



agriculture & rural development

Department:

Agriculture and Rural Development
North West Provincial Government
REPUBLIC OF SOUTH AFRICA

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DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT

NORTH WEST PROVINCE

DIRECTORATE: AGRICULTURAL DEVELOPMENT SERVICES



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SUB-DIRECTORATE: AGRICULTURAL RESEARCH SERVICES

Pests management in vegetables

22 September 2022
Broderstroom



Introduction

Various diseases and pests attack vegetables, and this can lead to serious economic loss.

Generally speaking, pest management strategies, chemical and mechanical control of pests and diseases can be used for control.



1. Beet armyworm *Spodoptera exigua*

➤ Symptoms

Singular, or closely grouped circular to irregularly shaped holes in foliage; heavy feeding by young larvae leads to skeletonized leaves; shallow, dry wounds on fruit.

young larvae are pale green to yellow in color while older larvae are generally darker green with a dark and light line running along the side of their body and a pink or yellow underside.

Management

Organic methods of controlling the beet armyworm include biological control by natural enemies which parasitize the larvae and the application of *Bacillus thuringiensis*.

chemicals control is also recommended.





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2.Cabbage aphid *Brevicoryne brassicaea*

➤ Symptoms

- Large populations can cause stunted growth or even plant death; insects may be visible on the plant leaves and are small, grey-green in color and soft bodied and are covered with a white waxy coating; prefer to feed deep down in cabbage head and may be obscured by the leaves.
- Cabbage aphids feed only on cruciferous plants but may survive on related weed species.

➤ Management

- If aphid population is limited to just a few leaves or shoots then the infestation can be pruned out to provide control;
- check transplants for aphids before planting;
- use tolerant varieties if available; sturdy plants can be sprayed with a strong jet of water to knock aphids from leaves.
- Insecticides are generally only required to treat aphids if the infestation is very high - plants generally tolerate low and medium level infestation; insecticidal soaps or oils such as neem or canola oil are usually the best method of control; always check the labels of the products.



2.Cabbage aphid *Brevicoryne brassicaea*



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3.Cabbage looper *Trichoplusiani*

➤Symptoms

- Large or small holes in leaves; damage often extensive; caterpillars are pale green with a white lines running down either side of their body.
- Caterpillars are easily distinguished by the way they arch their body when moving;
- Cabbage looper can be identified by their characteristic "looping" movement in which they arch their body and bring the back portion of the body forward to meet the front.

➤Management

- Looper populations are usually held in check by natural enemies;
- if they do become problematic larvae can be hand-picked from the plants; biological controls such as spraying with *Bacillus thuringiensis* can be effective at controlling looper numbers.
- Application of appropriate insecticide also controls looper populations; selective insecticides help to protect populations of natural enemies on crop.





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4. Diamondback moth *Plutella xylostella*

➤ Symptoms

- Young larvae feed between upper and lower leaf surface and may be visible when they emerge from small holes on the underside of the leaf; older larvae leave large, irregularly shaped shotholes on leaf undersides, may leave the upper surface intact; larvae may drop from the plant on silk threads if the leaf is disturbed; larvae are small (1 cm/0.3 in) and tapered at both ends.
- Larvae have two prolegs at the rear end that are arranged in a distinctive V-shape. Larvae take between 10 and 14 days to mature and spin a loose, gauze-like cocoon on leaves or stems to pupate.

➤ Management

- Larvae can be controlled organically by applications of *Bacillus thurengiensis*.
- Application of appropriate chemical insecticide is only necessary if larvae are damaging the growing tips of the plants



4. Diamondback moth *Plutella xylostella*



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5. The tomato leaf miner, *Tuta absoluta*

Symptoms

- The insect usually reduces the quality and yield of the crop.
- The primary site of damage is the leaves.
- The larvae feed on the mesophyll of the leaf, creating tunnels which appear as clear patches that are often filled with frass (excrement).
- These patches turn necrotic when the larvae exits to pupate. With high populations,
- Entire leaves and stems can be mined and die off. Young plants can be destroyed. Older plants can be more tolerant although yield losses of 80-100% can occur.
- Fruit is also attacked as the larvae grows and moves from the leaves to the fruit. Although the insect can enter the fruit at any point, entry at the calyx is more common.

Management

- Effective and sustainable control depends on the integration of cultural, chemical and biological control options i.e. Inspect the crop on a regular basis for any damage.





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