Brisbane Orchid Society

Orchid Culture

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Growing Conditions

Phalaenopsis	indirect light	humid	Almost dry out between waterings	
Paphiopedilums	75% shade	humid	Well drained, but never dry out	Warm
Bulbophyllums	Moderate light	85% humidity	Moist, well drained	Warm
Catasetum	Good light	Good air movement	Deciduous. Winter dry, Summer plenty of water and fertiliser	Winter, keep under cover
Cattleyas	Good light	Good air movement, some humidity	Good drainage, almost dry out between waterings	Warm
Dendrobium - hardcane (bigibbum /Cooktown types)	Good light	Good air movement to avoid fungal infections, Humid in growing season	Dryish in Winter, fertilise heavily when growing in Spring/ summer but almost dry out between waterings.	Winter, keep under cover
Dendrobium - soft canes, Indian Dens	Good light	Good air movement	Deciduous. Winter - dryish, Summer - plenty of water and fertiliser	Winter, keep under cover
Oncidium Alliance	good light	good air movement	Moist but not wet	
Phragmipediums	good light		Summer- roots always moist. Stand in a shallow saucer of water	Winter, no saucer of water
Tolumnia	Good light	Good air movement, mature plants don't need humidity	Daily water, dry out quickly	
Cymbidium	Good/strong light	Good air movement	Moist, fertilise heavily while in growing phase	Most need cool nights in summer to flower in winter
Vanda types	Strong light	High humidity	Daily water	Warm

Which Orchids Grow Well Together?

Genus	Foot Candles	Temperature High	Temperature Low
Phalaenopsis	1000-1200	24-30	20-22
Paphiopedilum	1200-1500	24-26	16-20
Bulbophyllum	1500-2000	24-26	16-20
Catasetinae	2500-4000	24-30	13-18
Cattleya	2500-3500	24-30	12-18
Dendrobium	2500-3500	24-30	10-18
Oncidium	2500-3500	24-30	12-18
Zygopetalum	2500-3500	21-26	7-12
Cymbidiums	3500-5000	21-26	4-12
Vanda	4000-5000	28-34	22-24

Pests

Ants

Usually indicate the presence of aphids or scale on orchids. Ants feed on the honeydew that is secreted by aphids. Furthermore, they transfer scale from one plant to the other, they make nests in pots which breaks down the compost and prevent proper aeration. Ants will usually try and harvest scale and transfer it from one pot to another to build a food supply.

Treatment, ensuring pots are not overly dry and are attractive homes for insects, there are various perimeter sprays and powders for ant control, (each can be affected by environmental factors) apply a liquid solution to the pot allowing it to flush through to ensure any hidden ants are driven from the pot, also ensure that your collection is kept free of infestations of chewing insects to prevent initial attraction of ants.

Aphids

Aphids can be green, black, brown and even orange. They multiply rapidly in warm, dry weather and also attract ants with their honeydew secretions. The honeydew secretions also result in sooty mould.

Treatment depends on level of infestation, from a strong jet of water and manual removal, to the application of a contact insecticide. More serious infestations may require repeated applications of a systemic insecticide.

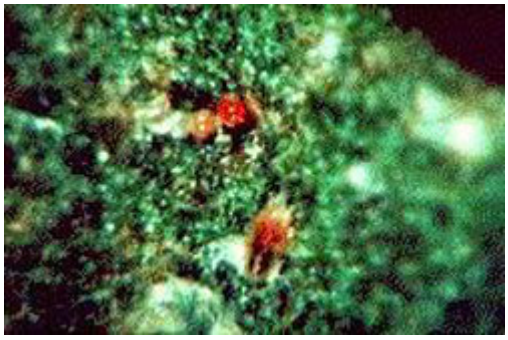
Dendrobium beetle

Chewing insects attracted to a range of different genera, at all stages will damage plants. Adults will chew on flowers and decimate a total inflorescence over night. Females lay eggs on new growths and will hatch in ten days, larvae will tunnel into new shoots and growths causing them to rot and die. The larvae pupate into a mass of waxy looking material.

