

A case study of Cow based organic farming System adopted by the farmer of Vadal, Junagadh, Gujarat

P. V. Patel, A. M. Polara, G. R. Gohil*, **Dhyey D. Mavani****

Abstract:

There has been a rise in consumer's demand for safe and healthy food due to increasing concerns over the quality of food, contamination due to chemicals, serious health hazards and environmental issues. This increasing demand has given way to a new stream of agriculture, popularly known as Organic Agriculture. Since the use of huge quantities of chemical fertilizers in the Indian farming has been stopped since the Green Revolution, it has changed the structure of our land. Today, the fast-growing agricultural land is changing in the wasteland. And millions of crores of rupees are being spent on the chemical fertilizers. The use of chemical fertilizers in the fields is also adversely affecting crop yield. Organic farming is being promoted to solve all these problems. Under organic farming, farmers have to take more yields by saying the resources available to them. Use more and more organic fertilizers instead of chemical fertilizers. This paper highlights the practices of organic farming adopted by the farmer of Vadal, Dist. Junagadh, Gujarat for the production of various Agriculture and Horticultural crops exclusively by using farm made compost, vermi compost, Jivamrut cow urine etc. with higher productivity and better return.

Introduction:

Increasing population of India has started creating demographic pressure on agriculture sector to maintain food security. Hence maximizing crop yield to meet the growing demand for food grains is an important issue. However increase in crop yield through excessive use of pesticide and fertilizers, introduced during green revolution pose great threat to sustainability of agriculture productivity in the long run. Removal of crop residues and indiscriminate use of chemical fertilizers have severely affected soil health which is continuously deteriorating. To address the issue of maintaining crop yield through sustainable agricultural practices, the Government proposes to promote organic farming methods, combining modern technology with traditional farming practices like green manuring, biological pest control and weed management. A large number of terms are used as an alternative to organic farming viz. biological agriculture, ecological agriculture, bio-dynamic, organic-biological agriculture and natural agriculture.

According to the National Organic Standards Board of the US Department of Agriculture (USDA) the word 'Organic' has the following official definition (Lieberhardt, 2003): "An ecological production management system that promotes and enhances biodiversity,

biological cycles and soil biological activity. It is based on the minimal use of off-farm inputs and on

management practices that restore, maintain and enhance ecological harmony.”

Since ancient times Indian farming has revolved around cow and its products. Our farming experts of those times developed a way of cultivating farms that was completely in sync, with nature. Mother Earth was also generous with the then farmers as they gave back as much as they extracted from her. This changed after Indian independence. Indian government started promoting use of chemical fertilizers and Indian farmers gave away the traditional way of farming. Agriculture in India has always been organic even before the organic farming got its name. Organic farming in India received attention after launching of National Project on Organic Farming (NPOF) in 2004-05. Area under organic farming was 42.000 hectares during 2004-05 which had increased to 1.08 hectares by March 2010. Area under wild forest harvest collection was 3.40 million hectares. Thus total area under organic certification process by March, 2010 was 4.48 million hectares which was 25 fold increase in last 6 years. Organic farming is being promoted under National Project on Organic Farming (NPOF), National Horticulture Mission (NHM) and Rashtriya Krishi Vikas Yojana (RK VY). India produced around 3.88 million MT of certified organic products which includes edible products along with organic cotton fiber, garments, cosmetics, functional food products, body care products, etc. India exported 86 items in the year 2010-11 with the total volume of 69837 MT. the export realization indicated a growth of 33% (157.22 million US \$) over the previous year. Chief importers of Indian organic products are EU, US, Australia, Canada, Japan, Switzerland, South Africa and Middle East. India is on number 1 in terms of Number of Organic farmer worldwide, but lagging behind in terms of area under organic cultivation. As all we know chemical farming harms badly Our Natural Habitat, Eco-System, Bio Diversity, Soil and Aqua Life. If we analyze our food, we will not eat the food, because it became mixture of different Chemicals which harms our health.

It's time to take action and help farmer to go for organic farming and buy Organic food at bit higher price, by this we can protect our family from adverse effects on health.

Objectives 1. To study the practices of cow based agro-horticulture crop production.

2. To assess the significance of Organic farming over traditional farming.

Methodology

The paper tries to study the role of farmers in promotion of Organic farming in the state of Gujarat based on information collected through observation of various activities and personal

interaction with the farmer. Observation

During the visit to Shivam Agro-Farm located at village Kathrota, Vadal District Junagadh which is about 18 km from Junagadh it was observed that, Mr. Hiteshbhai Domadiya the owner of 3.25 hectare farming area has adopted cow based agriculture without using

chemical fertilizers and pesticides. Jeevamrut is a low cost organic fertilizer can be prepared easily by the farmers. It helps to Protect Crops - Farm from blue cow, and Pig/ Boar. This Animals Can't enter into farm because of jeevamrut Smell.

