

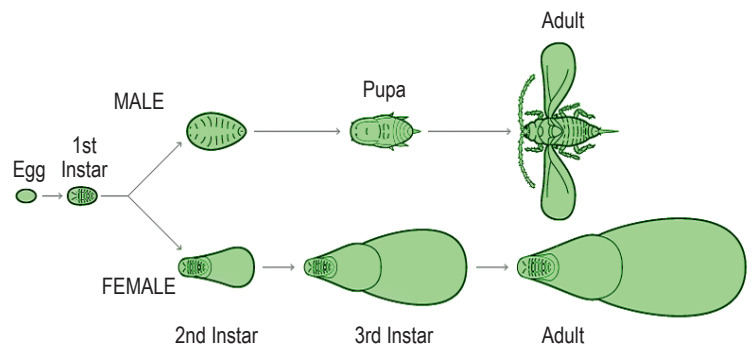
# SCALE INSECTS

## BASF Insect Management Guide

### Take an Integrated Approach to Scale Insects Typical Scale Insect Life Cycle

Adopt an **I**ntegrated **P**est **M**anagement (IPM) program that includes:

- Scouting: visual inspection
- Positive identification of pests and their signs
- Record keeping
- Decision making based on historical information
- Use of different control practices: chemical, biological, cultural, and mechanical



### Chemical Control

Option	Rotation 1	Rotation 2	Rotation 3	IRAC Mode of Action Groups
1	<b>Ventigra</b>	Mainspring	<b>Ventigra</b>	9D, 28
2	Altus	<b>Ventigra</b>	<b>Ventigra</b>	4D, 9D
3	<b>Ventigra</b>	Aria	Kontos	9D, 29, 23
4	Tristar	Ventigra	<b>Ventigra</b>	4A, 9D
5	Marathon + IGR	<b>Ventigra</b>	<b>Ventigra</b>	4A+7, 9D
6	<b>Ventigra</b>	<b>Ventigra</b>	<b>Ultra-Pure Oil</b>	9D, NC

- Apply Ventigra at 4.8-7.0 fl oz/100 gallons; apply all others at standard local rate (SLR)
- Choose an IGR (Insect Growth Regulator) by use site and rate: Enstar, Fulcrum, or Distance
- Begin applications early; include adjuvant in applications for best results
- Target insecticide applications to juvenile lifestages: larvae through pupae
- Refer to product labels and recommendations for additional instructions
- For additional MOA groups, include a pyrethroid (Group 3) or azadirachtin (Group UN)
- Make no more than two (2) sequential applications of any group before rotating to another MOA

## Biological Control

Commonly used biological control agents (BCAs) for Scale Insects

Consult with your BCA supplier for availability, rates, timing, and compatibility

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### Natural Enemy

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*Aphytis* spp. – parasitoid

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*Cryptolaemus montrouzieri* – predator

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*Encarsia* spp. – parasitoid

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Various lady beetles

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*Beauveria bassiana* – beneficial fungus

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- Check the compatibility of BCAs with your chemical applications prior to releases
- Control ants as they work against BCAs by protecting scales from natural enemies
- There are a number of naturally occurring beneficial organisms that may predate or parasitize scales. When possible, avoid using broad spectrum insecticides to preserve these natural enemies.

## Cultural Control

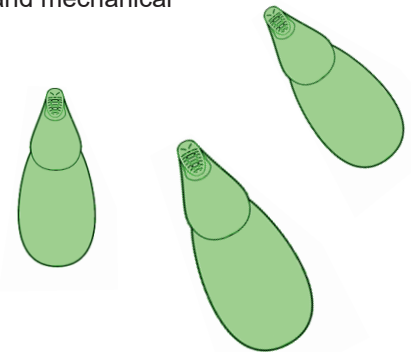
- Maintain good sanitation practices with special focus on host crop and host plant areas
- Scout the landscape plantings around the nursery for potential reservoirs of scale insects
- Pay careful attention to perennial stock or “mother” plants that may harbor pest populations
- Thoroughly inspect new plant material for eggs and juveniles

## Mechanical Control

- Oils and insecticidal soaps are key for controlling scale insects
- After control is established, plants may need to be cleaned to remove pests and residues – oils, insecticidal soaps, or plant-safe adjuvants can be helpful
- Trap boards and sticky cards are useful for intercepting adults and motile juveniles as an early scouting technique, but will not provide suppression or control

## Best Management Practices for Scale Insects

- **Scout** known host plants in spring and all new plant material
- Be able to **identify** the common scale species to your area and crops
- **Treat** affected plants at on the onset of infestation; treat known hosts preventatively
- Always **read** and follow label instructions
- Use all four approaches for an **integrated** program: chemical, biological, cultural and mechanical



Consult with your BASF representative for more specific recommendations

Visit [betterplants.basf.us](https://betterplants.basf.us) for more information about BASF products and innovations

  
We create chemistry