



DEPARTMENT: AGRICULTURE

# Managing weeds, pests and diseases



*The most economic and reliable way of dealing with weeds, pests and diseases is to anticipate and avoid them*

## Keep in mind that

- All pesticides are potentially dangerous to man, animals and the environment if not applied according to the instructions on the label and handled with care.
- Normal cultivation practices can often be adapted to minimise pest damage. A crop which is growing well is less prone to attacks by pests and diseases and can often resist these attacks better than weaker crops.

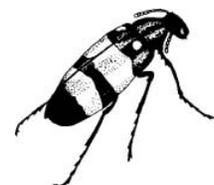


The following guidelines should help you manage pests in vegetable crops.

## Cultivar selection

- Select a cultivar which is known to have a high yield and to produce a crop of high quality under local growing conditions.
- Consider a cultivar with resistance to or acceptable tolerance of certain diseases or nematodes.
- A cultivar which is adapted to local conditions should yield healthy plants.
- Stay informed about the latest cultivar developments concerning disease resistance or tolerance.

## Field selection



- It is easier to control pests on land that is well suited to the crop.
- The soil should have a sufficient depth, a uniform texture and good drainage.
- Make sure the soil is free of nematodes. Fumigate if necessary.
- The water-holding capacity of the soil should be suitable for the crop.
- Do a soil analysis to determine nutrient deficiencies and salinity. Rectify these before planting.
- Find out which pesticides have been used on the land previously. Take the waiting period of the product into account and make sure that it is safe to plant.
- Consider the history of the land, such as the occurrence of weeds, pests and diseases, and apply countermeasures (management practices).

## Land preparation

- Well-prepared fields and seedbeds encourage healthy plant growth.
- Break up compacted soil layers before planting.
- Do not till soil which is too wet, because this could cause compaction.
- Level the soil.
- Deep ploughing destroys the seeds of various weeds.



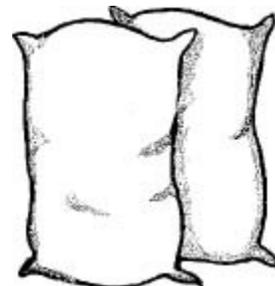
## Planting time

Some weeds, insects and diseases are more prevalent during certain times of the year when conditions favour their development. Manipulating planting dates can reduce the incidence of pests and diseases. Keep in mind, however, that planting dates for crops usually allow for optimum growth during specific weather conditions.



## Fertilisation

• A well-balanced fertilisation programme will contribute to vigorous, healthy growth and high yields of good quality. Nutrient deficiencies and imbalances could cause poor growth, making the plants more prone to attacks by pests.



- Have the soil analysed and apply fertiliser as recommended.

## Irrigation

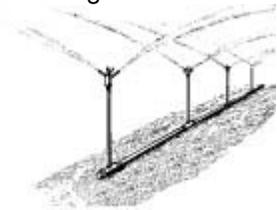
- Irrigation scheduling is very important. An over or undersupply of water causes poor growth and resistance to pests and diseases.

- Apply sprinkler irrigation from planting to the seedling stage and then switch to furrow irrigation until harvest.

- When using sprinklers, do not apply more water than can infiltrate the soil. Avoid runoff and the formation of surface puddles.

- Soil splashing onto leaves during sprinkler irrigation can spread diseases.

- Sprinkler irrigation on older plants may increase disease problems; furrow irrigation is therefore preferred.



## Pesticides

- Pesticides, when applied properly, provide convenient and economical protection against pest and diseases.

- Careless and excessive use, however, could result in poor control and crop damage and pose a threat to human health and the environment.

- Use pesticides only when necessary.

- The choice of a product depends on its efficacy, the degree of control required and the economic implications.

- Repeated application of the same pesticide can cause pests to become resistant.

- Always read the label before applying any pesticide and follow the instructions.



## Sanitation

- Dispose of residual plant material as soon as possible. This may be done by chopping the plants and deep ploughing the residue or even burning it.

- Adequate control of annual weeds, especially before seeding, will reduce weed competition and crop pests and diseases.

- To prevent the spread of nematodes it is important not to introduce contaminated soil into your land via equipment, transplants, manure or runoff.

- Use only disease-free seed for planting.

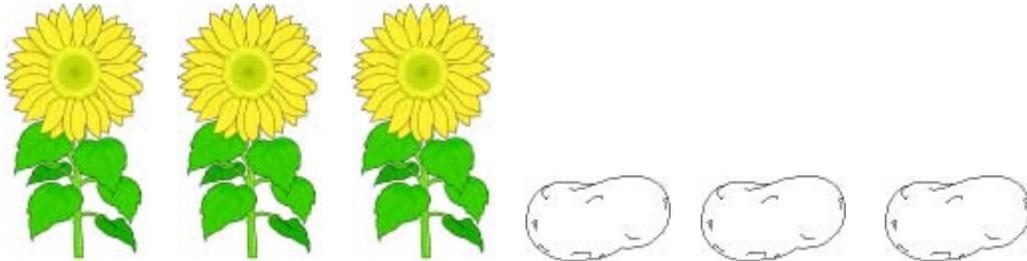
- Remove and destroy infested plant material whenever possible.

## Rotation

- The populations of certain pests and diseases can be limited by planting lands with crops which do not promote their development.



- Rotating crops restricts the use of a wider range of herbicides, e.g. you cannot plant broad-leaf crops such as sunflower, beans, potatoes, etc. after using atrazine on maize.



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