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This issue's cover

Paphiopedilum moquettianum. Grower and photographer John Edwards.
John tells us how he grows this fine species elsewhere in this issue.

Editorial

What a shocking summer much of New Zealand has had, and autumn so far has not been much better. Rain, cloud, wind, unusually low temperatures, more rain... Across 'The Ditch' many of our Aussie neighbours have not fared much better, and in many cases, even worse, with appalling flooding over large areas. Farmers on both sides of the Tasman have had difficulties too, especially with crops that have failed to ripen or have needed expensive post-harvest drying. We hope that our readers' plant collections have not been too affected by all of this. Global warming, no doubt, is responsible....

This issue concentrates on fertilisers to a significant extent, with a variety of views and practices represented. We suggest that baffled readers do not "jump on their horse and gallop off in all directions", but adopt a systematic response in feeling their way through this minefield. For instance, if you seldom water your orchids, do not adopt a heavy feeding regime. If you believe in 'weekly weakly' make sure it does actually happen weekly, or somewhere not too far removed from that. If your shadehouse is cold and heavily shaded in winter, then go easy on the fertiliser. In the end, much of it boils down to common sense. Whatever your growing conditions, we hope you find some useful

information here. And on a sadder note, three obituaries are included, two for botanists with an abiding interest in orchids, another for a highly respected grower.

Obituaries

James Bruce Irwin

James Bruce Irwin – 17.11.1921 – 4.01.2112.

Bruce Irwin who died in Tauranga aged 90, was regarded as one of this country's greatest botanical illustrators of native orchids and had the honour of having two named for him. Bruce was born in Wanganui, where his Irish Father was a men's outfitter and tailor. As a young teenager Bruce liked nothing better than to head off on his bicycle looking for native orchids to draw, something that was to become a life-long and all-consuming 'hobby' that included almost 12 years labour on 'The Oxford Book of New Zealand Plants', still considered a landmark publication 34 years later.

After leaving Wanganui Technical College, Bruce trained as a draughtsman with the Department of Lands and Survey in New Plymouth and relished the proximity of Mt Taranaki and its native orchids. He was called up for pilot training late in WWII, going on to serve in Japan with J Force after the war. After a stint with Lands and Survey in Wellington, Bruce bought a holiday camp in Marlborough Sounds and it was there he met renowned botanist Dr Lucy Moore, who gave him a microscope. 'I couldn't see the detail of the plant and understand how it worked' he recalled. 'I didn't intend to become interested in botany, it just happened'

In 1967 Bruce became artist in charge of the art department at Otago University's Medical School, a job he described as 'the best in the world because he could get into the hills for days at a time' thus allowing him to work on 'The Oxford Book of New Zealand Plants'. A life member of the NZ Native Orchid Group, Bruce moved to Tauranga in 1981, joining the BOP Orchid Society and becoming a foundation member of the Tauranga Orchid Society of which he became a Life Member in 1994. He designed and helped build Tauranga's winning display stands for the National Shows from 1985 to 2010. He was one of 'The Gang of Four' who originally established the orchid gardens at the Te Puna Quarry Park. He had also been involved with the Iwitahi Trust's work in Taupo for many years.

In 1997 Bruce was awarded the John Easton Award by the Hawkes Bay Society.

In 2000, he was awarded the Allan Mere by the New Zealand Botanical Society, presented to an 'outstanding botanist' and in 2007 a coffee-table book, 'Bruce Irwin's Drawings of New Zealand Orchids,' was published by the Native Orchid Group. He was well known for his production of home brew (sometimes of dubious quality) and his scary driving. (Bruce was always watching out for interesting plants, well away from the road). Bruce is survived by a son, daughter & five granddaughters.

Patricia Elms

2012 started on a very sad note as we acknowledge the passing of Patricia Elms on New Years Day, when on holiday with Ken in South Africa. Patricia was deeply involved in orchids over many years with growing, judging and administration and many other aspects, giving her time and knowledge freely all around the country. As just one example, she was heavily involved in the planning and administration of the International Orchid Expo held in Palmerston North in 2010 – many of our readers would have attended that show. For a long time Pat (also known as Trish) was the proprietor of Tudor Orchids, who supplied many fine plants to many growers. Our thoughts and sympathy are with Ken and the family at this sad time.

Dr. Carl Withner

Professor Carl L. Withner has died in Bellingham, Washington, USA on 8 February 2012, at the age of 93. For many years he taught botany and biology at Brooklyn College, New York, and retired as Professor Emeritus. He developed an interest in orchids from an early age and curated the Brooklyn Botanic Garden and New York Botanic Gardens' orchid collections from 1948-75 and 75-79

respectively. He was known to many orchid enthusiasts due to his numerous publications, including the editing of a number of major scientific books on orchid such as *The Orchids, A Scientific Survey* and *The Orchids, Scientific Studies*. He also wrote the major work *The Cattleyas and their Relatives*, published in 6 Parts. He carried out much scientific work on orchids, including major work on the technique of green pod culture. Carl was made an honorary life member of the American Orchid Society. His published legacy covers a third of the time that orchids have been in cultivation and his careful research will remain an enduring legacy.

Growing orchids, my way.

Theo Verryt (tjverryt@xtra.co.nz)

In the 45 years I've grown orchids many things have changed, mixes, sprays, growing conditions, but mostly potting mixes. I'm not going to say to you what you should do, but this is the way I do it. In my main growing house, which is a commercial tunnel type house 10 x 10 meters and is 3 m to the bottom of the arch, rising another 2 m, with sides that can be rolled up 3 m to give air movement and ventilation to cool it. During summer these are open on both sides most of the time, in winter the south side remains closed and the east side rolled up halfway more or less depending on the temperature that is expected during the day, it is rolled down about 3 o'clock, this is all done manually. There are three hot beds that I grow some smaller heat-requiring plants on in winter. These also help to keep up the temperature, the range is 2° C at night in winter rising to 30° C during most sunny days. It has other tropical and subtropical climbers, bromeliads, palms, ferns and philodendrons that add to the moist humid atmosphere that exist in the microclimates where most of the orchids grow.

In this house I grow most of my odd genera that need warmth, and some of my smaller cymbidiums. There are three other tunnel type houses about 5m x10m that hold mostly cymbidiums and Australian natives. These are covered with 12 -1/2 % shade cloth. In winter this is covered with plastic to protect the plants and flower spikes from rain & frosts.

In all these houses there are skinks, ladybirds, katydids and predatory mites that prey on red mite, aphids and other pest that want to make a hearty meal out of our plants. If we fill the air with poisonous sprays we kill these good insects along with the bad, and maybe make yourself ill as well.

It is also known that anything with hard waxy leaves like Cattleyas Vandas and Cymbidiums don't take in systemic sprays, or fertilizers very well through their leaves, but they can very well through the roots. Many years ago Andy Easton recommended using Rogor [a systemic spray] and watering it into the pots every 6 to 8 weeks. I use PERFECTHION [a similar brand name] diluted to the makers recommendation with a surfactant or spreader to help the roots to absorb the spray. You could use CONFIDOR or another systemic spray like ATTACK. (Untried by me.)

The best is to water one day and pour some spray mix into the pot the next day. I use a small electric powered sprayer with a long wand with the spraying nozzle removed, or if I'm doing a small quantity I use a plastic watering can with the rose removed. Giving each plant a squirt into the pot. This way I'm not filling the air with fine spray particles that drift around. We still have to be careful that there are no splashes to any exposed skin. Always wear gumboots and full wet weather gear waterproof gloves and goggles especially when mixing the spray, they will kill most insects but can also make you very ill. This will also get rid of those pesky ants and slaters that live in the pots, they can spread diseases by going from pot to pot

During autumn and winter there is a prevalence of bulb rot, it's a form of blight so any sprays you use on potatoes could be used. I use a substance called Foli-R-Fos [Available from Fruitfed]* it stimulates the plants immune system, I've used it for 7 years and swear by it, it can be added to PERFECTHION and watered into the pot, it's also good to prevent or cure some root rot diseases. I start doing this in March and every 6 weeks during the winter. Air movement is also very necessary to prevent infection

For established bulb rot recommended prays are CHLOROTEC, RIDOMIL, or COPPER OXYCLORIDE sprayed onto the plants at the recommended rates. Also use Foli-R-Fos, watered into the pot

Potting. The bark used is always soaked in water with lime and high nitrogen liquid fertilizer for 3 to 6 days. In a 10 litre Bucket filled with bark I add:

100 ml garden lime

100 ml dolomite lime

10 ml high-nitrogen liquid fertilizer.

And topped up with water.

This pH adjusted bark gives the plants off to a good start.

I find that using the smallest pot that will fit the roots, gets the plants off to a better start as the roots always seem to go to the outside of the pot. I keep the small plants to the side of the pot. Always replot the plant with new mix if possible, as potting on means the mix in the centre of the pot has usually started to break down, resulting in trouble later on. Always replot any new plants you buy into your own mix. I add shell at the rate of 1 big cupful to a 10 litre bucket of bark. This keeps the pH in the pot at about 6 to 7 which is what most orchids prefer, it also helps to stop the bark from breaking down I always mix some coarse shell into the bottom 1/3 of the pot for extra drainage. The shell comes from the local landscape yard.

