

There is nothing more annoying than discovering that your best orchid has been damaged just days before it opens. It happens! The Coffs Coast is not devoid of life forms that can inflict damage on orchids and every collection is vulnerable to attack by most pests and diseases. Yes, things that affect your orchids fall into two basic categories - Pests or Diseases. The latter includes Fungi, Bacteria and Virus.

This article will look at some key pests, leaving consideration of other pests and orchid diseases for another time. The good news is that with early detection and prompt implementation of control measures extensive damage can be avoided.

**TWO-SPOTTED (or RED SPIDER) MITE** - Mites can be a really serious pest. They resemble tiny ticks/spiders but cannot easily be seen without a magnifying glass: they occur during warm, dry conditions along with poor air circulation. Feeding on the leaves and buds, Mites puncture cell walls to suck the contents, particularly chloroplasts. This results in a yellow or tan patchwork of chlorotic damage. Portions of or the entire leaf may even turn dry and brown and generally reduces the vigour of plants. If left unchecked they may kill plants. In addition, Mites may transmit certain viruses.



Two-spotted Mites >

### Mite Leaf Damage



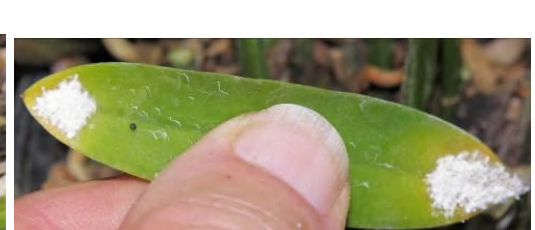
By the time damage is evident, a mite infestation already exists. To check their presence, inspect the top and back of the leaves. Mites are present if any appear silvery. The silvery deposit is a network of fine silk webbing to protect the colony from predators and maintain high humidity near the leaf surface. It is also protective against pesticide sprays.

Small infestations can be dusted with sulphur or a sulphur-based powder (Rose or Tomato dust). Larger infestations require a miticide spray or Predator Mites (recommended). Because of their reproduction rates (usually less than 14 days), Mites quickly develop immunity to insecticides so you should change chemicals after 2 or 3 applications. Kelthane, Omite and Mavrik are some commonly used miticides There are new miticides as well. If you prefer not

to use these, either buy Predator Mites (via Google) or another enviro-friendly approach is to mix 2.5mls of Eco-Oil and Canola oil to 1 litre of Water. Other oil-based sprays work too.

**SCALE - BOISDUVAL (BS)**, sometimes called "Coconut Scale": is another serious pest: they are a constant annoyance to me - the consolation is that these pests are present in most collections and gardens and are unrelenting in their determination to exist and feed on living plant tissue: consequently they need to be regularly sought out and promptly treated: BS is difficult to control, meaning a single treatment is never enough. They life-cycle is short and it may take 3-4 applications, each 7-10 days apart, to eliminate a heavy infestation - the spray will kill the exposed adults and crawlers, not the eggs.

BS is most evident when found as a white cottony mass anywhere on a plant, i.e. on or under leaves, on pseudobulbs, beneath dry sheaths, near roots, in the bark: **it is often mistakenly ID'd as Mealy Bug**. Don't be fooled - those minute white fluffy things are the crawler stage; when they mature, each female produces a protective covering under which it lays up to 200 eggs. The covering hardens ('the scale'), the females die and within 5-7 days the eggs hatch. The entire life cycle averages less than 50 days.



Scale (females/egg) covering

Live scale 'crawlers'

Leaf Underside showing early signs of Scale Damage

Leaf topside with 'crawlers'

Next time you see yellowing marks on leaves, check the other side. If Scale is present, you will find a mass of hundreds, if not thousands, of free-moving crawlers which, by then, have begun sucking the life out of your orchid(s). Affected areas become yellow. All orchids are happily consumed by BS.

Use either an insecticide such as Malathion or Maldison, spray a mild solution of White Oil and Water or, I prefer to, remove Scale with a toothbrush and a Yates Scale Gun spray. Other options are to mix 4 tablespoons of dishwashing liquid with 1 cup of vegetable oil then combine 1 part of that with 20 parts of water and spray all affected plants. A TIP: if you find evidence of any scale on one leaf ALWAYS treat the entire plant and thoroughly check other plants.

