

Limitations in Organic Farming

Many farmers are convinced about the importance of organic agriculture and have accepted to adopt this approach on their homestead area. But they are not always able to use it on major farming land. Homestead land gets priority for organic manure and little remains for big farms.

Era of applied science:

A growing demand for organic produce creates a demand for technologies that facilitates organic farming, also called ecological agriculture, without compromising on its standards⁶. Technological advances would allow for more efficient soil nutrient management and economical weed control in organic systems. These technologies will need to meet constraints such as economically justifiable capital and operating costs, the use of renewable resources and high energy efficiency, minimum time and labour inputs, animal welfare and ecological sustainability.



Constraints

One of the main constraints in organic agriculture is labour shortage and lack of support from local organizations³ and certain commodities receive subsidy payments while others do not in the US market⁷. Besides the well known limitation of the availability of farm yard manure and other forms of nutrients in desired quantities, water availability is also an important constraint for adoption of organic farming, particularly in arid and dry semi arid tropics.

1. *Environmental constraints*: It is here that ingenuity and efforts are required to increase crop productivity and farm production despite recurrence of environmental constraints of drought and water scarcity¹.



- a. *Soil quality*: The steady growth of human population coupled with fastened developmental activities exerts heavy pressure on India's limited land resource and cause severe land degradation.
- b. *Water quality*: According to the National Water Quality Inventor report, compared to the point sources, agricultural non point sources (sedimentation, irrigation and nutrient release like phosphorous & nitrogen) are the leading contributor to water quality degradation of rivers and lakes. Regular irrigation of crop land with sewage and industrial waste water may cause heavy metal accumulation in soil and vegetables and degrades soil quality. The overall effect is reduced crop growth and risks to human health. In addition, farmers and ranchers often feed and maintain livestock in small areas which slowly become major source of animal waste. Absence of surplus rainwater for harvesting and long periods of low soil moisture can limit the overall biomass production for recycling⁵.



2. *Health issues*: In addition to soil and water-borne sources, air borne toxicants also contaminate crops and vegetables even in areas away from emission sources. A vast majority of population in India is engaged in agriculture and is therefore exposed to pesticides used in agriculture which results in acute and chronic health problems.
3. *Atmospheric deposition*: Aerosols is rising in many parts of the world including India. The potential risk to local inhabitants around mining areas has also been reported. Deposition of toxic metals could affect human health and plant performance directly or through soil and food chain associated routes which also cause significant damage to soil micro flora in organically amended soil.

Here are the constraints in Organic Agriculture

The marketability of organic produces is not well developed in our country; we are still far away to reach the goal. Many conventional farmers still view organic agriculture as an absurd technique and conventional products are of higher quality than organic products³. Organic farms produce fewer crops per unit of land compared to modern farming. Chemical fertilizers and pesticides are more attractive, offering more immediate returns than organic farming².



Constraints that the technologies must meet

This is achieved partly through reducing losses and adoption of new technologies for enrichment of nutrient content in manure

The constraint to be met by organic agriculture includes:

- a. Quality in products
- b. Quality in work process
- c. Communication of the organic status to the consumers
- d. Minimization of the fossil energy sources
- e. Technology should be a tool to implement in a practical manner
- f. Investment must be justified by reduced costs in labor and neglected task
- g. Operating costs must be justified by returns and saved labor costs
- h. Energy efficient
- i. Uses recycled/ renewable resources if possible
- j. Low time and labor inputs
- k. Low weight, to avoid soil compaction, high porosity needed to support high root growth in plant, and aerobic animal waste degradation in free range
- l. Small size, to fit intensive agriculture plots.



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