To fertilize I use a 9 month slow fertilizer called NUTRICOTE TOTAL it has an N.P.K. of 13 - 5.7 - 10.8 plus trace elements; these according to recent articles, are the right combination for cymbidiums and therefore most other plants in a greater or lesser degree/ This is used on most of my plants, varying the amount to suit the heavy feeders and less for the more tender types. I have used Nutricote successfully for about 30 years

For the heavy feeders the recommended rates are

75 ml pot 1 gram

200 ml pot 12 grams

100ml pot 2grams

240 ml pot 15 grams

120ml pot 4 grams

300 ml pot 20 grams

150ml pot 8 grams

1 level teaspoon is 4.5grams approximately

1 level dessertspoon is 9 grams approx.

1 level tablespoon is 14 grams approx.

This is used for cymbidiums

Use less for other types

This is usually put on top of the pot and shaken down into the mix or topped up with some new mix After repotting or dividing I always use RADIFARM liquid fertilizer at the weak rate of 2.5 ml per litre and pour it into the pot, it is a root promoter and helps the plant overcome transplanting stress, this can be used again 2 weeks later.

When I water I always water twice, I go along 3 or 3 rows of plants then go back and water them again, the Nutricote is usually on top of the pot, so when you water it goes through the pot and if you water again it flushes out the salts.

If you're worried about when to water, pick up the pot, if you do this often enough you will know the feel of a wet pot and a dry pot. If you're not sure - don't water. I've killed more plants by over-watering than not watering, especially in winter.

* For the scientifically inclined, Foli-R-Fos is a mixture of mono- and di-potassium salts of phosphorous acid. Phosphorous acid is a somewhat reduced (i.e. less oxidised) compound of phosphorus, which has fungicidal properties, being particularly effective on *Phytophthora* and *Pythium*. It also acts as a source of phosphorus i.e. it does double duty as a fertiliser. It lacks significant mammalian acute toxicity but handle it with care, as with any pesticide! *Editors.*

FERTILISERS SPECIAL

Applying Fertilizers

Jim Brydie (jimbydie@bigpond.com)

Despite a great deal of scientific research over the years, two of the most frequent questions among orchid growers are how much fertilizer do you use and how often. We assume, and rightly so, that a good grower's success is at least partially due to their orchid feeding program.

Why is this so? You would think that by 2012 it would all be black and white. That a fertilizer program for orchids would be a simple procedural recipe followed exactly by all growers. That as a result of scientific research all commercial fertilizers would be complete with all plant requirements and perfectly balanced and that all we would have to do is follow the label.

What's that you say? It isn't as simple as all that? What about all the variables because of the diversity of orchids as a plant family? And what about considerations such as the various potting media used, local climate, watering patterns, shade and air movement characteristics, local water quality, etc etc. Yes I say. There are those considerations but you know, the commonalities outweigh the differences 100 to 1.

Back in September 1984 the Australian Orchid Review (AOR) published a research paper on Orchid fertilizer programs by W.(Bill) Johnson. This is the paper which among other things recommended a program based on Hortico's Aquasol, rebalanced by the addition of Epsom salts (to add magnesium) and chelated iron. It was based on scientific growing trials conducted in Victoria but also used the findings of orchid nutrition research by two scientists (Poole and Seeley) at Cornell University in the USA.

Full copies of the AOR article can be made available to members on request but that paper is now over 20 years old. The essence of his findings are as relevant today as when they were first published but manufacturers have most likely updated commercial fertilizer content by now. In addition, some of the fertilizer brands we use today were not on the market 20 years ago and thus were not part of Johnson's trials of commercial fertilizers. Anyone deciding to follow the program strictly should first investigate the product they intend to use and its exact content.

Anyway, there are a number of Bill Johnson's important findings that I think we should note well and that I would like to repeat here. Namely:

- Optimum growth depends on the correct balance of the major elements Nitrogen (N), Phosphorus (P), Potassium (K), Magnesium (Mg)
- Despite differences between plants, the chemical elements required by plants are basically the same no matter what the plant.
- ALL orchids should be fed regularly with dilute soluble fertilizer while in growth. (In the trials, Johnson fertilized the plants continually every 5 days).
- Johnson recommended two different concentration rates of fertilizer depending on the type of orchids involved. One was about half the dilution rate recommended by the fertilizer manufacturer, the other about one third.
- Johnson made the simple but fundamental statement: "It is profoundly obvious that no orchid will grow if its roots are imperfect or dead". As a result, the first part of the trial studied and developed a compost that would produce perfect healthy roots so that the nutrition trials accurately measured only the differences in nutrition. (*Note: some of the components he recommends would be hard to find today. Key points made were that the compost must be open and aerated and must not contain fine materials. In particular, "no sand or peat moss".*)

In summary, what we can still take from Bill Johnson's professional and thorough trials is that you should feed and feed regularly with a balanced fertilizer. Liquid fertilizers at half strength are safe and close to optimal.

If you only have a few orchids you can apply liquid fertilizer with a watering can but many orchid growers, like myself, use a device called a proportioner. A proportioner connects in line with your hose near the tap and has a siphon line at the side that sucks fertilizer concentrate out of a bucket at the rate of about 20 to 1 to mix with the water flowing through the hose.

When you buy a proportioner I recommend that you first test the mix rate as it can vary with the manufacturer and with the water pressure at your place. It may also be affected if you use a particularly long hose. I have two proportioners. The one in the glasshouse is about 20 to 1 and the one in the shadehouse is about 15 to 1. The rate is very important to calculate the amount of fertilizer you put in the bucket.

Just to give you a rough idea of the quantities involved, it takes me about 30 to 45 minutes to water/fertilize my shadehouse with the hose and a proportioner. In this time the proportioner will suck up somewhere around 40 litres of fertilizer concentrate (a plastic garbage bin full). This quantity of concentrate represents roughly 200 grams of Peters Excell dry powder fertilizer which equates to about a yoghurt cup full.

For those using smaller quantities, there is often confusion over "teaspoonsful", grams (g), and millilitres (ml). Unfortunately the standard kitchen teaspoon is thing of the past and its size can no longer be relied upon. It is definitely worth buying a set of cheap plastic kitchen measuring spoons marked in exact ml sizes. 1 ml of water weighs 1 gm but powders often weigh less. For conversion I recommend using 15ml volume to equal 20 g.

What You Need To Know About A Gram Of Fertiliser

Jim Brydie (jimbrydie@bigpond.com)

Important Issue Number 1 : 1 ml is not 1 gram

Fertiliser manufacturers generally publish their recommended usage rates in grams of fertiliser per litre of water but very few growers have a facility for actually weighing out the fertiliser concentrate. Most use a volumetric measure such as a teaspoon and assume that 1ml is equivalent to 1 gram, as is the case for water. Surprisingly however, various dry fertiliser powders vary dramatically from this equivalent. Some are heavier than water, others such as Aquasol are significantly lighter than water. Many fertiliser packs include a measuring spoon which I presume takes into account the volume weight of that particular fertiliser. **This means however, that an Aquasol measuring spoon marked 5 grams can *not necessarily* be used to measure 5 grams of any other dry fertiliser unless you happen to know it has the same weight/volume ratio.**

THESE DIFFERENCES ARE SIGNIFICANT AND SHOULD NOT BE IGNORED. For example, Peters Excel (as formulated in 2006) was nearly twice the relative weight of Aquasol, so if you used a 5 ml measure for each, you would be applying nearly twice as many grams of Excel than Aquasol. With my friend Chris Wilson's help, we have accurately weighed fixed volumes of some of the most common fertilisers you might encounter, and these are published in the table below. For other fertilisers, be very careful to read the instructions on the pack and use the measuring spoon provided if there is one.

Important Issue number 2 : Comparing Total Dissolved Solids (TDS) Readings

When fertiliser salts are dissolved in water they form electrically conductive ions. The more concentrated the fertiliser solution the more readily it conducts electricity, and thus the higher TDS reading.

Unfortunately, not all salts conduct an electric current equally. Ammonium sulphate solutions, for example, conduct electricity twice as well as calcium nitrate and more than three times that of magnesium sulphate solutions (Resh, 1989). Further, a few fertiliser components do not ionise and

their presence is therefore not measured by the meter. The most significant of these is urea which is a common component in many fertilisers. Urea provides nitrogen as it is gradually broken down by bacteria in the pot or soil.

Although these factors mean that the measurements you take with a TDS meter should not be taken absolutely literally, an electrical conductivity meter such a TDS meter is still an invaluable tool for comparing the relative concentrations of fertilizers and for accurately communicating usage rates with other growers.

Important Issue number 3 : What fertiliser concentration to use?

Unfortunately there is no clear answer to this question. Some orchids do better with higher fertiliser rates than others but in general, the simplest recommendation is still to use weak (half strength?) soluble fertiliser on a regular basis. The problem of course, is that ½ strength of one fertiliser will be much stronger than ½ strength of another.

The TDS meter reading gives us a way of comparing application strengths mathematically. I have found that most orchids grow very well with regular application of Peters Excel at very low rates of about 300 parts per million although some, such as Cymbidiums and Vandas, would no doubt do better with something more like 1000 ppm.

The table below shows our test TDS readings (in parts per million) for a number of common fertilisers. When using these readings some allowance needs to be made for fertilisers that are high in urea. For example, if a fertiliser is 20% urea, I would add 20% to the TDS reading below. Check the fertiliser packet for the urea content.