- **BROWN SCALE** - there are 2 brown scales (hard or soft). Both have a brown convex cover about 4mm in diameter. The soft scale sometimes appears yellowish, it produces honeydew; the hard scale does not. Either indicates a cultural issue such as insufficient light, poor air circulation and/or dirty growing conditions and can eventually kill plants. Ants will transfer the soft scale around the shadehouse so you should control these too. Spray with a mild solution of White Oil and Water OR use the mix of 4 tablespoons of dishwashing liquid with a cup of vegetable oil and use 1 part of that with 20 parts of water to spray the affected plants.

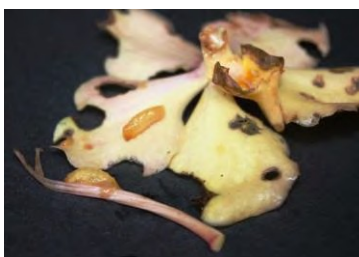
Brown Scale >



**DENDROBIUM BEETLE** - Coffs Harbour is practically the epicentre of this beetle's distribution. They can be a real problem and are most prevalent in the warmer months. They look like an over-sized ladybeetle and are voracious feeders, quickly chewing and sucking the sap out of bulbs, leaves, buds and flowers. The epidermis of leaves is reduced to a lattice-like network. They lay eggs on orchids which hatch into larvae (maggots) that equally love eating orchid parts, particularly buds and flowers. When ready to pupate, the larvae eat into pseudobulbs and then re-appear next season.



Dendrobium Beetle



Feeding Beetle larvae



Beetle larvae & eggs

Options for control are: 1. catch the adults by hand and crush them under foot (be quick or they will fly away). To catch the beetles always hold a hand below them because, if threatened, they will drop into the potting mix and disappear; OR 2. catch and drown them in water - keep a half-filled jar in the shadehouse; OR 3. spray your collection several times with Carbaryl, Maldison or something similar from mid-Spring- late Autumn.

**CATERPILLARS, COCKROACHES, CRICKETS AND GRASSHOPPERS** - all these creatures also chew orchids - mainly the foliage and flowers, some the roots, and will devour large quantities in a very short time. Infestations of Caterpillars are likely if butterflies or moths have been allowed into the shadehouse. Cockroaches often live in the potting mix, chewing chunks out of both orchid blooms and new root tips at night. Crickets and Grasshoppers - a well sealed shadehouse (which I lack) may stop them. I find some grasshoppers throughout the year, especially from August to January. A big grey-brown grasshopper (about 10 cm long) appears in early autumn, it eats big chunks.

For Caterpillars, Crickets and Grasshoppers - Spray Carboxyl, Malathion or Maldison, repeat a week later.

Confidor/Conguard are good too. OR use Dipel, which you must mix with ECO-OIL at 3 ml per litre of water and always spray in the evening for best results. For the big grey Grasshopper, try a preventative spray in late March and again in mid-April.

For Cockroaches - use cockroach baits, Baygon dust, OR Ant, Cockroach and Spider Spray OR enviro-friendly alternatives are -

1. Add 2 tablespoons of soap flakes to a litre of water and stir thoroughly until completely dissolved (quicker in warm water). Then spray it on as is.

2. Mix a cup of molasses into one litre of water and spray it over new foliage.

**MEALY BUG** - Perhaps I have been lucky but I have never had mealy bug on any orchid (my wife found those shown in the photo on a Dracaena on our front veranda). That aside, mealy bug can be a menace for some people. When mature, they have white filaments around their body giving them a hairy appearance (see photo arrow). They prefer mild temperatures and high humidity and have a 2-3 week life cycle. Groups of these sap-sucking insects favour plant crevices and may kill plants. Because they exude honeydew they may attract ants. Spray with Confidor/Conguard or Malathion/Maldison. Pyrethrum, Nature's Way Vegie & Herb Spray and Pest Oil are safer alternatives OR try the dishwashing liquid & vegetable oil spray mentioned under Scale treatment. Note that Mealy Bug have a wax coating which can repel sprays unless used with a spreader-sticker. For minor attacks, simply use a cotton bud dipped in metholated spirits mixed with water. Repeat spray every 2-3 weeks for about 2 months.



**IF USING COMMERCIAL INSECTICIDES ALWAYS FOLLOW THE LABEL INSTRUCTIONS AND OBSERVE SAFETY PRECAUTIONS. INSECTICIDES ARE POISONS AND MAY BE HAZARDOUS TO YOUR HEALTH.**