Pest Control | Ecology & Environment | Biology | Fuse School.

Pesticides can be sprayed all over a field using industrial machinery like tractors or planes, or in specific areas by humans. The person spraying crops with pesticides needs to wear protective clothing because pesticides can be toxic to other organisms not just the organisms they aim to control.

DDT Insecticide

One example of this is DDT which was used as an insecticide in the mid-20th century to control mosquitoes which spread malaria – a potentially fatal disease amongst humans. However, DDT was found to accumulate in food chains also known as bioaccumulation. The molecules of DDT did not break down but instead were stored in the bodies of organisms and passed on when those organisms were eaten.
The DDT became more concentrated in the higher levels of the food chain.

Effects of DDT

The effect on birds of prey was catastrophic as it caused them to lay eggs with thin shells that broke easily when the birds incubated them. This led to a fall in the birth rate of birds of prey and a massive decrease in their populations. The use of DDT was eventually banned as a result. Through the process of evolution and natural selection some pests become resistant to pesticides and they end up surviving and reproducing. The overuse of pesticides has led to an increase in number of those organisms which means that some pesticides are now useless.

Biological Control

Apart from using pesticides which is also known as chemical control, farmers can use biological control mechanisms. Biological control is the use of a natural predator of the organism you wish to control. For example, aphids or green flies are herbivores that feed on many human crops. Aphids are eaten by lady birds; ladybirds could be added to an environment to control the number of aphid pests. Sometimes this method of control works well.

However, the introduction of a new species to an environment can have unexpected effects. One example of this the Hawaiian cane toad. It was introduced in Australia to control the population of the cane beetle, a pest that damaged sugarcane crops. However, the Hawaiian cane toad had little effect on the cane beetle population, instead cane toads reproduced rapidly and spread across Australia as they had no natural predators. It is now considered a pest species itself and has been blamed for the extinction of some endemic species.