Table 1. Field TDS test readings

Fertiliser Brand/Product (ppm)	5mls = ? gms	Manuf's recommended rate	TDS reading
Peters Excel / Cal/Mag Hi K (No urea)	5.79 gms	1 gram per litre of water	760
Peters Blossom Booster	?	1 gm per litre of water	(per brochure) 690
Aquasol	3.25 gms	4 grams per 5 litres of water	490
Thrive General Purpose	3.33 gms	8 gms per 4.5 litres of water	630
Thrive Flower and Fruit	4.54 gms	8 gms per 4.5 litres of water	1740
Campbells Yellow	4.83 gms	3 grams per litre of water	1640
Garden Party	liquid	3 mls per litre of water	470
Phostrogen	?	5 mls per 10 litres of water	840
Fish Emulsion	liquid	5 mls per 1 litre of water	545
African Violet Delight	liquid	10 mls per litre of water	910

Note that this article is written for Australian conditions, and *some* fertiliser brands mentioned may not be widely available in NZ. Do your homework... *Editors.*

About fertilisers.

John Campbell (campbelljohn@xtra.co.nz)

The subject of fertilisers for orchids always creates interesting discussion and there are probably as many plans for fertiliser use as there are orchid growers. At this point, I hark back to my orchid houses at Prebbleton and Halswell, some 10 to 20 years back. At Prebbleton, I kept a collection of birds, mostly canaries. Anyone who keeps birds will know that they usually have a favourite night perching place. Unlike we humans who have to get up in the night, the birds just let fly at will to relieve themselves. This gives rise to little piles of fertiliser accumulating beneath their perches. I used to collect these little parcels of nutrients, soak them in water for a while, then strain the water through a nylon stocking. I had an overhead watering system which was pumped from a 40gallon tank, and I would add the "birdy water" to this and it would be evenly distributed round the collection. Could you get a more natural system of fertilising orchids than this?

This system was also used for a variety of proprietary fertilizers as well. Anyone who saw my collection away back in those days, would tell you that I did grow orchids very well. Also back in those distant days, there was a lot of writing and talk about growing orchids in horse manure. I tried this on a small group of plants with disastrous results. The manure just turned into a slimy mess and rotted the plant roots. At the time I was also using horse manure "tea", on my vegetable garden with great results and I thought why not try it on the orchids too. The birds only produced a small supply of fertiliser, but as I did some part time work at a racing stable, I had access to unlimited horse manure.

I did in fact get paid for cleaning out the stables and took the by-product home with me. I used to hang the manure in a nylon laundry bag immersed in water and use the "tea" in my overhead watering system perhaps a couple of times a week. I carried on this practice when I moved to Halswell and the orchids grew very well there also and even today on a much smaller collection I continue the practice. I would advise erring on the weaker side when using any fertiliser. The old adage of "weakly / weekly is very good advice. Orchids in their natural state get a tiny amount of fertiliser daily and if we could afford the time, our plants would probably benefit from this.

Back in the 1970s when I started growing orchids, some growers here in Christchurch were using wood shavings and sawdust from poultry farms as a potting medium for Cymbidiums, and they grew very well. Of later years, some growers here used pelletised hen manure with considerable success. I would expect fowl manure could be used as a liquid fertiliser in the same manner as described above.

Footnote:

I grew up on 'weakly weekly' but for the past couple of years have used as instructed, and all orchids happy, larger and flowering. Melanie from Christchurch (lenb@actrix.co.nz).

Feeding your plants.

Biddy Hair (cbhair@xtra.co.nz)

(This article was originally written for the newsletter of the Wanganui African Violet and Gesneriad Club, but is quite relevant to the growing of other plants, orchids included. And Biddy grows good orchids as well as good gesneriads! Ed.)

The following comments are from personal experience, some I received, and others taken from a variety of sources. What seems to have come through is that everyone has their own favourites and some of the fertilisers people are using are not still available. Some of the advice contradicts others so much depends on your growing conditions, temperature control and light.

N P K: Nitrogen is required for healthy overall growth and development of green leaves and stems. An excess can depress flower formation. Phosphorus aids in the production of healthy roots and the formation of flowers. Potassium plays a part in the general health and strength of the plant. It gives vigour and helps with disease resistance. Trace elements are also present in smaller quantities and necessary for strong healthy plant growth.

Flowers are a bonus, the reward, from a healthy well grown plant so use a balanced fertiliser to get strong initial growth on young plants before trying to boost flowering. Healthy well grown plants are less susceptible to disease.

African Violets do not have a natural dormancy period so given sufficient light, warmth and food they should continue to grow and flower throughout the year.

You can definitely over fertilise and burn your plants. Try anything new on only a few plants at a time and always use fertilisers at their recommended strength or weaker.

Fertiliser burn. Excess fertiliser not able to be used by the roots creeps up the stem of the plant into the centre leaves. The leaves become stained looking with a dark "tide mark" and if left will go soft and die. You may also notice crystals forming on the stems or on the rim of the pot. Remove the crystals, flush the pot and plant with plain tepid water (not cold) and re-pot as soon as possible. Don't fertilise for a few weeks and then only at half normal strength until the plant's root system has recovered and it starts to grow new leaves.

Flush your plants with plain tepid water occasionally to remove salts build up and re-pot regularly.

Avoid fertilisers in which the nitrogen sources are predominately urea* based. Bacteria are needed to convert urea into a nitrogen form that the plants can use.

Check the breakdown of the nitrogen content on the fertiliser analysis. Soil less mixes have no, or are low in, all forms of bacteria, so it is better to feed newly potted plants with fertilisers which have a good percentage of nitrate nitrogen, rather than urea*.

Foliar feeding should be done in good light and warm conditions in conjunction with root feeding. Use a very weak strength and avoid getting excessive moisture in the centre of the plant.

Suitable fertilisers for a constant feeding programme will have the approximate total of their primary elements equalling less than 25. eg 7-9-5 or 8-7-6- etc. Anything exceeding this amount is not necessary nor is it required to grow good gesneriads.

Constant feeding requires that a dilute fertiliser solution be used each time the plants are watered. Diluted to proportions considerably less than that recommended on the label.

Some fertilisers can increase the acidity of the mix but regular repotting should prevent this happening.

Never fertilise a dry plant.

Variegated plants require a high nitrogen fertiliser when young to produce growth but a lower nitrogen one later on to produce variegation.

Organic fertilisers can be used as a boost to the normal feeding programme during the growing season. Some have a really strong smell for a while.

A "bloom boost" fertiliser containing a higher amount of phosphorous can be used for a few weeks to stimulate bud formation before reverting to a more balanced formula.

*** A note on urea.** Urea is an organic compound of nitrogen with the chemical formula $\text{CO}(\text{NH}_2)_2$. It is the major nitrogen-containing compound in the urine of mammals (humans included). Urea uptake by, and transport in plants is not well understood but it is believed that it cannot be directly taken up by many plants and requires bacterial conversion to inorganic forms of nitrogen (such as nitrate or ammonium) before plants can use it. A growing medium such as pine bark may be relatively lacking in the micro-organisms that carry out such transformations, so much of the urea applied to (for example) an orchid growing in a bark-based medium might simply run right through the bark and flow through out the drainage holes of the pot. Urea is cheaply synthesized from natural gas, for example in the ammonia-urea plant in Taranaki. As a result, many of the major fertiliser mixes sold in garden centres currently have a large proportion of their nitrogen present as urea, which may just run to waste in some circumstances. **READ THE LABEL.** *Editors.*

Fertilizing orchids, another way!

Mike Davison (davison@farmside.co.nz)

For years I used Norm Porter's fertilizer mixes, and for measurement the over-, or under-, use of a spoon. A hose, using a dispenser that sucked the liquid fertilizer out of a bucket, dispensed water and fertilizer at variable strengths, depending on whether the dispenser was clear, partially blocked, or totally blocked with a grain of sand. And the plants grew. Sometime around 2005 I was given a number of the minor fertilizer compounds (Boric acid, Copper sulphate, Sodium molybdate, Zinc sulphate, and Manganese sulphate), and this prompted me to think about orchid fertilizer makeup. Way back in the eons of time I made a note that, for a start, Cymbidiums required the following parts per million (ppm); Nitrogen 100 ppm, Phosphorus 20 ppm, potassium 75 ppm, Magnesium 25 ppm, Iron 50 – 200 ppm, Calcium 50 – 200 ppm, Sulphur 10 ppm, Manganese 1 ppm, Copper 0.025 ppm, Zinc 0.2 ppm, Boron 0.025 ppm, Molybdenum (plus, of course, the gases in the air).

A later note suggested that cattleyas need half the nitrogen and a bit more magnesium.

Distant memories of chemistry, chemicals, atomic weights, and mathematics had to be awakened to prepare a table, on the computer, using the commonly available chemicals to build up a fertilizer mix that met the above cymbidium needs. A trip to Otaki Hydroponics and I was in business. OK for a while but weighing out small quantities of chemicals proved a pain, so I abandoned the idea and reverted back to Norm's fertilizers, and the spoon, but this time with a cf meter.

And then I moved to Te Kuiti...

Initially I took 20 kgs of Norm's fertilizer, and when that was used up I fiddled around with one or two other commercial blends but a) they were sold in small quantities, and b) they were expensive.