Preparation of Jeevamrut

For the preparation of Jeevamrut following procedure is adopted:

- a. Cow dung: 10 kg
- b. Cow Urine: 10 lit
- c. Grain floor: 1.0kg

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Pulse floor: 1.0 kg -

- e. Jaggery (Without Chemical) 1.0 kg
- f. Farm soil 1.0 kg

Preparation of Jeevamrut

Above ingredients are added in 200 lit of water in a barrel, allow it to ferment for 72 hours. Now the mixture is ready to use as bio fertilizer. To make bio pesticide. This mixture is filled in 8 different barrels and leaf extract prepared using 5 kg each leaves of Neem tree, Custard apple tree, bitter guard and other trees having bitter taste is added in the barrels. This bio-pesticide is sprayed over the growing crops or provided to each crop through drip unit to prevent damage from pests and blue cow due to unpleasant fragrance.

At this farm cultivation of Horticultural crops viz; Tomato, Brinjal, Water melon, papaya, cabbage, guavar and other seasonal horticultural crops are carried out using organic fertilizers Jeevamrut.

Entire crop is irrigated using drip irrigation so that, crops can be cultivated with efficient water management.

In order to maintain the humidity in the soil mulching technique is applied on the each furrow using by products of agro-horticultural crops.

Tomato crop

Advantages of Organic Farming:

Farmers can reduce their production costs because they do not need to buy expensive chemicals and fertilizers. They improve plant growth and physiological activities of plants. In the long term, organic farms save energy and protect the environment. Biological research into soil and soil organisms has proven beneficial to organic farming. Varieties of bacteria and fungi break down chemicals, plant matter and animal waste into productive

soil nutrients. In turn, they produce benefits of healthier yields and more productive soil for future crops. :

This farm adopt drip irrigation therefore, nutrient loss is minimized due to a localized application and reduced leaching. Water application efficiency is high and field leveling is not necessary.

Jeevamrut provides about 16 types of micronutrients help in better plant growth,

Mulching used in crop production gives 15-20% higher production,

The quality of vegetables produced through organic farming is better, fetched 15-20% higher return in the market.

Weeds are controlled therefore the labor cost is reduced,

e Crops can withstand adverse environmental conditions and grow better.

e No need to buy chemical pesticides if bio-pesticide is prepared using Jeevamrut added with the leaves of bitter guard. Custard apple, neem tree, reduces production cost

Discussion:

Relatively high success of organic farming in some countries are due to the high awareness of the health problems caused by the consumption of contaminated food products, the ill effects of environment degradation, appropriate supports by the government and organizations like the European Union and International Federation of Organic Agriculture Movements (IFOAM). The conventional farming had helped India not only to produce enough food for own consumption but also generated surpluses for exports. However, the increasing population and income will lead to further increases in demand for food and also for raw materials for industry. The modern system of farming, it is increasingly felt, is becoming unsustainable as evidenced by declining crop productivities, damage to environment, chemical contaminations etc. The necessity of having an alternative agriculture method which can function in a friendly ecosystem while sustaining and increasing the crop productivity is realized now. Organic farming is recognized as the best known alternative to the conventional agriculture. The "major weaknesses of organic agriculture in the country are absence of linkages between the farmers and markets and absence of financial support from the governments. India has the potential to become a major organic producing country given the international demand for our farm products, different agro-climatic regions for the cultivation of a number of crops, the size of the domestic market and above all the long tradition of

environment friendly farming and living.

Production: During our case study it was found that, the farmer is very happy by crop production through cow based organic farming and obtaining 20-30 % higher production as compared to previous inorganic farming using chemical fertilizers and pesticides. There is great demand of his farm produce owing to better quality in the market.

Scope for Further Research

Organic farming is a new concept and most of the studies have focused on the environmental aspect of Organic farm practices. Very little research has been done to study the economics of Organic farming. Organic farming can be studied as a strong link that associates environment with economy. There is urgent need to transfer the available technology of low cost organic farming through the systematic approaches of extension to create awareness among the farmer communities to adopt organic farming and produce healthy food in a eco-friendly manner

and enhance their income.

References

1. Annonymus.2001.Report of Working Group on Organic Farming and Biodynamic Farming for the 10th Five-Year Plan.Planning Commission, New Delhi, September
2. Chhonkar, P.K. 2003.Organic farming science and belief. Journal of the Indian Society of Soil Science. 51 (4) : 365-377.
3. FAO 1999. Organic Agriculture, Food and Agriculture Organization of the United Nations, Rome.
4. Kumara Charyulu, D. andSubhoBiswas, 2010. Efficiency of organic input units under NPOF scheme in India. Working paper (April, 2010), IIM, Ahmedabad.
5. Roberts, K.J., Warnken, P.F. and Schnuberger, K.C. 1979. The economics of organic . crop production in the western Corn Belt..