and anti-stress effects and prevents hardening of arteries and bowel cancer.
- Organic vegetables normally have far less nitrate content than conventional vegetables. Nitrates are used in farming as soil fertilizer but they can be easily transformed into nitrites, a matter of public health concern. Nitrites are highly reactive nitrogen species that are capable of competing with oxygen in the blood to bind with hemoglobin, thus leading to methemoglobinemia. It also binds to the secondary amine to generate nitrosamine which is a potent carcinogen.

CONCLUSION

In addition to improved yields, the use of organic methods can benefit the nutritional value of foods in several ways, compared with subsistence agriculture, and in some respects also when compared with the use of high-input conventional farming methods. It also helps in soil protection along with providing better nutrition. Because of the no use of pesticides and insecticides during the whole duration of crop production it also provides healthy working environment around farms. Fertilizers are made naturally and on site so it contributes to environment pollution control as well. Organic farming provides an opportunity to grow variety of crops and its climate friendly. Thus, it is important now to shift farming from conventional to organic farming.