

# Introduction & Key to Mealybugs

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*Citrus mealybug* (Charles Olsen, Bugwood.org)

One of the more common groups of scale insects attacking ornamental plants are called mealybugs. There are about 275 species of mealybugs known to occur in the continental United States. Mealybugs are prevalent pests in greenhouses and interior plantscapes such as shopping malls, conservatories, hotels, and office buildings. Mealybugs cost growers and retailers millions of dollars per year in control costs and crop damage or loss. Damage is caused by mealybugs feeding on host tissues and injecting toxins or plant pathogens into host plants. In addition, mealybugs secrete a waste product, honeydew, which is a syrupy, sugary liquid that falls on the leaves, coating them with a shiny, sticky film. Honeydew serves as a medium for the growth of sooty mold fungus that reduces the plant's photosynthetic abilities and ruins the plant's appearance. Feeding by

mealybugs can cause premature leaf drop, dieback, and may even kill plants if left unchecked.

Mealybugs are one of the more active groups of scale insects as most of them retain well-developed legs and remain mobile throughout their life. However, they generally move little once a suitable feeding site is found.

They are small insects (1 to 4 millimeters long) and the body is usually covered with a white cottony or mealy wax secretion. This makes them appear like small spots of cotton on the plant, particularly when the female is laying eggs and producing an ovisac to cover and protect the eggs. Mealybugs generally have an oval body outline. Many of them produce marginal filaments of wax that may be wedge-shaped or spine-like, but others lack marginal filaments entirely. As immatures, male and female mealybugs look alike, but as adults they are quite different. The adult male looks more like a small two-winged fly.

The life history of mealybugs varies depending on the species. Basically, female mealybugs go through four developmental stages or instars and as adults may lay up to 600 eggs, usually in a cottony-like ovisac beneath her body. The eggs hatch in 6 to 14 days and the first instars or "crawlers", as they are commonly called, disperse to suitable feeding sites on new plant parts or hosts. They can survive only about a day without feeding, and once they insert their stylets to feed they generally remain anchored permanently. The crawler stage is the most fragile and easily controlled stage in a mealybug's life history. Some mealybugs, like the longtailed mealybug, do not lay eggs, but bear their young as active crawlers. Male mealybugs go through five instars and feed only in the first two instars. Adult males have no functional mouthparts, live only a day or two, and exist solely to fertilize the females.

In the outdoors most mealybugs go through one or two synchronized generations and overwinter as second instars. Indoors, there may be a continuous overlapping of generations and all stages can be found on the host at a given time. The citrus mealybug may have as many as eight generations indoors. The overlapping of generations makes control difficult. One of the first methods of control is to purchase plants that are not infested with mealybugs. Commercial flower growers sometimes discard plants infested with mealybugs rather than try to rescue them with insecticidal treatments.

Common mealybugs occurring indoors include: the citrus mealybug, the longtailed mealybug, the Mexican mealybug, and Pritchard's ground mealybug. Citrus mealybug is by far the most common and widespread mealybug pest. It attacks nearly every flowering species grown in the greenhouse.

## Key to the most common mealybugs found on flowers and foliage plants

- 1. Longtailed Mealybug.** Adult females with long, white filaments at the rear; females apparently giving birth to live young.
  - 1.' Adult females without long, white filament at the rear; females lay eggs in a dense, white fluffy ovisac .... 2
  2. Female feeding on above ground portion of plant.....3
- 2.' Pritchard's Mealybug and other root mealybugs.** Female never feeding on above ground portions of plant; white mealybug feeding on roots.
- 3. Citrus Mealybug.** Body orangish or purplish and covered with white bloom; a darker line down the middle of the back; mealybug very damaging to the health of many plants.
- 3.' Mexican Mealybug.** Body purplish and covered with white bloom; three rows of white tufts down the back; may occur in high numbers with little effect on the health of the plant.

