

THE BROMELIAD GUIDE TO MEALYBUG & SCALE INSECTS



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THE TWO MOST COMMON BROMELIAD PESTS

MEALYBUG

Mealybugs are one type of pest that can be particularly devastating to bromeliads. When properly identified and managed, a mealybug infested bromeliad collection can be salvaged. Mealybug populations do not explode overnight; they usually have been present for a long time just as low population levels. When at low levels they can be hard to find because of their ability to hide in plant cracks and crevasses.



WHY ARE MEALYBUGS SO DESTRUCTIVE?

Mealybugs can damage plants while feeding by injecting toxins into the plants, causing deformation. Also mealybugs (really a type of soft scale) excrete honeydew as they feed. Unsightly sooty molds will often grow on the honeydew. This honeydew can also get on walls, furniture, floors and other items making them sticky. At high levels, mealybugs can cause plants to defoliate and even cause plant death.

HOW TO IDENTIFY MEALYBUGS

Soft-bodied, flat and waxy, mealybugs can also be identified by their oval shape and body segmentation. These insects can also resemble cottony spots, as females lay eggs encased in a waxy cover. Adult males, however, look completely different: they have wings and look more like small flies and are not often seen. Damage caused by mealybugs includes yellowed and dropping leaves, distorted growth, and sooty black mold.

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THE LIFE CYCLE OF A MEALYBUG

A mealybug's life cycle depends on the species, but as an infestation grows it can cause major harm to plants. Females go through four developmental stages—or instars—and adult females can lay as many as 600 eggs. The eggs hatch in 6 to 14 days, and the crawlers—the first instars—crawl to new places to feed and anchor themselves there. Male mealybugs go through five instars, feeding in their first two instars and developing wings when they mature into adults.

Life is short for adult mealybugs: females die shortly after they lay eggs, and males live for a day or two after fertilizing females. Adult male mealybugs have no mouthparts, leaving them no way to feed. They sometimes can be mistaken for fungus gnats.

DO YOU HAVE A MEALYBUG INFESTATION?

Clear indicators:

- Cotton / waxy deposits on plant
- Black sooty mold
- Yellowing and dying leaves
- Distorted or stunted plant growth

IT'S TIME TO TAKE BACK CONTROL

Once you've identified your problem, you need to think about management options. Often removing and destroying any infested plants may be the most economical treatment.

Biocontrol for mealybugs can be somewhat tricky and it helps to know which mealybug species you are dealing with. There are some commercially available options like *Cryptolaemus*, the mealybug destroyer. These ladybird beetles work best in mass planting and not individual containers. It's also not the best choice for long tailed mealybug. Another are green lacewings. Since these are generalist predators they can help with many pests in addition to mealybugs.



With mealybugs it's best to get someone knowledgeable on biological control of mealybugs involved. This way you can get the right predator for your mealybug species.

For spray options, horticultural oil works well on mealybugs but you must get the oil in contact with the pest. This can be hard because of their waxy coating and their ability to hide in protected areas making it difficult to get good spray coverage. Another alternative are the systemic insecticides. These are compounds like Safari (dinotefuran) and Flagship (thiamethoxam) and can be used as a drench on the interior landscape. They and can be very effective when used appropriately.

Pest control labels vary between states and the pesticide user bears the responsibility of consulting the pesticide label and adhering to the law. Always read the label before a pesticide is applied to make sure it is legal to apply on your site, in your state and the plant material.

PREVENTING MEALYBUG INFESTATIONS

Because mealybug infestations can be so damaging, it's best to try to prevent the problem by inspecting any plants you bring in before taking them to the job site. If a problem is found, remove and treat the plants immediately.

Mealybugs can be some of the toughest, most troublesome pest for the indoor bromeliads. By inspecting plants before you purchase and introduce them into your collections, you can be the best defense against a nasty mealybug offense.

QUICK REFERENCE GUIDE:

SIZE: 2-3mm in length

SHAPE: oval

COLOR: light yellow (nymphs), white (adults)

LEGS: six, but not very visible

ANTENNAE: yes, but not very visible

WINGS: only adult males have wings



SCALE

Scale insects are interesting insects that look more like a bump on a plant than an insect. With a list of approximately 8,000 species of scale, these insects range in size and shape and can be difficult to identify at times. They can do real damage to plants by feeding on the sap of a plant, stunting its growth.

WHY ARE SCALES SO DESTRUCTIVE?

These small insects have incredible reach despite an inability to move. Scales feed by sucking the sap out of plants with long, straw-like mouth parts that can be several times longer than their bodies. Their waxy protective coatings can make them difficult to eradicate with pesticides.



HOW TO IDENTIFY SCALES

Adult female and immature scales resemble their name, with an appearance that may remind you of a scale or bump. Scale insects can be divided into two groups: armored and soft. This is important to know because they sometime require different control options. Scale are often found on the underside of leaves and leaf axils. Armored scales have a cover over the their bodies. They often have a bump or oyster look to them and are more oval shaped. Soft scales can be smooth or waxy, and tend to be rounder and less oval. Only the soft scales excrete honeydew. So if scales are found and honeydew is present, you know it is a soft scale. It is important to know the difference because if can make a difference when selecting a control option.

THE LIFE CYCLE OF A SCALE

Many species of scales can reproduce without males. The females lay their eggs and cover them with their bodies, allowing the eggs to hatch. The life cycle of a scale includes egg, nymphs and adult stages. Hatched scales are called "crawlers," and move to a place on a plant where they can settle and feed. Females go through a second instar stage before becoming adults, while the males of some species go through a pupa stage before becoming adults with legs and wings.

DO YOU HAVE A SCALE INFESTATION?



Clear indicators:

- Bumps on stems or leaves
- Yellowed leaves
- Black sooty mold from sticky honeydew

IT'S TIME TO TAKE BACK CONTROL

Time to tip the scales in your favor! Immature scale can be washed off bromeliads with just water, but adult females are much harder to kill. You can prune away infested leaves or wipe the scale off with plant cleaning mitts. When it comes to biological control, options are very limited for scale. One beneficial worth looking at is the green lacewing. It feeds on many soft bodied insects and may provide suppression of some scale species. You can buy them as eggs or larvae and they will not complete their life cycle indoors, so there will be no flying adults.

Horticultural oils work extremely well on scale insects. All you have to do is get good spray coverage. If you are dealing with soft scale, chemical insecticides like Safari (dinotefuran) and Flagship (thiamethoxam) can work very effectively. Unfortunately they do not work as well on all armored scale species, so for the armored versions, horticultural oils are the better way to go.

Pest control labels vary between states and the pesticide user bears the responsibility of consulting the pesticide label and adhering to the law. Always read the label before a pesticide is applied to make sure it is legal to apply on your site, in your state and the plant material.

PREVENTING SCALE INFESTATIONS

Always inspect incoming plants top to bottom for pests. Keep an eye out so you can stop a scale infestation before it gets out of control. If you discover one of your plants has scales, remove it and start a treatment program as soon as possible.

Scales can kill a bromeliad, but diligence and dedication can prevent them from becoming a problem.

QUICK REFERENCE GUIDE:

SIZE: 1-5mm in length

SHAPE: varies (pear-like)

COLOR: plain colors (brown/pink) to opalescent

LEGS: none, some male species have six

ANTENNAE: two, some male species

WINGS: one set, some male species