At the last Palmerston North show I talked to a fertilizer rep and he suggested making up 20 litre quantities of stock solutions; the calcium nitrate in a separate container to avoid any reaction with the other chemicals. This started me thinking about making up my own fertilizer again. A trip to Wellington, and Otaki Hydroponics on the way home, resulted in my workshop looking like a chemical store. The retail cost of ten kilos of most chemicals is about the same price as a 25kg at commercial prices; hence 25kg bags of Calcium Nitrate, Ammonium Nitrate, Potassium Nitrate, and Mono Potassium Phosphate, Magnesium Sulphate, and Chelated Iron, enough for 5 or more years, reside at my place.

During a visit to Russell Hutton he commented that he warmed the water used in his greenhouses, and that had a noticeable positive effect on the growth, especially during winter. So, having room in my greenhouse, I purloined three 200 litre barrels, connected them up with siphons, and dropped a submersible pump into one barrel. Fortunately, the output from the pump was ok for watering directly with a hose. Fertilizer is tipped into each of the barrels before filling with water. In a couple of days the water is up greenhouse temperature, 15°C, and ready for use.

I now use a Bluelab Truncheon to measure cf strength and aim for about 6; my water reads a CF (Conductivity Factor) of 2 due to its passage through underground limestone tunnels before pouring out of a hillside (ph about 7.5). As I am in the early stages of trialling a new fertilizer system I have several plastic containers around the greenhouse which I fill up as I water. Later I check the CF in each container to see how well the fertilizer is mixed in the barrels.

With winter coming on the need for fertilizer is greatly reduced, and the need for nitrogen almost non-existent to the extent that by June/July I will use water alone. More heat, more light and more water and fertilizer in August to start another growing season.

To date I have not bothered using plain water to flush excess chemicals out of the bark mix, because the fertilizer strength is so weak, and I try to repot regularly.

Foliar feeding of orchids

Mike Hitchcock (mlh001@bigpond.net.au)

One of the dominant questions asked by new growers at any Orchid Society relates to the method and frequency of orchid feeding. In response the lecturer will tell beginners about the types of fertiliser available and suggest a structured delivery method of fertilising. The answer more often than not will focus on the delivery of nutrients to the orchid's root system and possibly how the nutrients are taken up and used by the plant. Rarely, the lecturer will also mention that a supplementary method of fertilising is available. That method is: *Foliar Feeding* (FF).

I believe that FF is quite commonly not discussed because it is either not understood or accepted by orchid growers as a legitimate approach.

If we Google 'Foliar Feeding' on the internet we will be rewarded with more than 700,000 references (not all relating to orchids). Let me assure you that I did not read all 700,000+ but in the first several hundred did find sufficient information to enable me to form an educated opinion on FF. A majority of the references seemed to derive from either articles or from descriptions of proprietary fertiliser products on the market both here in Australia or elsewhere in the world.

At this point let me say that I am a firm believer in the results of FF. For my collection I use 'In-Line Feeders' from the Orchid Tray Company (OTC) as my principal method of fertiliser delivery. In-Line Feeders use 'Magamp' as a slow release fertiliser activated by water and these are installed both on my hoses and as fixed attachments in both a watering and a timed misting system. Each and every time I water my plants they are fertilised in small amounts. Mostly I use my misting system as an alternative to watering with either hose or sprinkler. As a consequence I have healthy green plants that often provide me with a spectacular increase in growth year on year. This is my method of FF. I must add that I also regularly apply Peters Excel Calmag Finisher all year round.

Why FF works I do not know and in a search for detail of why it works I seem to have been reading for months. After my research I concluded that there are relatively few articles that target the 'why' or 'how'. Articles on fertilising mostly cover the topic of root feeding and almost as an afterthought suggest that FF is also beneficial.

Most articles state unequivocally that fertiliser is absorbed through *Stomata* in the leaf surface. Stomata is a word that is derived from the Greek word for 'mouth' and describes small openings in the leaf surface through which the plant takes in Carbon Dioxide and in turn emits both Oxygen and water vapour as the by-product of photosynthesis.

Further reading tells us that whilst there are many stomata on the underside of most leaves (20,000+ per square centimetre) there are relatively few on the uppermost surface or on plant stems where foliar sprays are mostly deposited. We are also informed that stomata open each day with daylight as a prompt and close at night with the darkness. As well we are also told that stomata close if it is too hot, it is too wet, are attacked by pathogens, or it is too windy.

For these reasons we should now have some doubt as to the efficacy of FF if stomata close at a minimum half the time and are arbitrarily open the remainder. If there is some doubt about

stomata being the entry point for fertiliser then there must be an alternative way of getting the nutrients into the plants?

Fortunately Biologists and Botanists do not subscribe to these Googled sources for their knowledge and the “folklore, fairytales and legends” that abound in the orchid world carries no weight whatsoever with rational scientists. In response to the question: can plants absorb nutrients through their leaves to bypass nutrient uptake through the root system?, H.B. Tukey & S.H. Wittwer from Michigan State University, USA sprayed plants with radioactive potassium (K) and phosphorus (P) and then with a Geiger counter measured the absorption, movement and utilisation of these nutrients within the plant. They found that the nutrients moved at a rate of about 0.3 m/hr to all parts of the plants. Apparently this is a very fast rate.

Tukey & Wittwer explained that leaves also have transcuticular pores (i.e. pores between cell structures) as well as stomata through which nutrient sprays can enter the plant. The transcuticular pores are on both the upper and lower surfaces of leaves, are open all the time and are found in far greater abundance than stomata. So they believed foliar-applied nutrients primarily enter through these small pores that exist not only on leaves but on all external parts of the plant.

I earlier indicated that I firmly believed in FF and I now feel that I have a clear understanding of a plant’s ability to take up nutrients through a means other than its roots. However, I find that there are now other questions that come to mind. For example:

- Do wetting agents improve the efficacy of foliar feeding?

Yes, it is always a good idea to add a wetter/sticker to the spray to help spread the product so that it is absorbed more efficiently. A very fine sprayer such as a mister or ‘FLIT’ sprayer from the Orchid Tray Company aids in getting the nutrients onto all above ground surfaces with an electrostatic type effect. Fulvic acid should ideally be included with every foliar spray as it has been shown to sensitise the cell membrane to foster a 30% increase in nutrient uptake.

- Is foliar fertilising just for “touch ups” or can more profound responses be achieved?

Foliar fertilising is perfect for bypassing soil-based lockups to address trace element deficiencies very effectively. However, it can also be used to deliver major elements with poor mobility, like calcium, directly into the plant.

- Can foliar application of nutrients replace media application?

The jury is still out on this one as there is some citrus research from California which suggests this is possible. However, from a potting media perspective, mineral balance in the growing medium is critical, particularly the calcium to magnesium ratio which determines the entry of all-important oxygen into the medium.

- Does foliar application have secondary effects?

Foliar applications can have important secondary benefits. When nutrients are provided to foliage it causes the plants to exude more sugars and other compounds into the root zone. This increases microbial activity around the root zone, which in turn enhances the uptake of nutrients by the plant from the medium.

- Do ‘non-soil’ growing systems have any special needs for foliar feeding?

In growing systems without soil, such as those that we use for orchids, nutrient interactions can occur within the root zone that makes it difficult for plants to absorb certain minerals due to binding and antagonism between the nutrients. Therefore, orchid growing can have a special need for foliar feeding.

I am all for Foliar Feeding. How about you?

Some links on fertilising:

Dave Kirk (esprit@slingshot.co.nz)

Pertaining to the current theme regarding fertilisation/nutrition of orchids, etc, I include reference to a site I found interesting:

(Beware; content-rich!) :-)

Introduction:

<http://www.grow-orchid-grow.com/Grow-Orchid-Grow.html>

Some background:

http://www.grow-orchid-grow.com/Science_Corner/Science_Corner_Discovery.html

More detail:

http://www.grow-orchid-grow.com/Science_Corner/Chemistry_Behind_3-Level_Fertilizer.html

The Patent itself:

http://www.grow-orchid-grow.com/Business_Corner/3-level_fertilizer_patent/3-level_patent.html

Regards

Dave Kirk (esprit@slingshot.co.nz)

Fertiliser (and watering); what a can of worms this topic will open!
Andrew Foster in Melbourne (gfos1111@bigpond.net.au).

We have all heard that we should use fertilisers at half strength!

Most of us have also been advised either verbally or through various articles to fertilise weekly, weakly!

I think these are “old wives tales”, before specialised orchid fertilisers were available!

Look at the growing cycle and natural distribution of your orchids. What is their natural habitat?

Temperature (affected by altitude etc.), moisture (do they require a dry period?)

I have found that “Botanica’s Pocket Orchids” is an excellent resource in this respect.

If sold out in your area, it is available at Amazon.com

We are attempting to imitate their growing cycle.

We all have our “favourite” fertiliser/fertilisers. Some are specific to plant growth and/or flowering cycles.

They can come in tablet, granular, powdered, encapsulated (slow release) or liquid forms. All of these fertilisers contain various percentages of NPK, plus additional trace elements. In Australia, Manutec have tablet spikes. These last around 3 months, giving a slow release of fertiliser with each watering. Unlike the slow release granulated pellets, they do not “suddenly” break down during extremes of heat, this can result in an “overdose”, causing root burn. I use these as a supplementary fertiliser, on my cymbidiums and natives, and also incorporate 9 month slow release fertiliser, mixed into my potting mix when re-potting. It works for me. I am a lazy grower regarding my Orchids due to the hours I work. There is also a granular system which connects to your hose, delivering a fixed amount of fertiliser each time you water. Although I have heard good reports on this system, I do not use it.

