ORGANIC FARMING : REMARKABLE CHALLENGE FOR INDIAN AGRICULTURE

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Principles of organic farming :

– Enhancement of soil fertility by conservation and management of organic matter.

– Improvement in soil health by nourishing the living matter in soil.

– On-farm development, conservation and efficient utilization of natural resources.

– Crop rotation/intercropping/multiple cropping to change the field ecology and disrupting the life cycle of insect pests, pathogens and weeds.

– Utilization of bio-fertilizers, green manures etc. in plant nutrient management for maintenance of ecological balance.

Status of organic farming in India (NPOP-APEDA, 2008) :

1.	Total Production	585970 M.T.
2.	Total quantity exported	19456 M.T.
3.	Value of total export	Rs. 30124 lakhs
4.	Total area under certified cultivation	3,39,113 ha (Includes wild herb area of MP and UP)
5.	Numbers of farmers	1,41,904
6.	Export value	78 Million USD
7.	Per cent of export	4 %
8.	Per cent domestic consumption	10%
9.	Potential share	5-6%
10.	Anticipated by 2010	10-12%

Fertilization practices under organic farming :

– Organic farming uses a variety of methods to improve soil fertility, including crop rotation with high and low biomass crops, cover cropping, application of vermicompost, biocompost and mulching.

– Biodegradable materials of microbial, plant and animal origin should be returned to the soil to increase or at least maintain the its fertility and the biological activity.

– Origanic farming heavily relies on the natural breakdown of organic matter, using techniques like green manure and composting. To replace nutrient taken from the soil by previous crops.

– Recycling of nutrients from livestock manures or crop operations (trimmings), of usage of naturally mined fertilizers can be adopted.

– Organic farmers also use processed natural fertilizers such as bone meal, blood meal and various mineral powders such as rock phosphate and green sand (a naturally occurring form of potash).

– Emphasis should be given to generate and use own on-farm organic fertilizer.

Some important findings are :

– Badanur *et al.* (1990) observed that available phosphorus content of soil increased significantly with crop residues and green manure over fertilizer application in sorghum. Available potassium content of soil was highest with jowar stubbles and safflower stalks. Subabul and sunhemp also increased potassium content of soil significantly over fertilizer application. This may be attributed to release of potassium from crop residues after decomposition.

– Singh *et al.* (2007) reported that soil microbial population (actinomycetes, Bacteria, Fungi) enhanced due to application of organic amendments in comparision to absolute control as well as recommended fertilizers application that in turn resulted in a notable enhancement in soil dehydrogenase and phosphatase enzyme activity. Addition of four organic amendments *viz.,* BGA, Azolla, FYM and Vermicompost could give the optimum yield (4.50t h^{-1}) of organic Basmati rice and improve grain and soil quality.

– Rangaraj *et al.* (2007) conducted experiment at coastal saline research center, the results revealed that addition of agro-industrial waste as organic manure favourably improved soil organic matter pH, EC, Microbial population and enhanced the soil macro (N, P,

K) and micro nutrients (Zinc, copper, maganese and iron) and improved the crop yield in finger millet.

– Patil (2007) reported that addition FYM (20 t/ ha) + Neem Cake (250 kg/ha) + Improved Package (Trichoderma 6.25 kg/ha + Azospirillium 2.5 kg/ha + PSB 2.5 kg / ha + Biological Pesticide used. (Bt, HaNPV) has produce comparable yield in tomato to that of recommended dose of chemicals. The B:C ratio was better in organic than inorganic treament.

– Surekha *et al.* (2009) observed that recycling of paddy straw alone or in combination with green manure increased the productivity of rice-rice system with positive nutrient balance and improved grain yield and soil quality in terms of organic crabon and available N, P and K.

– Venugopalam (2009) reported that addition of organics (Vermicompost @2T /ha + 3t FMY + Azotobacter + *in situe* cowpea GM + Sesbanea lopping) increase the yield of cotton after 3rd year as compaired to inorganic treament, during eitght year study. Fiber quality parameters as well as soil fertility status was also improved in organic treatments.

– Ghanshyam *et al.* (2010). Application of FYM (5 t) and Vermicompost (5 t) to green gram increased grain yield by 30.5% and net returns over no manure.

Constrants of organic farming :

– Organic farming is not cost effective

– Unavailability or less availability of organic manure.

– No quality standards for such manures.

– Difficult for the marginal farmers to export from remote area of a small organic produce.

– Cost of organic certification is high and lengthy procedure.

Future strategies :

– Standarization of organic farming.

– Development of package of practices.

– Benefits obtained in relation to yield, quality and price.

– Demand and supply situation.

– Basis of certification, identification of areas and crops suited for organic farming.

– Sustainability of productivity.

– Constraints analysis, comparative sutides of organic and inorganic farming on long term basis.

– Availability of organic inputs.

– Convenience of use and agronomic efficiency.

Conclusion:

The organic farming as a concept is certainly beneficial for conservation of natural resources like soil, water and plant and has to go a long way in Indian agriculture with respect to its feasibility.

There is enormous scope for organic farming as regards to the constraints like unavailability of organic manure, synchrony of nutrient availability in soil and need of crops and the sustainability of agricultural production strategies.