

## Zygopetalum orchid culture for the Riverina region of NSW

This is a small group of about 16 hardy terrestrial and epiphytic orchids that come from mid elevation (1000-2000m) cool rainforests in mountainous regions of Central and South America. The largest concentration of the species is in Brazil.

They produce tall spikes of large long lasting attractive and highly fragrant flowers mostly from autumn through winter and spring. Flowers are long lasting (3-4 weeks) and also last well as cut flowers. Most racemes have 4 to 8 flowers and they can produce racemes twice per year (2). Flowers typically have green and brown petals and sepals with purple colour on their lips.

They mostly grow to a height of 40cm except for *Z. lunata* that only grows to about 10cm high (1).

They are regarded as easy to grow and suitable for both beginners and advanced growers.

Commonly grown species include *Z. mackayi*, *Z. intermedium*, *Z. crinitum* and *Z. maxillare*. Many hybrids have also been made with this genus.



*Zygopetalum* Titanic 'Marlene'  
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### Temperature requirements

They are regarded as mostly cool growing orchids, although a few, such as *Z. lindeniae*, *Z. alleniana* and *Z. lunata* are listed as warm growers and may require higher minimum temperatures (1) (2). There is some confusion about *Z. maxillare* with it being listed as both a cool and warm grower by different authors (1, 2). The remaining *Zygopetalum* species prefer cool growing conditions similar to cymbidiums but will tolerate temperatures up to 40°C for a short period if humidity is kept higher (7). Optimum temperatures for growth would be 21-26°C in the daytime during summer with a nighttime drop of 6-8°C (9, 10). They will tolerate temperatures well outside this range and a low of 8°C in winter is common in their natural environment (6). Growers report they will tolerate temperatures down to near zero but it is preferable they do not experience such low temperatures (6). Very high temperatures can cause bud drop (6). A day/night temperature difference of 6-12°C is required for flower formation. Low night temperatures are thought to increase leaf spotting (8).

Although cool growing, they appreciate protection from the cold over winter and dislike cold damp conditions that can lead to unsightly black leaf marks. They will tolerate temperatures down to freezing for short periods but must be protected from frost (5) and will not do well if subjected to prolonged periods of low temperatures. They will tolerate high temperatures for short periods without damage (5) but humidity must be kept higher under these conditions.

## Light

They require bright light as provided by 50-60% shade-cloth but no direct sun (2). This is equivalent to about 2000-3000fc but some growers say they like up to 4000fc (7). Leaves will be light yellow green when receiving adequate light (6, 7). They require less light than cymbidiums and leaves will become yellow and burn if light is too strong (3). Do not place under benches where air movement is poor. Plants will not bloom well if light is inadequate (6). Very dark green leaves indicate they are not receiving sufficient light. Provide more shade when flowers open to increase flower life (7). Older leaves often develop brown tips, this is considered normal.



If buds turn yellow and fall prior to opening this is caused by insufficient energy in the plant due to insufficient light, large temperature fluctuations, the plant is too small or root rot (8).

Decreasing day-length and light exposure initiates flower development. This can be done artificially by decreasing day-length by about 2 hours/day for 3-4 weeks (11).

## Humidity and air movement

They prefer high levels of humidity (40-80%) and very good air circulation (6, 10). Leaf tips will dry off and foliage spot if humidity is too low (1). Standing them on gravel filled trays containing water in hot weather will help to increase humidity. Overhead misting is beneficial on very hot days (7) but can also cause increased black leaf marking so under bench watering is preferred. Where humidity is high good air movement is essential to prevent black spots on the leaves (10). A fan will assist with this.

Leaf spotting can be difficult to avoid. Leaf spots often occur if leaves remain wet for too long after watering especially in winter (3). Cold damp conditions can lead to black marking of leaves. The spotting is caused by a fungus and does not appear to affect the vigour of the plants (5, 12). The spotting can be controlled with Mancozeb T but is best prevented by avoiding water on the leaves (12). Newer varieties have been selected for increased resistance to leaf spotting.

