

## Integrated Management of Scales in Avocado

### KALRO E-mimea Plant Clinic

#### KALRO/NAVCDP Factsheet No. 083/2024

		
<p>Healthy avocado fruit_ Source: <i>L.Wasilwa KALRO</i></p>	<p>White woolly egg secretion from adult female scales on avocado leaf Source: <i>Feed the Future Mboga na Matunda (2019) - Tanzania</i></p>	<p>Adult female scales feed and breed on avocado leaf Source: <i>Feed the Future Mboga na Matunda (2019) - Tanzania</i></p>

#### Description

Scales are small, stationary greenish brown insects occasionally found sucking sap from avocado leaves, shoots, stems and fruits. A female lays 200-300 eggs, protected by a white, woolly secretion from beneath her body. There are two types of scales, armored scales (the most common in avocado orchards) and soft scales. Armored scales are characterized by a distinct, hard, separable shell while soft scales have a delicate body not protected by a shell and often produce honey dew. The pest is reported to cause losses of up to 90%.

### Damage/identification

- ❖ Presence of small, stationary, shell-like brownish green insects on leaf stems or fruit surfaces
- ❖ The shells are either flat and irregular or pear-shaped, tough and white or dirty white
- ❖ Presence of white woolly egg secretions produced by the scale insects as they feed
- ❖ A severe infestation forms a continuous crust over the underside of leaves
- ❖ Presence of honey dew in association with sooty mold
- ❖ Withering, discoloration, malformation, leaf and fruit drop, and retarded growth of affected plants

### Management

The following management options are recommended:

#### Cultural practices

1. Inspect seedlings for scales; start-off seedlings should be free from scales
2. Remove heavily infested plants and prune out heavily infested branches and burn
3. Weed alternative hosts that carry the pest from season to season
4. Avoid over applying fertilizer especially with nitrogen, as this favours and encourages the development and reproduction of scales

#### Biological control

1. Ladybird beetle feeds on armored scale insects. It lays its eggs under the scale insect in small groups of 1 - 5 eggs.
2. Scales are preyed upon by small parasitic wasps and many predators, including certain bugs, lacewings, and predatory mites. Ant control, habitat manipulation, and pesticide management are the key conservation strategies that can be practised to maintain natural enemy populations.

#### Chemical control

1. Spray infested crops with pesticides such as Diazinon-based products e.g Agrozinon 60EC or Dizon 60EC etc. Strictly adhere to manufacturers' recommendations.

**Note:** *Agro-chemicals should be used in consultation with professional practitioners and considering existing cautionary/safety measures, particularly the manufacturer's instructions.*

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**Disclaimer:** The content of this publication is for general information to Avocado farmers and technical staff only and no person should act, or fail to act on the basis of the information herein without professional advice from crop health experts.

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