

ORGANIC FARMING; 'BANE OR BOON'

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Natural organic farming originated during the Neolithic revolution, when human population transformed from hunters to husbanders of animals. It was a slow and erratic revolution and there is no absolute certainty as to why and where it began (Payne and Hodges 1997). In this system the production and productivity was less. This was fine as natural products were plenty and population was less. Then mixed agriculture was practiced and it spread to low land by 5000 B.C, followed by irrigated agriculture. In course of time the rate of population increased but not the rate of grain production which leads to famines in different parts of the world. In the great famine of 1930 about 10 lakh people died due to starvation.

As there was more population as population growth, the need for crops to sustain the population growth also increased, but the production per acreage or the yield per area was less and the production from a particular area was not as much as compared to the first yield. In order to provide for the increasing food needs, more fields, crop land were opened up and above all the productivity, the yield per hectare could not be sustained without fertilizer and pesticides.

Technological advances during world war -11 accelerated post-war innovations in all aspects of agriculture, resulting in big advances in mechanisation, large scale irrigation, fertilization and pesticides. In particular, two chemicals that had been produced in large quantity for warfare were repurposed for peacetime agricultural uses. Ammonium nitrate, used in ammunitions, became an abundantly cheap source of nitrogen. A range of new pesticides appeared, D.D.T, which had been used to control insects around troops, became a general insecticide, launching the era of wide spread pesticide use. At the same time, increasingly powerful and sophisticated machinery allowed a single farmer to work over larger areas of land. Fields grew bigger, and agribusiness as we know it today was well on its way.

In 1944, an international campaign called the Green Revolution was launched in Mexico with private funding from the U.S. It encouraged the development of hybrid

plants, chemical controls, large-scale irrigation and heavy mechanization in agriculture around the world.

The short term increase in production achieved by using fertilizer and pesticides prompted farmers for the application of massive amount of fertilizer, but one reaches a point of diminishing returns in overuse of fertilizer and pesticides. Moreover the pollution associated with industrial revolution also resulted in the decline in the quality of agricultural produces. This set the stage for the emergence of modern organic farming concepts

HISTORY OF ORGANIC FARMING (*web reference*)

The British botanist Sir, Albert Howard is often referred to as the father of modern organic agriculture. From 1905 to 1924, he worked as an agricultural adviser in Pusa, Bengal, where he documented traditional Indian farming practices and came to regard them as superior to his conventional agriculture science. He published his observation in the book 'The Agricultural Testament' in 1940. During the days of industrial and green revolution nobody accepted his organic farming concept. In Germany, Rudolf Steiner's development, biodynamic agriculture, was probably the first comprehensive organic farming system. Steiner emphasized on the farmers role in guiding and balancing the interaction of the animals, plants and soil. Healthy animals depended upon healthy plants for their food, healthy plants upon healthy soil and healthy soil upon healthy animal for the manure.

In 1939, influenced by Sir Howard's work, Lady Eve Balfour launched the Haughley Experiment on farm land in England. It was the first scientific, side-by-side comparison of organic and conventional farming. Four years later, she published 'The living Soil' based on the findings of the experiment. Widely read, it led to the

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formation of a key international organic advocacy group, the Soil Association.

The coinage of the term 'Organic Farming' is usually credited to Lord Northbourne, in his book, 'Look to the Land' (1940) wherein he described a holistic, ecologically balanced approach to farming.

In Japan, Masanobu Fukuoka, a microbiologist working in soil science and plant pathology, began to doubt the modern agricultural movement. In the early 1940's he quit his job as a research scientist, returned to his family farm and devoted 30 years to developing a radical, no-tillage no fertilizer organic method for growing grain known as Fukuoka farming. He published his ideas in a book entitled 'One Straw Revolution' wherein he emphasized the slogan 'Return back to nature'.

ORGANIC ANIMAL HUSBANDRY

According to Mr. K.C. Philip, Managing director of J.P.S. Agro products, sustainable animal husbandry is possible only through organic farming. Animals should be allowed to live on their natural instincts in eco-friendly shelter with pure air, water and quality feed which can only lead to the production of quality milk and meat. The over use of biological waste materials like Urea and offal materials in cattle feed ultimately leads to deterioration of animal health. This results in unhealthy immune system which leads to disease, reproductive failure, ultimately resulting in the loss of cattle. We are in a situation wherein what ever is stuffed and marketed as pellet is considered as cattle feed and the farmers pay high price for the feed. The feed companies exploit farmers by incorporating low quality agricultural by-products into the feed. There is no agency to monitor, check and verify the quality of cattle feed in the state. This knowledge has prompted the feed companies to make huge profit. The toxic residues from feed in the milk and the antibiotic residues in milk (as none of the farmers follow the milk withdrawal regimen) lead to antibiotic resistance and high incidence of cancer in human beings. His

organic farming objective is to reduce as much as known adulterants and toxins in the milk and to market best quality milk which will sustain general human health.

Major lacuna in today's milk marketing system is the lack of quality consciousness. The milk should be graded on the qualities such as 1) Bacterial load 2) Somatic Cell Count 3) Residues and 4) Fat and S.N.F. The best quality milk should fetch better price. Now the farmers are not aware of hygienic and quality milk production. What ever is produced is pooled and marketed. Even if the milk is produced hygienically or non- hygienically the farmer gets the same price.

