

Mealybugs on citrus

Planococcus citri, *Pseudococcus* spp.



Mealybugs *P. citri* (United States National Collection of Scale Insects Photographs Archive, USDA Agricultural Research Service, Bugwood.org)



Predator, *C. montrouzieri* (Sonya Broughton, Department of Agriculture & Food Western Australia, Bugwood.org)

Prevention	Monitoring	Direct Control
<ul style="list-style-type: none"> ● Maintaining balanced fertilization helps to minimize the impact of the pest ● Prune trees to avoid contact between trees and between branches and the ground, and to maintain good air circulation around the trees ● Avoid the presence of suckers or sprouts with excess vigour ● Mealybugs are often effectively controlled by a wide range of natural enemies (parasitoids, lacewings, ladybirds, hoverflies, etc.) and do not cause economic damage: avoid disturbing the natural balance by applying pesticides and control ants that protect the mealybugs against natural enemies ● Disinfect equipment and tools to prevent the propagation of mealybugs 	<ul style="list-style-type: none"> ● Once a week, monitor 1% of the orchard ● Check the protected areas of the trees where the mealybugs are grouped; fruits, cracks, shoots, under the sepals and at the base of the pedicel of the fruits, inside the dry rolled leaves and at the base of the trunks <ul style="list-style-type: none"> ● Cochinilla: The female has an oval body (3 mm long) covered with fine particles of white wax ● Leaves: the production of fumagina caused by the honeydew results in decreased rates of photosynthesis which can weaken young trees and cause defoliation ● Twigs: reduced tree vigor caused by mealybugs feeding on the sap ● Fruits: decrease in quality caused by spots and development of fumagina; discoloration caused by insects feeding; fruits dropping ● To monitor the presence and activity of the natural enemies, tie around the trunk an aggregation trap made of corrugated cardboard (10/2-4 ha orchard). In this artificial refuge, female mealybugs, parasitized mealybugs, parasitoids and predators are protected. ● Use pheromone traps for monitoring ● Monitor the presence and abundance of ants in the trees that protect the mealybugs 	<ul style="list-style-type: none"> ● Apply organic mineral oil or frequent washes with soaps at high pressure. This removes the honey and wax that prevents control by natural enemies ● Release parasitoids and predators that are commercially available in your country (e.g. <i>Anagyrus pseudococci</i>, <i>Pauridia peregrina</i>, <i>Leptomastix dactylopii</i>, and the predator <i>Cryptolaemus montrouzieri</i>) ● After harvesting, remove branches where a high number of ants are protecting the mealybugs. Otherwise these could serve as an inoculum for the next season

Note: Pesticides may be available to control this pest. Please check with the Ministry of Agriculture in your country to find out which pesticides are registered in your country and the local restrictions for their use.