

Environmental impact of Pesticides

Created: Tuesday, 28 June 2011 09:33 | Published: Tuesday, 28 June 2011 09:33 | Written by [Super User](#) | [Print](#)

Pesticides

What is a Pest?

Apest is any organism that damages the crops. It can be an animal, plant or a microbe. So pest controls are very important for the farmers to save their plants.

Types of Pesticides

- [Chemical](#) (e.g. pesticides)
- [Biological](#) (e.g. predators)
- [Cultural](#) (e.g. weeding or a scarecrow).

Chemicals pesticide:

Four main types are there. They are

- Herbicides - anti-plant chemicals
- Insecticides - anti-insect chemicals
- Fungicides - ant -fungal chemicals
- Bactericides - anti-bacterial chemicals



Pesticides

Role of Pesticides

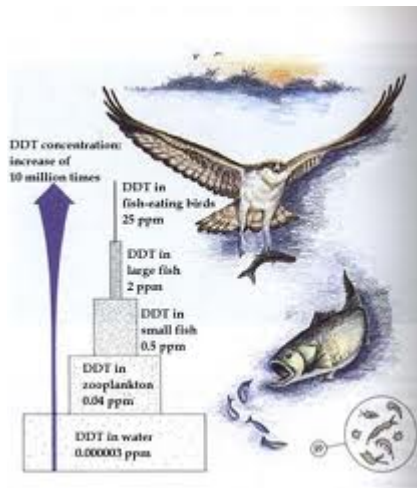
Using pesticides must be very effective and then only it will be beneficial to farmers. More over the pesticide must affect the pest only and not the plant. Pesticides must make the pest inactive, reduce their population and prevent reproduction. Pesticides play an important role in the intensive farming.

Many varieties of wheat crops are treated with 18 different pesticides to combat a variety of weeds, fungi and insects. Some pest carries human disease causing genes. So if we reduce their reproduction and population, we can save the life of millions of people. [Persistence](#) and [bioaccumulation](#) are the main problems among many, caused by the widespread use of pesticides.

Effect of DDT

The ill effect of the pesticides can be illustrated by DDT. DDT is a chemical named Dichloro Diphenyl Trichloroethane. It is an insecticide which is used against the malaria mosquito. It was tried around 1955 and eradication of malaria has been proved then.

The birds which feed on the DDT applied plants accumulated DDT in their bodies. This led to the dramatic fall in their population and suddenly the bird population decreased a lot. One major example of this was the drastic impact on the American Bald Eagle population. As a top predator, it fell victim to bioaccumulation of DDT. The DDT accumulated in their body affecting its calcium metabolism and causing their egg shells to be too thin and fragile.



Birds population Vs DDT

Once the DDT was banned in developed countries in 1970 automatically the bird populations have fully recovered. So farmers started using alternative pesticides. But many are not as effective, so the DDT usage also continued in a more limited way.



Pesticides available in the market

Persistence:

The added pesticides remain active in the environment. It may vary for different pesticides. How long a pesticide remains active in the environment is termed as 'Persistence'.

Two types of chemicals:

Biodegradable: Some chemicals are broken down by decomposers in the soil. These are not the persistent pesticides.

Non-biodegradable: Some chemicals cannot be broken down by microbes and remain for many years. These are the persistent pesticides. DDT like pesticides were persistent and damaged the environment a lot.

But nowadays biodegradable insecticides such as carbamates and pyrethroids are used in place of the persistent ones. This saves our environment a lot!

Advantages and Disadvantages

Advantages:

- Cheap
- Protection of plants
- Protection of environment

Disadvantages:

- Ground water contamination
- Human health effects



Sign board kept in the pesticide use field

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Reference Links:

- <http://en.wikipedia.org/wiki/Pesticide>
- http://cibrc.nic.in/list_pest_bann.htm
- http://wiki.answers.com/Q/What_are_the_advantages_and_disadvantages_of_pesticides

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