Another major draw back is the compartmentalization of the different departments working in this sector. There are no effective forward and backward linkages between the different departments, farmers and research institutes. Each department is functioning to achieve their short term targets with out a long term planning. Though large amount of money was spent for research, practical field problems of the farmers were not researched and the ultimate loser is still the poor farmer with no solution for his problems. Few organized dairy farms in each district would be sufficient to meet the demand of milk in the entire state and can do away with the import of milk from neighboring state. Presently there is large scale use of preservatives and antibiotics in milk. That is why some of the milk vendors venture to sell milk at room temperature from dawn to dusk.

Though 100% organic farming should be our goal, practically it is impossible as the ecologically productive land available to each person on earth has decreased over the last century as the population has increased. For 100% organic livestock production, 1st the land has to be certified, then the fodder produced on the land and finally the animals and their products.

Ultimately he stresses the need for a quality control government agency for milk, meat, feeds, and fodder which will ensure the production of quality and healthy products which can only protect the consumer's rights.

Mr. P.C. Madhavan Nair who served as vengapally panchayath president for 10 years and a progressive livestock farmer is the propounder of mixed organic and chemical farming concept. According to him after the industrial revolution when large scale production of chemical fertilizer was possible the farmers were misguided that fertilizer means chemical fertilizer alone and not organic fertilizer. This resulted in the destruction of micro flora and fauna which had its own system of fixing atmospheric nutrients into the soil. This changed the composition of soil leading to massive crop failure. Although organic manures can supply all the essential nutrients, the full requirements of certain nutrients like nitrogen, phosphorus, potassium, calcium, magnesium and sulphur which are required relatively in large amounts for the normal growth and high yields of crops, cannot be supplied through organic manures alone. Insufficient supply of these nutrients will lead to malnutrition of the crop resulting in low yields and poor quality of the produces.

He is of the opinion that the organic farming concept, once taken away from India is being reintroduced to India by the western organizations to destroy the agricultural economy of the country. From a country which sustained on the wheat and milk powder imported from U.S.A. as part of P.L - 450 schemes in

1950, India has risen as the world's largest producer of milk by the year 2000. After green revolution India became self reliant in grain production and India rose as a major agricultural country. With bumper crops in Punjab we could even export food grains to neighboring countries. The hidden agenda behind the organic agricultural production is that the very high price offered to the organic products will attract more and more farmers into this system. By following natural methods the total production will plummet down leading to scarcity of essential commodities in the midst of growing demands. When such a situation arise our markets has to be opened and the foreign countries which will supply essential commodities will have the right to decide the economy of our country.

At this instance we should not forget that for farming 1 hectare of land an American farmer receives a subsidy of about 1 Lakh rupees, while the poor Indian farmer doesn't get a single pie as subsidy.

Total organic milk production in its strict sense is a retrograde evolution as we will have to rear more number of wilder forms of cattle which are very hardy, disease resistant, heat tolerant and free from production disease with very less milk production. In the state of Kerala where the human population density is very high, the percapita land availability is very less and where there are no permanent pastures, we cannot even imagine increasing the cattle population as it will increase the competition for land. Moreover, the increase in the number of cattle will lead to the production of more green house gases like carbon dioxide and methane, the by-product of rumen fermentation ultimately augmenting global warming and increasing atmospheric temperature.

According to Dr. Murphy, if 1 pair of fly breeds for 1 year, it would produce enough flies to cover the entire country in 1 metre thickness. (Sustainable living –how do we get there. 1998). So judicious use of insecticides, fungicides and weedicide would be necessary under intensive agriculture as the endemic outbreaks of pests, disease and weeds cannot be controlled using non chemical, botanical, and biopesticides alone.

Total organic farming would not be feasible, viable and profitable under high productive intensive production system. Farmyard manure has become a scarce commodity due to dwindling animal population. Green manuring has also become uncommon as the farmers are interested in growing as many crops of economic importance as possible. Green leaf manuring has also become limited due to over-exploitation of shrubs and trees.

Organic farming could be possible on small scale under special situation, where plenty of land and

organic manure like farm yard manure would be available as in dairy-based system. High yielding animals cannot be sustained at high levels through exclusive organic farming. Exclusive organic farming would be possible under natural ecosystem like forestry, but not under high-productive animal production system. The productivity per animal per unit time would decline over the years under exclusive organic farming.

In agriculture, the nutrients supplied both through manures and fertilizers are absorbed by plants in the same way. They don't function differently with in the plant. The plant does not and cannot differentiate between the nutrients from the organic and the inorganic source. For example, plants can absorb nitrogen either as NH_4^+ ions or as NO_3^- ions. The plant will absorb these ions released either from the fertilizer or from the manure and they will function similarly with in the plant irrespective of their source.

Conclusion.

Organic means carbon, hydrogen, oxygen, nitrogen, phosphorus and sulphur compounds. That's the true definition of it and organic chemistry is where all the pesticides, fertilizers and other petroleum based productions are dealt with. Certified organic means what these production methods are and 'natural' is not a production method. The true definition of natural according to F.D.A. is unprocessed. So organic is a production method that utilizes natural product.

The only true organic farmer is the tribes man we met herding local cattle into the forest in Noolpuzha panchayath in Wayanad district. He adopts no management practice as no knowledge has ever reached him. Every day he takes his herd into the forest. The cattle eat and drink what the nature offers and breeds and multiply naturally. But he will never get an organic certification as he cannot afford to pay the certifying agency.

The revolution in wire less telephony has resulted in the erection of hundreds of mobile towers through out the state. All the living beings, plants and animals are under continuous electromagnetic radiation. No body knows the effect of these radiations on life. So under these circumstances it is for you to decide how far organic we can be.