Except for the seaweed/fish type liquid fertilisers, I only use powdered or slow release on the balance of my collection, which is quite varied. To me, liquid fertilisers contain water; they are diluted powdered fertiliser, so why pay for the water?

Suggestions have been made that slow release (encapsulated) fertilisers should not be used with the Cattleya alliance. As well as some “blood and bone”, I always add 6-8 granules into my potting mix, without any problems.

The main problem with the slow release encapsulated granules occurs during extreme heat (C35°+), where the protective “outer skin” can burst, and over dose your plants with fertiliser, causing root burn, or in extreme cases, death! This will only happen, I believe, if the granules are just sprinkled on top of the pot. By placing granules into the potting mix (not on top), I have had no problems.

I also use various combinations of “dry” orchid fertiliser, mixed in a 20 litre plastic drum with a tap, (as per the recommended dosage), and also add one of the seaweed/fish based fertilisers for “top up” fertilising of my plants. This is applied using a 5 litre pressure sprayer, which allows me to fertilise the plant, but not the new growing shoots or open blooms or leaves, which I have found can be easily burnt in our Summer, also burning the blooms.

Yes, it takes me a full day for me to feed my 300+ orchids this way, but it gives me a chance see how they are growing. Do they have any problems? If so, I then have the opportunity to treat them!

If you look at a drop of water, it is oval in shape and acts like a magnifying glass in strong sunlight. During Summer in Melbourne, with our “daylight saving”, I will not water or feed after 2pm.

When using more than one dry fertiliser (which I often do to balance trace elements), I will adjust the ratio accordingly. I alternate a good watering followed by a “feed” the next time a watering is required. Remember, that the “feed” they get this year will influence next years “growth and blooms”, your best guide is **observation!**

Look at your orchids! Do they look “happy”? Are this years growths at least as large as last years, or are they starting to shrivel? If they are not happy, don’t suddenly over-feed them; rather increase the frequency that you are now feeding them. Salt build up at the base of the pots? Either too strong a fertiliser mix (waste of money), or you are not giving the pots a good “flush” between feeds (It could also be that your potting mix has broken down, and needs

replacing). If, when you water/feed, there is not good drainage, your plant needs potting in new mix.

Interesting link

Nick Miller (ncmiller@orcon.net.nz)

Those who wish to grow small, humidity-demanding orchids such as Pleurothallis, Masdevallia, oxyglossum Dendrobiums etc under difficult conditions or indoors, might find the following link (below) of interest. The author has devised an ingenious system of 'mini-vivariums, using terracotta (clay) drainpipes (drain tiles, a.k.a. field tiles) as a mounting medium. The basic concept could probably be adapted to suit a variety of different circumstances and used for different types of epiphytic or lithophytic plants. Now, the one problem – are terracotta drain tiles still available in this plastic world of ours? The answer apparently, is yes, both Clark's Pipes Ltd (09-828-8335) of Auckland and Southtile (03-215-9179) of Invercargill stock these. They are still used in agriculture and for septic tank drainage. Very likely a bit of searching would reveal other suppliers also.

<http://hawkdog.net/wordpress/archives/761>

Dunedin's Little Spotted Moa

Torsten Kleffmann (taddeus@xtra.co.nz) and Otto Hyink (otto.hyink@xtra.co.nz)

Prologue (by Torsten): When I came to New Zealand, roughly six years ago, I was particularly interested in New Zealand's native epiphytic orchids. I was, and still am, fascinated by their ability to adapt to the temperate and fairly cold climate which they face, especially in Southern New Zealand. Some of these epiphytes grow where there are regular night frosts in winter and occasionally they have to cope with some snow around their leaves and roots. Amongst them is a little monopodial orchid, *Drymoanthus flavus*. It is the coldest growing monopodial epiphytic orchid that I am aware of. In the coastal areas of Southern New Zealand conditions seem to be just all right for epiphytic orchids to grow.

Eager to observe this little monopodial orchid *in situ* I went out to the bush around Dunedin and searched for *Drymoanthus flavus* - without success. I visited many different places in the cloud forests of the Leith Valley and the Mount Cargill area with old broadleaf and podocarp populations – but still no *Drymoanthus*. I found numerous other orchids on the ground and on trees. It is not an easy task looking for terrestrials and epiphytes at the same time. For other hikers on the track it must have been an amusing sight as I stumbled along the track trying to look up and down almost simultaneously.

On a cold and rainy September morning I visited another piece of local bush, a spot that I had seen before from a distance, with a dark green scattering of large podocarps coming through the dense canopy of the bush, a telltale sign of mature native forest. A promising spot but not much different to other places that I had visited before. The one significant difference to other places I had visited was that the track runs downhill to reach the remnant pocket of mature native bush closer to sea level. Most walking tracks lead straight up to the top of the hills where hikers can get their rewarding lookouts. In Dunedin's cold climate only *Earina* species occasionally manage to grow epiphytically in the higher altitude areas of the bush. Sometimes tracks run for just a few hundred metres through orchid infested bush before being above the border line for epiphytes. There are only few tracks that maintain a consistent altitude for any length and where the forest is mature many *Earinas* cling to the trees, while Spider Orchids and Greenhoods are common on the ground (we may report about one of these tracks in another issue of the NZIOR).



Figure 1: *Drymoanthus flavus* population on a fallen miro.

Anyway, I went down this track and reached a bend where a large miro (*Prumnopitys ferrugineus*) had recently fallen down the slope – the trunk cutting a lane through the lower bush. I spotted a big *Earina mucronata* on the mossy trunk. I walked along the trunk to the *Earina* to have a closer look at this big plant or colony. When checking for more *Earina* plants further up the trunk, which was now further down the slope, I noticed a little green spot on the first large branching. On closer inspection there were many green spots – all individual little

monopodial orchids with characteristically spotted leaves (figures 1).

No doubt that this fallen Miro also hosted a fairly healthy population of *Drymoanthus flavus*. I counted more than 60 plants and there were probably many more on the many branches that I could not access. On my following visits to this region I didn't find many more spots with *Drymoanthus flavus*. The only plants that I found were on another fallen tree, a totara that is still alive, and high up on another miro. I got the impression that these plants only grow high up on the huge podocarps and are very difficult to spot from the ground. The plants on the fallen miro grew roughly 10 metres above ground before they fell down together with their host. However, there were many more *Drymoanthus flavus* plants on various trees along the track as Otto and I experienced when we visited the site one year later.

The following brief article is about a fairly strong population of *Drymoanthus flavus* in a distinct area of the cloud forest around Dunedin. The readership of the NZIOR is probably well familiar with this epiphytic *Sarcanthinae* orchid commonly named as the Spotted Fleshy Tree Orchid or Little Spotted Moa. According to Molloy and St George (A new species of *Drymoanthus* (Orchidaceae) from New Zealand, and typification of *D. adversus*. New Zealand Journal of Botany, 1994, 32:415) the first written report of today's *D. flavus* dates back to the early 20th century when it has been found in the cloud forests of the Leith Valley, Dunedin growing on a white mapau tree, putaputaweta (*Carpodetus serratus*). Initially it was not separated from the Fleshy Tree Orchid *Sarcochilus adversus* which was later transferred to the genus *Drymoanthus*.

In 1994 Molloy and St George described the Little Spotted Moa as a distinct species and named it *D. flavus* referring to the yellowish colour of the flower. There are some obvious differences between the two species. Besides the flower colours which are green/yellow in *D. flavus* and green/red in *D. adversus* (figure 2) the leaves are mostly darkly spotted in *D. flavus* and fleshy green in *D. adversus*. Another significant difference is the number of chromosomes

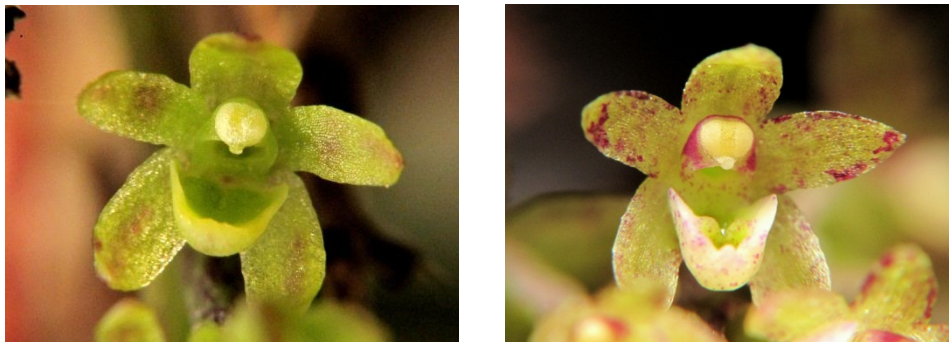


Figure 2: Flower close-ups of *Drymoanthus flavus* (left) and *Drymoanthus adversus* (right).

which is 24 in *D. flavus* and 48 in *D. adversus* suggesting that *D. adversus* might be a tetraploid form of *D. flavus* or of a common ancestor.



Figure 3: *Drymoanthus flavus* plants with long roots along a little tree trunk (top left), growing on a tiny twig (top right 1) and carrying spotted seed capsules (top right 2); plant in flower (bottom left 1); old plant dangling down from a tree trunk (bottom left 2); tree trunk covered in *Drymoanthus flavus* plants and their roots (bottom right).

