

Problems Caused by Pesticides

Pesticides and fertilizers are both artificial chemicals which are spread onto farmland in massive quantities every year. The damaging effects of this haven't always been spotted straight away.

Pesticides disturb food chains

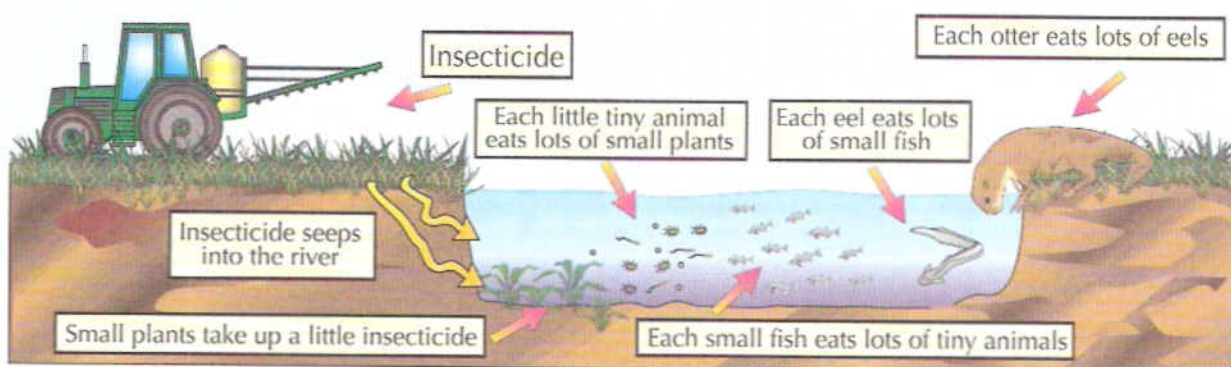
- 1) Pesticides are sprayed onto most crops to kill the various insects that can damage them.
- 2) Unfortunately, they also kill lots of harmless insects such as bees and beetles.
- 3) This can cause a shortage of food for many insect-eating birds.
- 4) Pests that are not killed by pesticides can reproduce, creating a population of superbugs immune to the pesticide's effects.
- 5) Pesticides tend to be poisonous and there's always the danger of the poison passing on to other animals (as well as humans).



This is well illustrated by the case of otters which were almost wiped out over much of crop-dominated Southern England by a pesticide called DDT in the early 1960s.

The diagram shows the food chain which ends with the otter.

DDT is not excreted so it accumulates along the food chain.
The otter ends up with all the DDT collected by all the other animals.



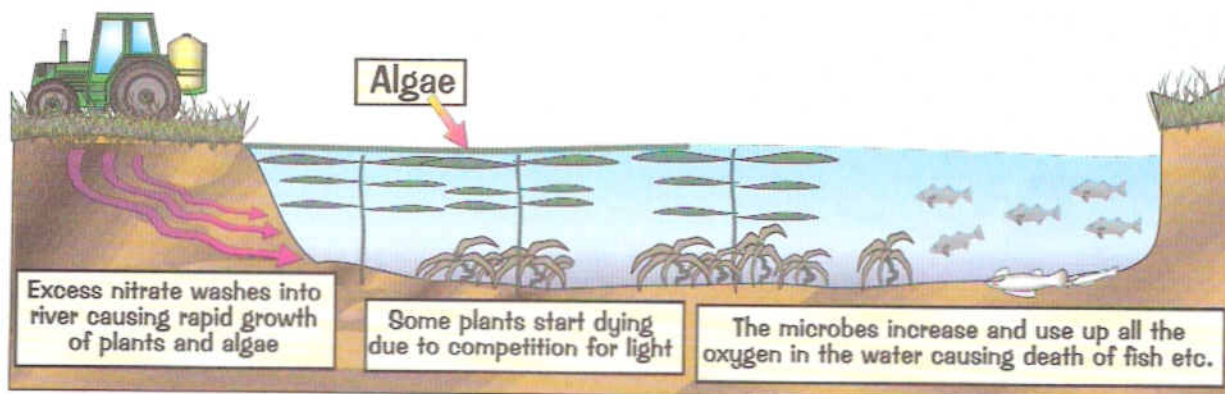
Pesticides are a perfect example of the problems of farming...

Here we have the age-old double-edged sword. The use of pesticides enables farmers to grow better food, more quickly and efficiently, and therefore more cheaply. However, the pesticides have negative effects as well — like DDT on the poor old otter. As usual you need to learn both sides of the argument. Learn all the good and bad points about pesticides, then cover the page and see what you can remember.

Problems Caused by Fertilizers

Fertilizers damage lakes and rivers — eutrophication

- 1) Fertilizers which contain nitrates are essential to modern farming.
- 2) Without them crops wouldn't grow nearly so well, and food yields would be down.
- 3) This is because crops take nitrates out of the soil and these nitrates need to be replaced.
- 4) The problems start if some of the nitrate-rich fertilizer finds its way into rivers and streams.
- 5) This happens quite easily if too much fertilizer is applied, especially if it rains soon afterwards.
- 6) The result is Eutrophication, which basically means "too much of a good thing." (Raw sewage pumped into rivers can cause the same problem.)



As the picture shows, too many nitrates in the water cause a sequence of "mega-growth," "mega-death" and "mega-decay," involving most of the plant and animal life in the water.

Eutrophication is when you have too many nitrates...

...and everything grows too much and too fast. Make sure you distinguish between pesticides (which kill bugs and weeds) and fertilizers (which supply nutrients to the plants). They can both cause harm but for totally different reasons.