



Aphytis melinus

Scale Parasite

Description

Aphytis are tiny parasitic wasps measuring only 1/16" in length. They are yellow with short knobby antennae and three tiny red eye spots on top of their heads. *Aphytis melinus* adults can be confused with the California red scale adult male, however the male scale has long antennae, a dark band around its back and only one pair of wings.

Target Pests

California Red scale and other types of armored scale including Oleander Scale, San Jose Scale, Ivy Scale and Citrus Yellow Scale.

Life Cycle

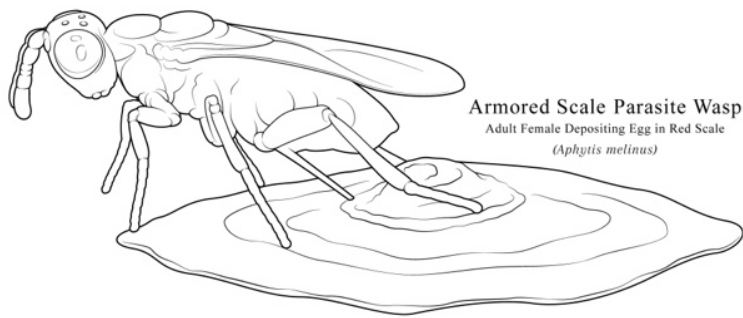
The adult female wasp lays an egg under the exterior hard shell of the scale. When the egg hatches, the wasp larva devours the soft adult scale insect. The adult wasp emerges from a small round exit hole about 14 days later and starts to search for more scale to parasitize. At a temperature of 80°F, *Aphytis melinus* takes 13-17 days to develop from egg to adult. Each *Aphytis* female can lay approximately 100 eggs during her two-week lifespan. The adult *Aphytis* females also feeds on scale pests. This natural enemy is very effective as it reproduces 2-3 times faster than the scale.



Use in Biological Control

In greenhouses and interiorscapes, release in early morning or at dusk. Leave the container open on its side among foliage or walk through infested area and gently wave the container for a more rapid release. The optimum temperature for reproduction is 77°F but *Aphytis* can continue its life cycle within a temperature range of 55°-100°F.

In an orchard release on the shaded side of the tree, every fifth to sixth tree and every fifth or sixth row, staggering release points throughout the field. Release points should be no more than 100 feet apart.



Armored Scale Parasite Wasp
Adult Female Depositing Egg in Red Scale
(*Aphytis melinus*)

[Research](#) has shown that the fecundity and longevity of *Aphytis melinus* is positively influenced by the presence of honeydew or supplemental honey as another food source. *Aphytis* has been an effective biological control for many citrus crops around the world, as well as ornamentals, nuts and fruit. [Wasp fitness](#) has been shown to be more robust during warmer months of the year. Raymond Cloyd from Kansas State has produced an informative article on [scale insect pests](#) to help with scale identification.



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Introduction Rates

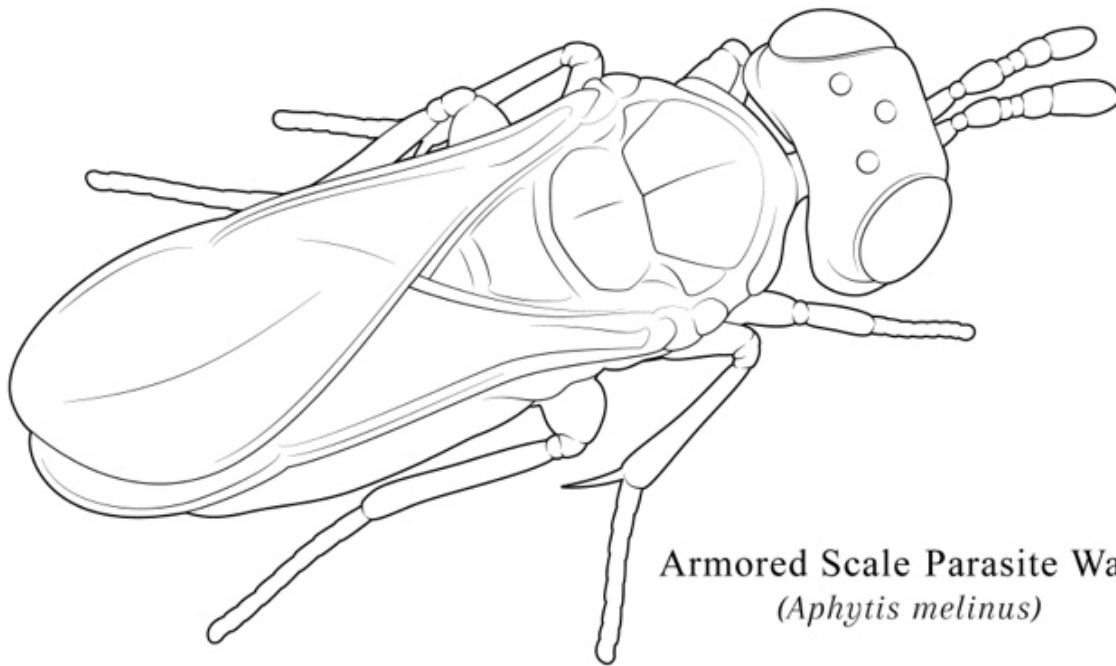
- 1-6+ per square foot of crop canopy, every two weeks or as needed.
- 40,000 to 90,000 wasps per acre, up to 120,000 for heavy infestations.

For Best Results

The effectiveness of *Aphytis* is greatly reduced if ants are active as they will protect the scale from the *Aphytis* wasps. Other scale predators are ladybird beetles such as *Rhyzobius*, as well as lacewing larvae.

Using Pesticides

Aphytis are sensitive to many pesticides so it's important to check for pesticide residues before releasing this beneficial insect.



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Content Courtesy of Associates Insectary and UC IPM