The plants of *D. flavus* measure around 6-10 cm across. However, the roots can be very long for such a small plant and easily reach 50 cm in length (figure 3 top left). The roots are often the part of the plant spotted first as the white velamen gives a good contrast to the often dark colour of the tree bark unless on very wet and rainy days when the velamen is rather greyish-green. To find the little plants in the bush you first need to calibrate your eyes. It often happens that plants just 2 metres away are virtually invisible and once you caught sight of one of them you can see all the others clustering on distinct spots on the trunks and branches of all sorts of different host trees. The preferred host trees of the here discussed population seem to be broadleaf (*Griselinia littoralis*) and miro, but many other tree species have some plants on them.



Figure 4: Mature plants tend to form branches.

The orchids colonise the trunk, the branches and even very tiny twigs at the distal ending of branches (figure 3 top right 1). Some of the branches are covered by clusters of orchids (figure 3 bottom left) whereas others of the same tree are clear.

The site is characterised by native bush with a scattered population of old podocarps such as miro, rimu and some totara. It is located on a slope facing North to North West, which protects this area from the direct impact of cold southerlies and provides good sunlight during the winter months. The here-discussed *D. flavus* population grows at an altitude of roughly 180 to 200 metres above sea level. The area where the majority of the population can be observed in the lower bush is rather small. The plants are very common for a stretch along the track of roughly 50 metres. The population extends uphill into the bush for approximately another 50 metres but then suddenly stops. We were unable to inspect the bush downhill of the track as the slope is too steep and the bush too dense. The plants seem to require very specific conditions to grow, presumably the right combination of tree species, altitude, rainfall and

humidity, protection from cold and strong winds and a favourable period of sunshine hours in winter. However, populations high up in the tall podocarps and those growing amongst the trees in the lower bush might experience quite different conditions.

The fallen miro mentioned above is indeed a couple of hundred metres away from the here discussed population and we could not find any *D. flavus* plants in the lower bush surrounding that area. This bush sees much less light as the slope does not have the same northerly aspect. This observation points to light levels probably being very important. The *D. flavus* plants on the fallen miro faced a drastic change in conditions and unfortunately most of them died within the first year due to exposure to direct strong sunlight. After three years there are only very few plants left which do not look healthy. They will quickly experience very dark and wet conditions when the new bush overgrows the area again and the decay of the outer bark of the miro has started to set in.

We believe that there must be a very healthy population of *D. flavus* high up in the old podocarps over a larger area as considerably more light reaches the branches of these emergent trees. It would seem that while *D. flavus* is an uncommon orchid in an overall sense it can be abundant when the right growing conditions are encountered.

Photo essay – Vietnam, a land of orchids

Hong & Patricia Nguyen (hitsinfo@slingshot.co.nz)

There are many big and modern orchid nurseries in Vietnam , however you can also find orchids for sale on the streets in most towns in Vietnam. Here are some examples:



A practical mobile shop found in Ben Tre on the Mekong Delta in Vietnam:
Buying lunch from the front and orchids from the back of the mobile shop !
Photo taken in August 2011 while we were on holiday in Vietnam



Phalaenopsis, modern hybrids in the house of my sister in Ho Chi Minh City / Vietnam.
Photo taken when I visited her in August 2011 (first time after 40 years).
The worst part is: I took many photos of her orchids and I forgot to take one photo of her and her husband.



This page:
This is a real shop (not a mobile shop) selling modern hybrid orchids in Hue / Vietnam in August 2011.
Price approx. NZ\$ 1-2 each plant with flowers.





On front of a flower shop in Hue in Vietnam during my holiday there in August 2011. All are Dendrobium (Phalaenopsis-type) orchids with different sizes, shapes and colours.

They produce flowers nearly all year round in Vietnam and they are for export to Europe and Japan.



Readers may wonder why some orchid plants are sold by weight in kg – see later for an answer.

Dendrobium orchids for sale on the street of Hue in Vietnam in August 2011.

Big plants, each weigh between 5kg and 10Kg. Price between NZ\$ 1 and NZ\$ 2 per Kg.





Orchid plants for sale on a mobile shop on the street of Hue in Vietnam in August 2011.

The vendor said to me that they are high quality modern hybrids and not wild-collected plants... and then he asked me: How many kilograms of orchids do you want, Mister ?



The neighbour of the orchid mobile shop:
A mobile shop selling tropical fish on the street in Hue / Vietnam in August 2011



A bicycle shop selling plants on the streets of Hue.

And why are some of the orchids sold by the kilogram?
Some people in Vietnam (and also in other part of the world) may use them
for medicine purposes and that is the reason !

Please Google for further information about the medicinal properties of
orchids, especially the Dendrobium-type orchids.

A few bicycle plant shops could brighten up some of our cities in NZ.... *Editors*

Other Worlds: Companion plants - some gesneriads

Biddy Hair (cbhair@xtra.co.nz)

At the February meeting of the Hawke's Bay Orchid Society Nolean McKay and Biddy Hair took along a display of African Violet and other gesneriad plants to show members some of the varieties available as they are seldom seen for sale at garden centres. The collection included Streptocarpus, Achimenes, Chiritas and different African violets. The advances being made in the breeding of African violets and Streptocarpus are producing a wide colour range in these easily grown plants including greens and black and some with variegated leaves.

Gesneriad Display→



Streptocarpus seedling ↑

Achimenes are rhizomatous plants which flower best during the summer and autumn months. They come in a wide range of colours and enjoy shade house conditions, good moisture to prevent early dormancy and a balanced fertiliser feeding a couple of times through the growing season. There are a number of inter-generic hybrids and some of the plants are pendulous making a lovely basket display.

Achimenes seedling→



Streptocarpus are easily propagated by leaf cuttings or seed and will flower in the first autumn after sowing seed in the spring. They have a long flowering season especially if the spent flowers are removed regularly. An occasional spray to prevent caterpillar damage and a liquid feed of a balanced fertiliser are all that is required for a colourful display.



Streptocarpus grandis ↑



Achimenes seedling ↑



Aeschynanthus tricolor ↑

We grow African Violets as well as a number of other plants in the gesneriad family which include *Gloxinia*, *Chirita*, *Sinningia*, *Aeschynanthus* and more. They make great companion plants to cool growing orchids and produce a bright summer and autumn display. If anyone is interested in growing these plants or finding out more about them contact Bidy Hair cbhair@xtra.co.nz (editor of the African Violet & Gesneriad club newsletter.)



← AV (*Saintpaulia*) 'Emerald City'



Chirita 'Diane Marie' ↑

Orchids Month-by-month

– a Month-by-Month check-list to help you get the best from your orchids.

Russell Hutton (lrorchids@xtra.co.nz)

Here is a ‘what to do’ calendar which a number of readers and others I have spoken with at various places over the past few years have asked for – I surely hope it works for you.

Month by Month check-list to help you get the best from your orchids.

However, please remember that this is a guide only as season change and temperatures vary considerably down the length and across the breadth of the country. Plus, as I realise that many of you are these days ‘cost conscious’, please keep in mind minimum temperatures are not for some types at the optimum, but rather somewhat above survival level.

Any suggestions and or contributions will be most gratefully received.

Plant Names – I have used the ‘old’ names for all genera listed but have made notes as to recent changes. I have done this as I am sure your labels will have these old names written on them either in full or as an abbreviation.

If you are unsure/don’t know what the parentage of your plant is then send the name to the **Question Box** and **Dr Orchid** will let you know. BUT please remember to tell him the genus name or abbreviation (Cattleya = C; Cymbidium = Cym; Laeliocattleya = Lc; Dendrobium = Den; etc, etc) as without this the required information can not be found. Just write what is on the label.

Why?? Why do I need to know this?? do I hear you ask? Well here is a brief answer – because different orchid species can be crossed together with the resulting progeny fertile and then these plants hybridised with other species or hybrids, often from quite different climates, the result is often plants which are adaptable to a wider range of temperatures with regard to maximum day and minimum night temperatures, light and water frequency. So it stands to reason that knowing what kind of plant you have will make culture decisions far more easy.

If you have a plant/plants which do/does not have a label then maybe you could email a photo showing leaves and pseudobulbs/canes and or a photo of the flowers. Just maybe we can give you a name or at least the type of orchid. This of course will again make culture decisions much easier for you.

NOTE – a balanced fertilizer is one where the N:P:K proportions are roughly equal.

Eg. Miracle Grow which has an NPK rating of 15:13:12 – roughly balanced.

N = Nitrogen for general growth of leaves and stems

P = Phosphorus which promotes root development

K = Potassium (the ‘K’ comes from the Latin name Kalium for the element) which promotes flower/fruit production

Shade – to give you a rough idea of shade percentage, and you must try this on a bright sunny day.

30% shade - if you hold your hand about 25cm above the plant and spread your fingers should give you a rather distinct shadow slightly fuzzy around the edge.

50% shade - doing the same thing will give you a very indistinct shadow.

Just a tip – windbreak cloth (usually cheaper than shade cloth) gives around 40% to 50% shade.

Compiled by RFH with the assistance of several others who wish to remain nameless - hmmm and blameless??

A NOTE HERE REGARDING MOUNTED PLANTS OR THOSE GROWING IN BASKETS –
 these may require more frequent watering as they dry out more quickly.