Treatment, Once discovered a thorough inspection of entire collection needs to be undertaken to inspect for hidden insects. The application of systemic insecticides at regular intervals needs to be applied.

False Spider Mite (aka Flat Mite)

These are slightly smaller than red spider mites and make their presence known by the silvery coloured pitting that one can see on the top and underside of leaves.



The adults are red and flat, and about 0.25 mm long, with two pairs of short legs at the front of the body and two pairs of short legs flanking the narrow abdomen.

Treatment, it's important to know that mites are related to spiders and ticks, they are not insects, so the application of miticides is required as opposed to insecticides.

New generations of mites mature every six days, so repeat applications of chemical control will be required, three times four days apart.

Initially a less harmful treatment of a insecticidal soap spray, or horticultural oil to smother the mite population may be successful, but the entire plant must be sprayed and the mites must be covered. This needs to be repeated three times weekly.

Chemical control is achieved using a dedicated miticide applied according to directions to your plants, there has been a lot of resistance build up to a number of the more common mite controlling chemical that are available though.

Another option is biological control, with the introduction of predatory insects that will eat the mite population, correct identification of the mite type is essential to secure the correct predatory insect.

Leaf Hopper

These are tiny, white, sap-sucking flies that usually stay on the underside of leaves, flowers and especially new growth.

Treatment, the application of an insecticidal soap spray or horticultural oil initially, combined with a sticky fly trap, or the application of a chewing insect insecticide.

Leaf Miner

These little grubs that are responsible for spreading virus-related disease and destroy the leaves and stems of orchids.

Treatment, the application of an insecticidal soap spray or horticultural oil initially or the application of a chewing insect systemic insecticide.

Mealy Bugs

This is a very common orchid pest. They are little oval shaped, grey-whitish fluffy-looking insects. They belong to the sucking insects that are often encountered on the underside of leaves and new growth. They even attack the orchid flower. Like aphids they also secrete honeydew which causes sooty mould on the orchid leaves

Treatment, in small numbers manual removal with cotton buds dipped in alcohol may be an effective removal strategy, but larger infestations may require the application of a systemic insecticide according to instructions and repeated at two-week intervals to encounter each stage of growth. Ensure all the plant is sprayed including underside of leaves and axils. Very important once a colony is detected to thoroughly inspect all plants including the removal of old bracts on pseudobulbs where mealy bugs prefer to hide.

Mollusks

Snails and slugs are possibly the most common pests in this category. They favour seedlings and soft foliage plants; they even eat through root tips, flower buds and pseudobulbs of orchids. Since they are nocturnal their movements can be tracked by the silvery slimy track that they leave behind. You need to be vigilant.

Treatment, organic control can work best with these pests, lure them to feed in a saucer of beer under a lettuce leaf and then collect them in the daylight. Ash from fires or diatomaceous earth will construct a barrier, but water will erode this. Chemical control includes the use of pellets and powders placed strategically to be away from domestic pets.

Red Spider Mite

This is another common orchid pest and likes to attack Cymbidium orchids and the Lyscastes orchids. Red spider mite is hardly visible to the human eye, but evidence can be seen in the web-like film on the underside of leaves. They are sap-sucking insects and destroy leaf cells. This result in the orchid leaves yellowing and dying

Treatment, Use the same countering measures as for the false spider mite.

Rodents

Rats and mice can be very destructive as they enjoy eating the pollen of the orchid flower. They scamper up the stems to reach the pollen and thus shorten the orchid flower's life.

Treatment, the use of commercial baits, poisons and traps.

Spider Mite

Similar symptoms patterns and treatments to both Red Spider Mite and False Spider Mite.

Treatment, Use the same countering measures as for the false spider mite.

Scale insects

These come in many varieties that attack orchids. Scale insects are usually quite mobile when young while the adult scale insects tend to rest on the underside of leaves or beneath the orchid leaf sheaths, either individually or in colonies. They are basically sap-sucking insects that leave yellow patches on the orchid leaves and also secrete honeydew which result in sooty mould. Ants can also be lured by these secretions.

