

Orchid Viruses and Mites

By Dr Fred

There are a number of viruses which affect orchids in Australia. Although more commonly recognized in Cymbidiums, all species are susceptible and no orchid can be said to be immune. As there is no cure, so you must identify early and destroy the plant. All parts of the plant are infected and infectious.

Symptoms of viruses include leaf mosaics and mottling, irregular yellow patches or black or brown leaf rings. Colour breaks in flowers can also be an indication. Because the symptoms are variable and often mild to non-existent, the diagnosis is often only made late after it has spread to other plants.

Plants showing early symptoms should be isolated promptly and if in doubt, destroyed. Symptoms can sometimes be mimicked by nutritional deficiency and root damage but these causes should be fairly obvious. In contrast to senescence (aging) viruses tend to affect both new and old shoots.

Treatment is all preventative. Carefully check new plants. Space plants well apart. Be careful handling suspect plants. Treat potential insect vectors. Sterilise tools and use disposables wherever possible when repotting.

Of the 30 or so orchid viruses the common ones are:

Cymbidium mosaic virus (Cym MV)

Odontoglossum ring spot virus (ORSV)

These are the top two for pathogenicity and prevalence worldwide.

Orchid fleck virus (OFV)

Laboratory testing is available for the above three but it is relatively expensive.

The above are **all** readily transmitted from plant to plant by handling and unsterilized tools. ORSV has a very long survival in dead plant tissue so this should be disposed of promptly.

Orchid fleck virus (OFV) is in addition also transmitted by mites, particularly the false spider mite.

Polyviruses

These are other common viruses in orchid collections. They can be transmitted by tools, seeds and aphids but not by handling.

Mites

Several species of this sucking insect attack orchids, most prominently the red spider and false spider mite. They can only be seen with the hand lens but leave a tell-tale shiny surface to the undersurface of the leaves due to webs and or dead cells, often with tiny yellow spots on the upper surface. They disfigure and weaken the plant and can transmit the OFV virus. If in doubt, wipe the undersurface of the leaf with a white tissue. Red smears are diagnostic of mites.

Under warm, dry conditions mites rapidly proliferate. Keeping humidity high discourages them. Water the underside of leaves regularly in summer. In greenhouse epidemics taking the plants outside where the natural predators can get at them can help.

Predatory mites can be purchased but are not compatible with white oil and miticide use. They are slow to work and also tend to die out after the job is done.

Common insecticides have little effect on mites. Once established all of the common varieties are very difficult to eradicate with miticides and all effective miticides (eg Kelthane, Rogor) are quite toxic.

White oil and miticides should be used with care. Two treatments of the entire plant a week apart are needed to break the cycle and catch the nymphs at a susceptible stage as they hatch. Follow-up treatments are often required.

Aphids

Aphids are soft bodied, sucking insects related to scale. They can move from plant to plant as there is a winged stage. Like scale they produce honeydew which attracts ants and sooty mould. They prefer flowers, buds and new shoots. Deformed or stunted flowers is a common result. They can also transmit Polyvirus.

Household insecticides, the common pesticides and oils or even a strong water spray will do the job but two insecticide treatments a week apart are needed for eradication. The ants may also need attention.