<i>Cymbidium</i>	APRIL	MAY	JUNE
WATER In cases of neglect, bark can get far too dry – soaking plant in a bucket may be necessary. Remember water until it comes out the bottom of the pot	Unless in a really warm period, once a week is probably enough	Same as April	Same as May
FERTILIZER Thrive Fruit & Flower works well or your favourite fertilizer, but READ the instructions	½ strength balanced fertilizer every 2 nd watering. Use your favourite fertilizer	Same as April	Same as May
LIGHT	No shading required	No shading required	Only shading required might be for early flowering greens
TEMPERATURE	Over the winter period allow the temperature to be as warm as you can but don't encourage soft growth. To avoid this ventilate well during warm sunny days. Avoid the chill factor of cold winter winds by providing adequate shelter.	Same as April	Same as May
OTHER	By April most pests should be under control but examine your plants & if necessary spray with Confidor or Yates insect spray. Same applies to slugs & snail usually they are not a problem but treat if necessary. Mice love to find a warm home in winter & love climbing up spikes & eating pollen caps. Be aware!! Avoid disturbing plants over the winter unless it's a life & death situation for an unhealthy plant.		

<i>Paphiopedilum</i> - Slipper Orchids	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	Reduce watering with the cooling temperatures and shortening day length. If in doubt, <u>don't</u> water	Reduce watering with the cooling temperatures and shortening day length. Let the mix at the base of the pot become less moist before watering.	Reduce watering with the cooling temperatures and shortening day length. Let the mix at the base of the pot become less moist before watering.

		If in doubt, <u>don't</u> water	If in doubt, <u>don't</u> water.
FERTILIZER	½ strength balanced NPK	½ strength balanced NPK	½ strength balanced NPK
LIGHT	Consider reducing shade a little. 50 % to 60% shade	Reduce shade to 30%	30% shade
TEMPERATURE - Day - Night	25 degrees 12 degrees	Ambient 12 degrees	Ambient 10 degrees
OTHER	Watch for snails and slugs and in warmer areas possibly aphids on the flower buds. Watch for Mealy Bug also.		

<i>Cattleya</i>	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade or less
TEMPERATURE - Day - Night	Ambient 5 plus degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER	Watch for snails and slugs and in warmer areas possibly aphids on the flower buds.		

<i>LC (Laeliocattleya)</i> – this name means hybrids which have <i>Cattleya</i> and <i>Laelia</i> in their parentage, especially <i>Laelia purpurata</i> . However recent re-classification has put <i>Laelia purpurata</i> to the genus <i>Cattleya</i> so now these hybrids are <i>Cattleya</i> (C).			
	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Very light watering, ie. keep rather dryish. When in doubt don't water	Very light watering, ie. keep rather dryish. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade or less
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER			

SLC (*Sophrolaeliocattleya*) – these are hybrids which have been bred using the genera *Sophronitis*, *Laelia* and *Cattleya*. However recent re-classification has placed *Sophronitis coccinea* – the most often used Soph species – into the genus *Cattleya*. See above if you want an update on your plant name. This is for plants with larger growth habit having only a small amount of *Sophronitis (Cattleya) coccinea* in their background.

	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade or less
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER			

SLC (*Sophrolaeliocattleya*) – This is for plants with a high proportion of *Sophronitis (Cattleya) coccinea* in their background. These plants are very much smaller in stature being from 12cm to 20cm tall.

	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade	30% shade	30% shade
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER			

BLC

(*Brassolaeliocattleya*) hybrids using the genera, *Brassavola (Rhyncolaelia)*, *Laelia* and *Cattleya*.

	APRIL	MAY	JUNE
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A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade or less
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER			

Laelia

eg. *anceps, albida, autumnalis, furfuraea, gouldiana, grandis, lundii, purpurata, sincorana, speciosa* and rupicolous types such as *briegeri, cinnabarina, flava, lucasiana*. Again there are many name changes so for an update see above.

	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water very sparingly and do this on a sunny day. Allow to dry off before watering again.	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade or less
TEMPERATURE - Day - Night	Ambient 2 to 5 degrees	Ambient 2 to 5 degrees	Ambient 2 to 5 degrees
OTHER			

Laelia

Others eg. *dayana, harpophylla, jongheana, kautskyi, pumila*

	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade

TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER			

<i>Phalaenopsis</i> 'Moth Orchid'	APRIL	MAY	JUNE
WATER	Water often enough to keep the potting mix moist but allow the top layer to become dry looking before watering again. It is a good idea to use tepid water, especially during the colder months.		
FERTILIZER	Feed regularly, maybe every second watering, with half to ¾ strength liquid fertilizer. I have used Nitrosol with very good results.	Feed regularly, maybe every second watering, with half to ¾ strength liquid fertilizer. I have used Nitrosol with very good results.	Feed regularly, maybe every second watering, with half to ¾ strength liquid fertilizer. I have used Nitrosol with very good results.
LIGHT	30% to 50% shade	30% to 50% shade	30% to 50% shade
TEMPERATURE - Day - Night	20 to 25 degrees Around 15 degrees	20 to 25 degrees Around 15 degrees	20 to 25 degrees 15 degrees
OTHER	Check your plants regularly for Mealy Bug, on the underside of the leaves and the base of the buds/flowers. These pesky little critters seem to appear from nowhere. Also watch for snails and slugs, they just love those developing flower spikes.		

<i>Dendrobium</i> 'Aussie' types – <i>kingianum, falcorostrum, gracilicaule, jonesii, speciosum, tetragonum</i> etc and hybrids from these			
	APRIL	MAY	JUNE
WATER	Allow to dry out between watering	Allow to dry out between watering	Allow to dry out between watering
FERTILIZER	Reduce fertilizer	Reduce fertilizer to encourage buds	Reduce fertilizer to encourage buds
LIGHT	Continue with good light	Continue with good light	Increase the light
TEMPERATURE - Day - Night	Ambient	Apply more protection	Watch for cooler nights
FLOWERING	Growths maturing	Some early flowering may be showing buds	Some early flowering may be showing buds
OTHER	Withholding fertilizers or increasing potash at this time will promote flowering.		

<i>Dendrobium</i> Soft Cane and <i>nobile</i> types – <i>nobile</i> hybrids, <i>primulinum, pierardii (aka aphyllum), signatum crystallinum, heterocarpum, findlayanum, devonianum, crepidatum, etc</i>			
	APRIL	MAY	JUNE
WATER during the COLD months IF IN DOUBT DON'T and for the WARM months IF IN DOUBT DO	Decrease water frequency as new canes should be coming to maturity.	Just a little, keep rather dry.	Just a little, keep rather dry.
FERTILIZER	½ strength fertilizer	¼ to ½ strength	¼ to ½ strength

	every 2 nd or 3 rd watering	fertilizer every 2 nd or 3 rd watering	fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER	Watch for snails and slugs and in warmer areas possibly aphids on the flower buds.		

Dendrobium

Cool to intermediate types which are not fully deciduous and need a dryish winter rest. Eg. *Den chrysotoxum, densiflorum, farmeri, fimbriatum, moschatum, sulcatum, thyrsoflorum*

	APRIL	MAY	JUNE
WATER during the COLD months IF IN DOUBT DON'T	Begin to decrease watering frequency and allow to become somewhat dry between waterings.		
FERTILIZER	These plants are now coming to maturity of the new growths so little is needed.		
LIGHT	Good bright light (30% shade or less) over this period gives a stronger more hardy plant and should increase flower production.		
TEMPERATURE - Day - Night	Unless you are in a very cold area ambient daytime temperatures should be fine – 10 deg C and above. Night – down to 3 to 5 deg C is OK.		
OTHER	Watch for snails and slugs and in warmer areas possibly aphids on the flower buds.		

Dendrobium

Other cool to intermediate types which do not require a decided dryish winter rest. eg *Den lawesii, subclausum, latoureas (some), cuthbertsonii*.

	APRIL	MAY	JUNE
WATER during the COLD months IF IN DOUBT DON'T	Keep the plants moist but not wet, don't let the plants become dry at the roots. These types typically originate from places where water is available at the roots all year and are in many cases growing all year. However too wet AND cold is dangerous.		
FERTILIZER	Although these types can be growing all year, at this time around ½ strength should be fine.		
LIGHT	Good light, not too shady. (30% shade) On a sunny day your hand should cast a fuzzy-edged but definite shadow.		
TEMPERATURE - Day - Night	Daytime – ambient temperature is OK. Night – ambient but not below 4 to 5 deg C. <i>Den cuthbertsonii</i> is OK down to zero in an enclosed situation.		
OTHER	Watch for snails and slugs and in warmer areas possibly aphids on the flower buds.		

Dendrobium 'Dockrillia' types – eg. *linguiformis, striolata, teretifolium, fuliginosa, wassellii, rigida, pugioniformis* and hybrids thereof. Some authorities have removed this group from the genus *Dendrobium* and placed them in a separate genus *Dockerillia*.

	APRIL	MAY	JUNE
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	APRIL	MAY	JUNE
WATER – a note here, due to their strongly pendulous or scrambling growth habit these plants are typically grown as mounted plants so will need more frequent water.			
FERTILIZER	With the 2 nd watering with 1/2 strength balanced fertilizer your watering should be stopped up to 30% shade on 3 rd day and middle of the day by conditions, Bright light short of burning the plant enhances flowering.		
LIGHT			
TEMPERATURE - Day - Night	Ambient Ambient	Ambient Ambient	Ambient Ambient
FLOWERING	Typically Spring to Summer flowering – flower stems arise from a little below the base of the leaf.		
OTHER COMMENTS	Once established they do not need any special conditions, they do not seem to be susceptible to the usual mealy bug and scale, give them a spray when spraying your other orchids. Just watch for slugs and snails.		

