

# Weeds – teacher information sheet

## Basic Crop Protection

Crop protection deals with the pests and weeds that cause crop losses and how they are managed to minimise these losses. One of the main agents that causes damage to crops are weeds.

## What are weeds?

A weed is a plant that is growing in the wrong place.

For example, volunteer tomatoes or beans become weeds if they grow in ground that has been planted with a crop of sweetpotatoes. Weeds can interfere with cropping or grazing activities; block waterways; or compete for nutrients, water, space and light, resulting in low crop yields. Some examples of introduced weeds of economic importance to PNG and Pacific island countries are shown below, and some of these are also widespread in other parts of the world.



Example of weeds. (Seta-Waken, Malie, Utama & Palaniappan, 2016, p. 41).

## The effects of weeds on crops

**Harmful effects of weeds:** Weeds directly compete with crops for light, space, nutrients and water, causing reduced crop yields. Some weeds can also act as hosts for insect pests and disease agents.

**Beneficial effects of weeds:** However, in abandoned land, weeds can also act as cover crops, helping to reduce soil erosion and adding organic matter to the soil when they decompose. Some may also act as a source of food and may have medicinal properties.

## Ways to control weeds

### Physical control

- hand weeding
- hoeing and cultivation
- mowing and slashing.



Physical control

### Cultural control

- mulching
- cover cropping, especially using leguminous crops; cover crops also help to improve soil fertility.



Cultural control

Example of physical & cultural control. (Seta-Waken, Malie, Utama & Palaniappan, 2016, p. 42).

### Chemical control

- Chemicals that control weeds are called herbicides.
- Herbicides are expensive and can be dangerous to use without proper equipment and training.
- Some herbicides that kill the plant by contact with the plant surface are called contact herbicides.
- Others can be applied to one part of the plant and are then absorbed and distributed through the plant's vascular system to the whole plant—these (e.g. glyphosate or Roundup®) are called translocated herbicides. However, care must be taken as these can also kill crop plants.
- Manufacturers give comprehensive instructions on the label of the containers on how and when a particular herbicide can be applied, as well as its potential danger to humans, animals and crops.
- Although chemicals do result in a quick kill of weeds, they may only be economic if used in large plantation crops such as cocoa, coffee and oil palm.

### Information taken from

Seta-Waken P., Malie R., Utama P. and Palaniappan G. 2016. Introduction to basic crop production, post-harvest and financial management practices: a training manual for smallholder vegetable farmers in western Pacific island nations (ed. by C.J. Birch and B.E. Chambers). Monograph Number 176 Australian Centre for International Agricultural Research: Canberra, ACT. <http://aciar.gov.au/node/25047>

*This resource has been developed as part of the ACIAR-funded project Improving opportunities for economic development for women smallholders in rural Papua New Guinea (ASEM/2014/095).*



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