HARD SCALE PARASITE

Aphytis melinus "The Golden Chalcid"

Product: *Aphytis melinus* is a tiny (1.2mm), golden chalcid wasp. It was imported into the United States in 1956 from India and Pakistan as a possible bio-control for California Red Scale. It has been widely used since the late 1950's with good results.
The parasite attacks the female scale during the period of time where she has loosened her attachment to the plant allowing the male scale to fertilize her. During this time, the female scale produces a sex pheromone which attracts not only the male scale, but the female *Aphytis melinus*. The parasite measures the scale insect, and then oviposits a combination of female or male eggs. The parasite can determine how many of her offspring can successfully reach adulthood on the amount of food in the scale, and also determines the sex of each egg she lays. She may lay only one egg or as many as five in one host, although the average is slightly greater than 2 eggs per female scale. One *Aphytis melinus* female can lay up to 25 eggs underneath several female scales. In areas where the scale insect has many generations overlapping each other, timing of *A. melinus* releases is not real important. In areas where the scale is all one generation, timing is critical. Pheromone traps can be used to determine when the scales are flying. That is the time to release *Aphytis melinus*.

Target: *Aphytis melinus* is a specific parasite of armored scale (those that do not produce honeydew), such as California citrus red scale, oleander scale, oyster scale, San Jose scale, ivy scale & yellow scale.

Release: Release these parasitic wasps at sundown of the same day, starting at one end of the area to be treated, up wind. If outdoors and windy, open the container and allow the wasps to fly out on their own as you walk among the plants. You can speed up their exit by simply tapping out the wasps or you can wedge the container in the foliage of the most heavily infested plant, allowing the wasps to auto- disperse. Try to concentrate the bulk of them at release points on or near the most heavily infested plants. If multiple containers are used, place the containers evenly throughout the target area. Studies have shown that *A. melinus* can move as far as 6 trees in all directions from a release site within 24 hours. Remember to avoid releasing when it is very cold <50°F (10°C) or very hot >100°F (37°C).

Rate: 5-10 wasps per plant; 10 wasps per $1m^2$ ($3½ ft^2$) every 2-3 weeks until controlled or 5,000 to 10,000 wasps per ½ ha (1 acre) per year. *Aphytis melinus* will establish a population. Works very well in greenhouses as well as outside!

Notes:

- Store these adult wasps at room temperature, 50-70°F (10-21°C), in a shaded location for no longer than 8 hours. They do not tolerate extreme heat, dust, and low humidity. Optimum temperature range is 76-85°F (25-30°C) with a relative humidity between 40-50%.

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Please let us know within 24 hours of receipt if there are any problems with your Live Insect Order.

For further Information Contact: **NATURAL INSECT CONTROL**, 3737 Netherby Road, Stevensville, Ontario, L0S 1S0
905-382-2904 (Tel); 905-382-4418 (Fax); info@naturalinsectcontrol.com
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