

## Controlling weeds and plant diseases

1. In agriculture, the control of weeds, diseases and pests is essential to obtain high yields. **Sound farm practices can control all three.** **These** include the choice of clean seed and the growing of crop varieties which are resistant to disease. **They** also include careful cultivation, both pre-sowing and post-sowing, and the use of chemicals.
2. Weeds reduce crop yields because they compete with crops for water, soil nutrients and light. **They also make harvesting difficult.** Most weeds grow quickly and spread far, and are difficult to eliminate. One way of eradicating many persistent weeds is to plough up the roots and underground parts of the plants. Then the soil is cultivated lightly or rotavated on one or more occasions after the first ploughing.
3. Weeds are also killed using chemicals called herbicides or weed-killers. There are **two basic types**: selective and non-selective. The **former** remove certain weeds from certain crops. For rice it is possible to spray the herbicide 2,4-D<sup>1</sup> or MCPA<sup>2</sup> over the whole crop at low concentrations. **The rice will be unaffected, but many of the rice weeds will die.** Non-selective weed-killers kill all vegetation and must be used extremely carefully, because they will eliminate all plants, including the crop itself. **They** are usually used before sowing or before crop emergence.
4. Plant diseases are caused by organisms which use the crop plant as a “host”. **These** are mainly micro-organisms, e.g. fungi, bacteria and viruses. These parasitic micro-organisms feed on the nutrients in the tissue cells of the plants. **They often kill host tissues, and kill or damage the plant.** Micro-organisms are reproduced and spread by **minute** bodies such as spores, fungi and bacteria. Wind, water, diseased plants, cuttings and tubers, animals, people and insects also **disseminate** disease.
5. It is very difficult to kill fungi and bacteria, or to make a virus which is inside the host plant inactive. **Farmers in the past often had to destroy infected crops.** **However**, the development of disease-resistant plant varieties has completely changed disease control methods. Therefore, the control of plant diseases has increasingly become a matter of prevention instead of treatment.
6. Fungicides are often used to control fungi which attack the **aerial** parts of a crop, and are sprayed or dusted onto the plant surfaces. It is important to apply **these products** before the plant is seriously damaged. **Sometimes spray and dust is applied to prevent disease.** In any case, crops should be examined frequently for signs of disease.
7. **Soil-borne** diseases are much more difficult to control, but there are various ways of treating the soil. **Solarisation uses the sun’s heat to kill harmful organisms.** The soil is covered with a clear polythene sheet and the edges are sealed. After 6 weeks the sheet is removed and the soil can be used for crops.

<sup>1</sup> 2,4-D (2,4-dichlorophenoxy) is a systemic phenoxy herbicide developed in the 1940s and still in use today.

<sup>2</sup> MCPA (2-methyl-4-chlorophenoxyacetic acid) is a powerful, selective, widely used phenoxy herbicide.

**Exercise A:** Can you explain the meaning of the words in **bold type**?

**Exercise B:** Fill the gaps with suitable words from the text.

1. A parasite..... a host plant or animal.
2. Crops can be damaged by ..... and .....
3. Farmers use herbicides to.....
4. Some insects are beneficial to crops, but others are ..... and cause damage.
5. The leaves and fruit are ..... parts of the plant, unlike the roots.
6. Viruses and bacteria are ..... and therefore invisible to the naked eye.
7. .... is a way of treating soil-borne diseases.
8. Selective weed-killers do not ..... the crop plant.
9. Farmers can apply fungicides by..... or .....them onto plants.
10. Oranges and cherries grow in Puglia. The ..... are citrus fruits.

**Exercise C:** Answer the questions with complete sentences (i.e. subject + verb + object)

1. Why is it important for farmers to control weeds, diseases and pests?
2. What examples of “sound” farm practices are given?
3. Why do weeds have a negative effect on crop yields?
4. How can resistant weeds be eliminated?
5. What are the basic types of herbicide?
6. What is the danger of using a non-selective weed-killer?
7. What are the causes of plant diseases?
8. How are diseases spread?
9. What has revolutionised methods of disease control?
10. How does soil solarisation work?

**Exercise D:** What are the greatest problems facing farmers in your country? Write a paragraph.



## **Exercise E:** Rephrasing

Rewrite the following using other words and constructions from the text where possible.

The aim is to use a smaller number of words.

1. It can be difficult to **get rid of** weeds.
2. Weeds **that last a long time** are ploughed up.
3. Chemicals **that remove certain weeds from certain crops** can be used on rice.
4. Organisms **that are microscopic in size** can use the plant as a “host”.
5. Plants diseases are spread in **a lot of** different ways.
6. Solarisation uses a chemical **that easily changes into a gas or a vapour**.
7. **Special chemical products** are used to control infections caused by fungi.
8. Farmers find it difficult to control insects **that damage their crops**.
9. Diseases **that are contained in the soil** are difficult to treat.
10. Disease-resistant plants have changed **the ways in which diseases can be controlled**.