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AGRICULTURE DEVELOPMENT AND ITS ENVIRONMENTAL EFFECT



Ashok Kumar Yadav
Khatoti Kalan, Mahindergarh.

INTRODUCTION:

The Agriculture is of two types, namely, Traditional and Modern or Intensive farming.

1. Traditional Agriculture:

It is more or less eco-friendly. It usually makes use of the domesticated animals and their energy. It also makes use of the excreta of animal and decaying leaves of plants as manure. About 50% of the world population is still dependant upon traditional agriculture. But being in this case yield is low. There is a negative aspect of some of the traditional methods being practiced in North East, where "Jhum" or shifting cultivation is being practiced. As described earlier in this type agriculture, large

extant of deforestation takes place. The land is left baran, after cultivation for as few years, when it (land) becomes poor in Nutrients. This land now becomes prone to soil erosion.

2. Modern Agriculture or Intensive Farming:

This is the type agriculture of farming in which High Yielded Varieties (HYV) seeds are used to increase the per acre yield. In this type of farming the modern techniques like Tractors, harvesters, tillers and other heavy machines are use. In addition to this chemical fertilizers and pesticides are frequently used. This type of farming also utilizes large quantities of water from canal irrigation or tube wells (Ground Water). This Intensive Farming has definitely tripled the agriculture produce of the food grains in the world, and has resulted in the Green Revolution. This green revolution has, to some extent, solved the world food problem. In our country, in India, also green revolution has been quite successful with Punjab and Haryana being the leaders. It is not all bright, but there is also the dark side of this Intensive Farming. This is as follow.

a) Problem of Water Logging:

The excessive canal water irrigation leads to water logging. The excess water that is not utilized by the plants goes on accumulating and raises the water level. The air spaces around the roots get filled up with water. They can not breathe and the plant dies.



Some areas of Punjab and Haryana are facing the problem of water logging. Setting of tube wells and planting of Eucalyptus and popular plants along the fields and canals is recommended. These plants are called water pumps, because they utilize huge quantities of water reduce the water and logging. The canals should also brick lined to prevent the seepage of water from canal into the neighboring land.

b) Problem of Salinity is also related to the water logging and is accelerated due to excessive irrigation. The salts like calcium chloride, magnesium chloride and sodium sulphate go on accumulating and make the soil saline. More and more salts come up from lower layers and accumulate in the upper layer. When water gets evaporated, a white wash layer of salt is left. The problem of salinity is increasing day by day. In India it has reached to 7 lakh hectare. Throughout the world about 1/3 of the agriculture land has become saline.

c) Impacts of High Yielding Varieties (HYV) HYV seeds are produced by hybridization i.e. crossing of two different varieties to plants of combine the better qualities of two species. This type of crops consume more water and need large quantities of chemical fertilizers, insecticide and pesticide. Because, of the high yields farmers are tempted to bring maximum land available with them under cultivation.

These crops are infact monocultures and are grown repeatedly. This leads to over- exploitation of the land. The land becomes poor in minerals. The crops are also prone to infection and infestation by the pests. One attack may finish whole or large part of the crops. Previously, the crops were sown in rotation that helped in the regaining of minerals by the land through natural cycles.

d) The Effect or Impacts of Chemical Fertilizers As has been said above that the HYV of crops require large of quantities fertilizers to grow faster. This raise the cost of agriculture. Excessive use of nitrogen is also causing problems. No doubt the plants grow faster, but they weak and may fall down. The crops are attacked by insect pests. To save the crops from pests the pesticide is used, that further increase the cost of agriculture. The use of chemical fertilizers and pesticides have polluting effect on Environment. The excess amount of Nitrate pollutes the ground water and lakes or pond water also. The use of polluted ground water causes Blue Bay Syndrome in many countries of the world like India, Netherland, England, Denmark, France and Germany. This disease is also called Methemoglobinemia.

In the water bodies like lakes, rivers, ponds, the farm run off increase the level they of Nitrogen. This leads to excessive growth of Algae in the water bodies. Their death and decay pollutes the water and the condition is called, Eutrophy, that ultimate leads to the death of the lakes.

The other important fact related to the excessive use of chemical Fertilizers is that they contain only specific element (Like NPK- Nitrogen phosphorus and Potassium) but the crops require iron (Fe), Zinc (Zn), Sulphur (S) and manganese (Mn). The quantities of these elements continuously decrease in the soil and leads to the formation of poor soil. That is the reason of low yield in the fields even when formers use the same seeds (HYV) and same amount of fertilizers per acre. The farmers are ignorant about this fact.

e) The Effect of Pesticides and Insecticides. To retain the food produced or being produced by the green revolution, it is very necessary to protect it from the pests and insect pests. This work of protection is done by the use of pesticides and insecticides. Generally they are Non- Biodegradable, and therefore go on increasing in the body of the organism by Biomagnifications. Non- Biodegradable are those substance that cannot be broken into their components (Elements) for recycling in Nature. And Biomagnifications means that at every trophic level their amount goes on increasing due to

accumulation.

There are some friendly organism (bacteria and insects) also in the field. They are very useful and may benefit the crop plants by killing the pests. But, when the pesticides or insecticide is sprayed that kills not only the harmful, but also the useful organisms.

The intensive use of pesticides have made the pests resistant to the pesticides. They have becomes resistant to most of the chemicals used as pesticides. Therefore, now they are not killed even by very powerful insecticides. For example, mosquitoes, nematodes, American Ball Worm have become resistant to DDT. Therefore, these pests have now acquired the status of Super Pest.

These Pesticides and insecticides have also reached in the body of human beings. Since, pesticides contain mercury, lead, chlorine, arsenic, borone, lead, etc in there compounds. These chemicals go on accumulating in the human body. They reach the human body without knowing about their ill effect. They weaken our muscles and can lead to paralysis. These pesticides also reach the human infants through the milk of their mother, which is otherwise considered as purest form of food or say "Amrit".

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