

first major pest of California's eucalyptus trees, first planted about a century ago for use as windbreaks, telephone poles, lumber, paper pulp and fuel. The evergreen tree has since become a popular urban



The *Syngaster* wasp lays its eggs inside beetle larvae.

Photo by Max Badgley

landscape feature because it grows fast and needs little maintenance.

The borer was first discovered in 1984 near El Toro in Orange County, throughout the state, in both coastal and valley areas, as far north as the Bay Area and the Sacramento valley.

The adult borers eat pollen and nectar, and do not damage trees. The larvae do all the damage, as they bore into the inner bark to feed on it and on the underlying cambium tissues.

The beetle has become a pest in part because it was brought here from Australia without its natural enemies. In Australia, a variety of natural enemies help keep the beetle population in check, according to University of California Riverside entomologists, who are studying five of those natural enemies.

In San Diego, Stan Rys, pest management director for New Way Professional Landscape Services, has been colonizing the eugenia psyllid wasp at 12 different breeding grounds, including North Park, Golden Hills and Mission Hills. The wasps were recently released in various parts of Southern San Diego.

New Way specializes in landscape maintenance for commercial properties, home owners associations and apartments. Its pest department specializes in biological alternatives to combat pest problems.

For more information about New Way's approach to predator research, contact Stan Rys or Randy Newhard, at (619) 566-1400.

Considering IPM? First learn crew strengths, weaknesses

■ In an Integrated Pest Management program, pesticides are only placed where pests are causing a problem in the landscape.

If you want to begin an IPM program, you must train your people to be able to identify pests and diagnose problems.

Dr. Cliff Sadof, entomologist at Purdue University, offers these suggestions for proper IPM implementation:

● **What are your appearance standards?** Prioritize management so the plants you want to look their best do look their best.

● **Map your inventory.** Assess plant condition, and record the occurrence of pest, disease and cultural problems directly on the maps. This will simplify how you track plant quality during the season.

Find out who knows what about IPM, and train those who need to know more. Ask your extension agent for tips on training and certification.

● **Monitor and keep records.** Use a rating system for plant condition, and record the cause of any decline, on a new map, at least twice a month. This helps you accurately communicate where and when to apply products.

● **Put scouts to work.** As used here, scouting refers to plant inspection and observation. A well-coordinated scouting program can reduce the time used for monitoring.

● **Choose treatments.** Know when a pest is most destructive. Spider mites, for example, cause leaves to lose color; the mites thrive in hot, dry weather. Therefore, they'd be a bigger threat in July than in September.

Look for trends that might hint at a rush of pest activity.

● **Treatment.** Apply chemical control products to small areas if possible. Use alternatives to long-lasting products. Natural predators should be preserved whenever possible.

Learn about insecticidal soaps and oils.

Some basics are listed below.

● **Evaluate.** Use your plant quality records to determine success. Have complaints or comments about pesticide use increased or decreased.

Summarize your IPM records to help you focus your future pest management efforts. Focus your attention on the handful of pests doing most of the damage.

Soaps, oils favorite IPM weapons

Insecticidal soaps, like other soaps, are made from the salts of fatty acids. They are used to control soft-bodied pests such as aphids, thrips, scales in crawler stage, whiteflies, leafhopper nymphs and mites. The common insecticidal soaps now available commercially contain potassium oleate—the potassium salt of oleic acid—as the active ingredient.

Some soap products contain pyrethrins or citrus oil derivatives. Some insecticidal products contain soaps or shampoos in combination with organophosphates or other kinds of insecticides (such as pet shampoos).

The toxic action of the soap disrupts the insect's outer body covering, and may enter the respiratory system.

Oils. Essential oils are volatile (disperse as a gas), odorous oils from plant sources. Many are generally considered to be safe, however they can irritate skin and mucous membranes at high concentrations.

The most common oils used as repellants are cedar, lavender, eucalyptus, pennyroyal and citronella.

Neem products are derived from the Indian neem tree. Neem acts as a feeding deterrent in insects. In various forms it also serves as a repellent, growth regulator, suppressant, sterilant or toxin.

Susceptibility to neem differs by species.