Treatment, Make use of a soft brush and insecticidal soap and water to remove scale. Take care not to damage leaves. You can also make use of a 50:50 solution of water and denatured alcohol. With serious infestation you might have to repeat the treatment and use systemic application of systemic insecticide at two-week intervals to encounter the crawler stage. Ensure all the plant is covered including the underside of leaves and the axils.

Thrips

These are tiny winged insects. Greyish in colour and they usually settle on the underside of leaves. They tend to chew up the orchid, scraping the orchid leaf surface for sap and thus causing scarring and discoloration.

Treatment, The use of a systemic insecticide applied according to instructions at repeated intervals to ensure all infection is controlled and no new insects have been introduced from natural flowers.

Weevils

They are hard-bodied beetles with a dull coloration. They chew into the soft tissue areas of the orchid plant. Weevil and caterpillar damage is rather similar.

Treatment, the application of systemic dust or insecticide.

Diseases

Bacterial brown spot (Acidovirax or pseudenomas)

This disease is a quick spreader and appears as a brown, watery blister on orchid leaves. It can kill orchids when the infection manages to reach the crown. The bacterial brown spot disease thrives in cold, wet conditions and develops when orchid leaves are allowed to remain wet. The most vulnerable orchid species is the Phalaenopsis orchid.

Treatment, Immediately remove the infected area with a sterilized cutting tool, and apply a quaternary ammonium compound or copper compound type bactericides (not on dendrobiums) on infected and adjacent plants. Disinfect growing area with appropriate cleaning solution. A water borne pathogen care should be taken with watering if this is present. Raise temp if possible and decrease humidity.

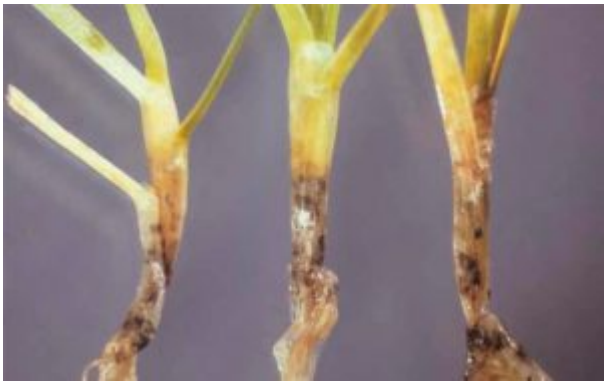
Bacterial soft, Brown rot (Erwinia spp.)

This disease manifests itself as a small brown spot on an orchid leave that grows large very quickly. Another symptom of brown rot infestation is the spice odour that infected orchids emit. Brown rot also has the ability to kill the orchid if it is allowed to reach the crown. The most vulnerable orchid species is the Paphiopedilum orchid.

Treatment, Immediately remove the infected area with a sterilized cutting tool, and apply a quaternary ammonium compound or copper compound type bactericides (not on dendrobiums) on infected and adjacent plants. Disinfect growing area with appropriate cleaning solution. This disease is spread by splashing, so if present avoid overhead watering. Keep leaves dry, increase air flow and decrease temp and humidity.

Basal rot, Fusarium wilt, Damping off

(Fusarium sp. plus others) This is a fungal disease that results in the withering of the orchid stems, especially young seedlings. Basal rot is usually a consequence of: failing to use clean pots or potting mix, overcrowding, or over-watering.



Treatment, Discard infected part of rhizome and pseudobulb if purple marking is evident. Save only unmarked portion of any plant. The application of a thiophanate-methyl containing fungicide, clean the growing area with suitable cleaning solution, continue practicing correct hygienic handling of tools between each plant.

Black rot: (Pythyium and Phythopthora)

This specific type of disease affects the whole orchid plant. It manifests its appearance by the infected area turning black and watery. Over-watering is the main cause of black rot. The most vulnerable orchid species is the Cattleya orchids.

Treatment, Unless you have a particularly valuable plant you should dispose of this, this pathogen spreads very easily from plant to plant via splashing water. If infected removed infected area with a sterilized cutting tool and apply a metalaxyl or thiophanate-methyl containing fungicide. Prevention is the best tool and you should consider a preventative application of fungicide periodically.

