Aphytis melinus
the golden chalcid
Armored Scale parasite
8765 Vollmer Rd Colo Spgs. CO 80908
800-634-6362 * 888-693-0578 * fax 719-495-2266
e-mail: hgi@hydro-gardens.com
web http://www.hydro-gardens.com

Contents 5,000 adults for immediate release. Check contents and report any problems at time of delivery.

Target pests (in order of preference)
California red scale, Aonidiella aurantii, on citrus, roses and ornamentals
Ivy or oleander scale, Aspidiotus nerii, on a wide range of hosts including palm and cycads
San Jose scale, Quadraspidiotus perniciosus, and Walnut scale, Q. juglanregiae
Dyctyospernum scale, Chrysomphalus dictyospermi, on a wide range of hosts

Biology
Aphytis melinus is a small (1 mm) yellow wasp that parasitizes various types of armoured scales by laying eggs under the waxy scale covering. Parasite larvae develop under the scale covering. Only 2nd and 3rd instar female scales and 2nd instar and pre-pupae male scales are parasitized. Many other stages of scales are killed by adults host feeding on them. Parasitized scales look dried out and may have dark spots when examined closely. Rubbing infested fruit and noting the amount of dead scales removed can give a quick assessment of parasitism. Scale with young parasites and no parasites will stay on the fruit. At 80°F, A. melinus takes 13-17 days to develop from egg to adult. Adults live about 10-15 days (up to 24 days), depositing 6-7 eggs/day. Optimal release conditions are between 60-85°F, at least 50% RH and in areas with scales of suitable stages for parasitism. Minimum temperature for release is 40°F night and 60°F day. They start flying at 50°F and you need several hours above that for them do lay eggs.

Use in Biological Control
Aphytis melinus are available in plastic cups of 5,000. In general they should be released regularly (1-3 week intervals) at the first sign of scale in the spring until low scale populations are maintained.
♦ To build an established population in orchards, 1-2 cups/acre should be released every other week until the scale population is reduced to a low level. Release on the shaded side of the trees at temperatures below 90°F. Release some parasites every sixth tree every sixth row starting at a different row each week to assure even distribution. The parasites can be released either by leaving an opened cup in a tree infested with scales or by walking through the orchard with an opened cup for more rapid dispersal. Afterwards an annual release of ½ -1 cup/acre is recommended in the spring. Use a summer oil spray to reduce high number of scales 2-3 weeks before releasing parasites.
♦ For interior plantings, regular releases of A. melinus work best and can control infestations in 2-3 months. Afterwards 1-3 releases/year should be sufficient to maintain control. The release rate depends on the suitability of the scale host. A guideline rate is 5-10 parasitoids/infested plant or 10/sq yard. Release parasitoids by waving an opened cup around infested plants 2-3 times at 2-3 week intervals. Release at dusk or with the windows shaded so the Aphytis will find infested plants quicker. If initial scale populations are high, apply insecticidal soap 2-3 weeks before 1st release. Wash off honeydew accumulations off plants just before release.

Storage
Use parasites same day of arrival. If absolutely necessary to hold, place in a cool (approx. 60°F), dark place until use. Do not refrigerate or place insects directly next to cold packs. Aphytis viability decreases rapidly with prolonged storage.

Pesticide compatibility
Oil sprays, insecticidal soaps, Bacillus thuringiensis (Bt) and Sabadilla. If more toxic pesticides must be used, Aphytis should be released again about 4 weeks after application.