

You should be aware by now that dealing with chemical interventions in the environment is a very tricky business. The effects can be devastating to the environment and difficult to counteract. Sometimes effects are not immediately seen.

1. Many chemicals are used regularly in gardens, market gardens and farms. Chemicals may be applied in different forms that have different properties such as solubility in water. Research and complete the table below with the structure and solubility of some common materials.

substance	chemical formula of main active ingredient	release of active ingredient (slow or immediate)	solubility in water	potential problems with its use
superphosphate fertiliser				
blood and bone				
dynamic lifter				
urea				
ammonium phosphate				
DDT				
dieldrin				

2. The dilemma examined the introduction of fertilisers, DDT and human waste to the environment.
- For each substance, write a paragraph to describe how its chemical constituents enter wetlands, and effects that they have on wetlands.

**Fertiliser is added to plants.**

How can chemicals from fertilisers enter wetlands?

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What are the results of this?

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**DDT is sprayed onto crops.**

How does DDT enter wetlands?

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What are the results of this?

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**Human waste is released into a river.**

What changes may occur?

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What are the results of these changes?

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3. A company disposing of sewage released some of its waste illegally into a local river. It did not seem to cause any problem at first. They decided to release some more since they had not been detected the first time. An algal bloom was noticeable in the river a short time later. What factors influence the occurrence and severity of an algal bloom?

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4. In question one the solubility of various chemicals was compared. Ammonium phosphate fertiliser has a very different solubility compared with DDT and therefore has different effects in the environment. Which chemical has the longer lasting effect and why? Make reference to their solubilities in your answer.

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5. How can scientists work with the community to prevent problems caused by chemicals entering the environment?

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