Fungal Root rot: (Rhizoctonia sp.)

This disease is a result of fungal infection to the orchid roots. Orchids will manifest a root rot problem by showing a decline in health and the roots will turn brown. A main cause for root rot is over-watering the orchid and decayed potting mix, and even poor aeration.

Treatment, Make use of a sterilized cutting tool to remove all dead tissue, repot the orchid in a clean pot with fresh potting soil and treat with the recommended fungicide (a metalaxyl or thiophanate-methyl containing fungicide). Most of all avoid over-watering. Clean the growing area with a suitable disinfectant.

Leaf Spotting: (Anthracnose, Cercospora Leaf Spot, Guignardia, Septoria Leaf Spot)

This is an unattractive, but benign fungus that appears as small brown spots, sometimes black spots, on orchid leaves. Most orchid species are vulnerable to this disease. Make use of a recommended fungicide and spray the orchid following the instructions closely. Provide optimal growth environment for your orchids.

Treatment, The application of a systemic fungicide to control outbreak, as well as removal of affected area with a sterilized cutting tool. The ongoing preventative application of an (alternating) systemic and contact fungicide.

Petal blight, Southern blight: (Botrytis)

This appears as very small black or light brown spots upon flowers and may enlarge and cover the entire flower. If conditions are moist a grey fungus mould may also appear.

Treatment, The application of a contact fungicide, after the removal of infected flowers. Clean growing area with a suitable cleaning solution and the application of a preventative fungicide combine with raising ambient temp where possible.

Common Viruses

Sooty Mould

This is a soft, black fungal growth (not specifically a virus) that results from the honeydew secretions of aphids, mealy bugs and scale insects on orchids. Sooty mould reduces the amount of light that should reach the leaves and results in the ultimate deterioration of the orchid.

Treatment, Wash the orchid leaves with a soapy solution or make use of a 50:50 solution of water and denatured alcohol. Try to get rid of the cause by getting rid of the pest that secretes the honeydew.

Cymbidium Mosaic

This is a very common orchid virus that appears as a dark, sunken patch or streak on orchid leaves. The plants will continue to grow, but will be lacking in vigor, and may even affect other orchids.

Treatment, There is no treatment for treating virus in orchids. Remove the plant and destroy, and thoroughly clean growing area with a suitable cleaning solution.

Tobacco mosaic and yellow bean mosaic

Symptoms of these viruses are: orchid leaves becoming mottled with irregular patches of yellow and green, the orchid flower exhibiting streaky, dark coloration. At risk most are Cymbidium orchids and Masdevallia orchids. One answer: Destroy the affected orchid.

Treatment, There is no treatment for treating virus in orchids. Remove the plant and destroy, and thoroughly clean growing area with a suitable cleaning solution.

Odontoglossum ringspot virus

This virus appears as round blemishes on orchid leaves. These blemishes are usually concentric circles and eventually affect the orchid flowers which will appear deformed. One answer: Destroy the affected orchid.

Treatment, There is no treatment for treating virus in orchids. Remove the plant and destroy, and thoroughly clean growing area with a suitable cleaning solution.

Other Types of Damage in Orchids

Oedema

Caused by plants inability to utilise the water it has been supplied, typically watering on a warm day and nights turn cool very quickly. Causing swelling and plants lesions resembling a water filled blister like appearance on plant surface.

Sunburn

Appearance of black spots and areas on leaves after overheating from excess exposure to too much light. Caused by not staging plants gradually, moving from inside to outside too fast. Leads to susceptibility to fungal and other disease attack.

Cold

Causes surface lesions with pitted large darkened areas of discoloration. Accelerated rate of natural death, and susceptible to fungal disease.

Salt toxicity

Brown leaf tips, dead roots, whitish crust build up on media and around base of pots are signs of excess salts present. Salt toxicity will eventually kill plants completely if not corrected. Dilute fertilizer strength and practice regular media and pot washout strategies.

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