## Water

Plants should be kept uniformly moist but not over wet during the whole year with slightly less water in winter, watering just weekly or every 2 weeks, when they are less active (1, 7). Do not water in the heat of the day in hot weather (12). Allowing them to dry a little in winter aids flower formation rather than excess vegetative growth (8). In winter avoid getting water on the leaves in cold damp weather to reduce leaf spotting and preferably water on sunny days (3, 12).

In the Riverina they are best grown with some cover to prevent them becoming too wet over winter. As with most orchids, rainwater is preferred over treated water. Excess salt build up may cause leaf tips to die back and leaves to fall prematurely. Ensure pots are drenched thoroughly to prevent salt buildup (7).

## Potting medium

They prefer to be grown in deep pots to accommodate their vigorous root systems (6). They require a free draining mix of medium size bark and 20% perlite and should be repotted about every 2-3 years after flowering is finished in spring (12). They prefer a slightly acid potting mix (7). Potting mix used for Cymbidiums is suitable (13).

The 3 warm growing species referred to above are said to prefer growing on slabs rather than pots. Incidentally they are also the only Zygopetalums that don't have fragrant flowers (1).

Pot-bound orchids that have filled the pot tend to be under watered and flower less so should be repotted even if the mixture has not broken down (7).

When repotting try to keep 2-3 green bulbs and just one backbulb without leaves in each division if possible. Remove excess bulbules without leaves as they can inhibit flowering (12). Remove all dead or damaged roots as these can encourage root rot.

After repotting plants should be placed in heavier shade than normal and kept on the drier side to allow plants to recover for several weeks (7).

## Fertilizers

Plants should be fed from September to May with applications at about 14 day intervals. A weak half strength solution of balanced fertilizer can be applied alternating with seaweed fertilizer. Alternatively a slow release fertilizer can be applied in October. Changing to a potassium and phosphorus rich fertilizer during autumn is beneficial to promote better flowering (3)(5)(12).

## Zygopetalum species, hybrids and intergeneric hybrids.

A detailed list of the species and their hybrids is given in the articles by Hope (2), Milligan (4) and in the Australian Gardening Australia Flora's publications (1) and Cloudorchids.com web site (11) that are listed below.

Common intergeneric hybrids are;

- Hamelwellsara = (Aganisia x Batemannia x Otostylis x Zygopetalum x Zygosepalum),
- Propetalum = (Zygopetalum x Promenaea),
- Zygoneria = (Zygopetalum x Neogardneria).



A new intergeneric hybrid described in the *Australian Orchid Review* Vol 81(No 1) is **Bleitzara** (*Zygopetalum* Advance Australia x *Galabstia* Green Tiger) and has green petals with red marking. It is adapted to both cool and warm climates but is best grown under a solid roof. A list of some of the latest Zygopetalum hybrids summarised by Stephen Monkhouse is published in the April 2016 edition of *Orchids Australia* (Vol 28, No2).

**Other intergeneric hybrids include** (11): Batemannia (Btmna.), Colax (Clx.), Galeopetalum (Gptm.), Galeottia (Glt.), Koellensteinia (Koell.), Menadenium (Mndnm.), Mendoncella

(Mdcla.), Peristeria (Per.), Warrea (Wra.), Woodwardara (Wdwa.), Zygotolax (Zcx.), Zygotetalum (Z.), Zygotepalum (Zspm.).

### **Acknowledgements and further reading**

The information in this guide has been obtained from local growers and the references listed below.

1. Gardening Australia Flora's Orchids. ABC Books (2005).
2. The cultivation of Zygotetalums by A. Hope.  
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3. How to grow Zygotetalums. Orchids in Victoria.  
<http://www.oscov.asn.au/articles4/growzygo.html>
4. The Zygotetalum alliance by B Milligan. Orchids in Victoria.  
<http://www.oscov.asn.au/articles6/zygos.html>
5. Elanbee Orchids. Zygotetalum Culture.  
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6. Charles and Margaret Baker Orchid Culture Sheet. *Zygotetalum mackayi*.  
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13. Zygotetalum orchids. Nurseries online. <http://www.nurseriesonline.com.au/plant-index/orchids/zygotetalum-orchids/>

*Your comments and suggestions on this cultural guide are welcome.*

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