<i>Masdevallia</i>	APRIL	MAY	JUNE
WATER	Over the colder months I have found that allowing the plants to become rather more drier between waterings has produced more profuse flowering of the spring/summer blooming types. ie <i>Masd coccinea</i> , <i>veitchiana</i> , <i>rolfeana</i> and many hybrids.		
FERTILIZER	Keep feeding as usual	Keep feeding as usual	Keep feeding as usual
LIGHT	30% to 50% shade. Try to give the plants as much light as the plants were getting over the spring/summer period. This again will improve flowering.		
TEMPERATURE - Day - Night	Day – for these colder months the ambient temperature should be fine. Night – down to 2 – 5 deg C.		
OTHER	Watch for snails and slugs and in warmer areas possibly aphids on the flower buds.		

<i>Sarcochilus</i>	APRIL	MAY	JUNE
WATER over COLD months IF IN DOUBT DON'T and for the WARM months IF IN DOUBT DO	With falling temps you may need to reduce watering to suit conditions but do not let the plants dry out completely.	Reduce watering to suit conditions but do not let the plants dry out completely.	Reduce watering to suit conditions but do not let the plants dry out completely.
FERTILIZER	½ strength balanced fertilizer every 2 nd watering	½ strength balanced fertilizer every 2 nd watering	½ strength balanced fertilizer every 2 nd watering
LIGHT	Try to give the plants give as much light as the plants were getting over the spring/summer period. This will improve flowering.		
TEMPERATURE - Day - Night	Day – for these colder months the ambient temperature should be fine. Night – down to 2 – 5 deg C.		
FLOWERING			
OTHER	Watch for snails and slugs and lay 'Slug Out' or similar (this does not deteriorate as quickly as normal slug bait) Always watch for scale. Do not cram up your plants, leave plenty of room between them.		

Oncidium

'Dancing Lady' types – eg. *varicosum*, *flexuosum*, *leucochilum*, *eurycline*, *longipes*, *forbesii*, *crispum*, and hybrids from these.

	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	With temperatures now falling water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't.	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water	Water sparingly and allow the mix to become rather dryish before watering again. When in doubt don't water
FERTILIZER	½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering	¼ to ½ strength fertilizer every 2 nd or 3 rd watering
LIGHT	30% shade	30% shade or less	30% shade or less
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER			

Odontoglossum

Crispum types etc

	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	Water sparingly but ensure that the mix stays damp but not wet. If in doubt, don't water	Water sparingly but ensure that the mix stays damp but not wet. If in doubt, don't water	Temperatures will be rising now so increase water but don't allow the mix to become overly wet
FERTILIZER	½ strength balanced NPK every 2 nd or 3 rd watering	½ strength balanced NPK every 2 nd or 3 rd watering	½ strength balanced NPK every 2 nd or 3 rd watering
LIGHT	50% shade	50% shade	50% shade
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER	Watch for snails/slugs and keep baits out for them -hey they can eat in one night what you have been waiting to see for the past year!!. Slugs seem to be harder to control with bait, so a night patrol will often reveal where they are hiding. Repotting can start as the weather gets warmer in September. Repot from when the new growth is 5 cm tall but before the new bulb forms		

Odontioda

– these are hybrids from *Odontoglossum* crossed with *Cochlioda*.

	APRIL	MAY	JUNE
WATER A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	Water sparingly but ensure that the mix stays damp but not wet. If in doubt, don't water	Water sparingly but ensure that the mix stays damp but not wet. If in doubt, don't water	Temperatures will be rising now so increase water but don't allow the mix to become overly wet
FERTILIZER	½ strength balanced	½ strength balanced	½ strength balanced

	NPK every 2 nd or 3 rd watering	NPK every 2 nd or 3 rd watering	NPK every 2 nd or 3 rd watering
LIGHT	50% shade	50% shade	50% shade
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER	Watch for snails/slugs and keep baits out for them -hey they can eat in one night what you have been waiting to see for the past year!!. Slugs seem to be harder to control with bait, so a night patrol will often reveal where they are hiding. Repotting can start as the weather gets warmer in September. Repot from when the new growth is 5 cm tall but before the new bulb forms		

Miltonia (Brazilian types) species and Hybrids, *Miltassia*, *Miltonidium*, *Odontocidium*, *Wilsonara*, *Maclellanara* and *Alexanderara*.

WATER	APRIL	MAY	JUNE
A good rule of thumb for watering is for during the COLD months IF IN DOUBT DON'T and for the WARMER months IF IN DOUBT DO	Water sparingly but ensure that the mix stays damp but not wet. If in doubt, don't water	Water sparingly but ensure that the mix stays damp but not wet. If in doubt, don't water	Temperatures will be rising now so increase water but don't allow the mix to become overly wet
FERTILIZER	½ strength balanced NPK every 2 nd or 3 rd watering	½ strength balanced NPK every 2 nd or 3 rd watering	½ strength balanced NPK every 2 nd or 3 rd watering
LIGHT	30% shade or less	30% shade or less	30% shade or less
TEMPERATURE - Day - Night	Ambient Around 5 degrees	Ambient Around 5 degrees	Ambient Around 5 degrees
OTHER	Watch for snails and slugs, they just love those developing flower spikes. <i>Miltonia</i> and its hybrids will benefit from a higher night temperature.		

Miltoniopsis

– common name for these lovelies is 'Pansy Orchid' – very apt.

WATER	APRIL	MAY	JUNE
A good rule of thumb for the colder months IF IN DOUBT DON'T	Water often enough to ensure that the mix stays damp but not wet.	Water often enough to ensure that the mix stays damp but not wet.	Water often enough to ensure that the mix stays damp but not wet.
FERTILIZER	½ strength balanced NPK every 2 nd or 3 rd watering	½ strength balanced NPK every 2 nd or 3 rd watering	½ strength balanced NPK every 2 nd or 3 rd watering
LIGHT	50% shade	50% shade	50% shade
TEMPERATURE - Day - Night	Ambient Ambient	Ambient 5 to 10 degrees	Ambient 5 to 10 degrees
FLOWERING	Flowering will be more or less finished now but depending on growth development you could get some spikes.		
OTHER	Watch for snails/slugs and keep baits out for them -hey they can eat in one night what you have been waiting to see for the past year!!. Slugs seem to		

	be harder to control with bait, so a night patrol will often reveal where they are hiding. Repot when the plant has finished flowering and new growth(s) is 5 cm or so tall, and when the new roots are just developing. Try to repot annually.
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Note from Editors

Many thanks to Russell and collaborators for providing this most useful series of cultural notes, which is now complete. We seek guidance from readers as to whether we repeat these in each issue, as appropriate for the season, or at less frequent intervals – maybe every second year. If you have an opinion, please email us!

Publication Details and Charges

The *New Zealand Internet Orchid Review* is published on a quarterly basis, with publication in March, June, September and December.

The email subscription rate is **zero**. We would like to eventually publish a printed version (which would attract a charge), but there would need to be sufficient demand to make it practical. To date that demand has not been sufficient for us to follow it up.

Deadlines for copy

All written copy for articles must be emailed to the Editors no later than one week before publication date. A reminder will be emailed to all regular contributors two weeks before each deadline. Society notices and classified advertising must be emailed to the Editors no later than one week before publication date. If you are running late, please email the editors (ncmiller@orcon.net.nz). We expect the next issue to go out on **Friday 15 June 2012**.

A reminder notice will go to all subscribers and Society contacts shortly before each publication deadline.

Advertising

If you are interested in advertising in this publication, please email the editors for an information sheet. Our advertising rates are extremely reasonable (currently we do not charge for advertising...) Graphics and photos incur no extra charge, provided that you supply them.

Classified advertisements, Society notices

These are published free of charge, maximum of 30 words for a classified ad please.

Letters

Feel free to write letters to the editor. As long as they are not anonymous, obscene, time-wasting or libellous we will publish them!

Question and answer section

If you have any questions relating to any aspect of the growing of orchids or companion plants, we will solicit replies from our panel of experts. Any responses received will be emailed to the questioner, and the question and answers will be published in the next issue. This way you can receive a prompt response to your question but other readers can subsequently benefit as well.

Spread the word

If you have any friends who grow orchids or 'companion plants', let them know of this publication. All they have to do to subscribe is to send an email. If they haven't joined the computer age and/or would be interested in subscribing to a print version, ask them to contact the editors by mail or telephone or else send an email on their behalf. So far only a handful of requests for a printed version have been received.

Please write for us

All submissions are welcome – long or short. If you're not too fluent with the written word, we are happy to edit your copy. Without writers there will be no magazine.

File formats

We prefer to receive copy as a Word document. If you have a very recent version of Word, please ensure that you save your document and send it to us as a .doc file (preferred), or a .docx file. We also prefer not to receive Acrobat (.pdf) files – we actually assemble the magazine in Word and don't convert it to Acrobat until we're ready to send it out. So .pdf files have to be converted to Word – a tiresome business. We are also happy to receive shorter documents as a simple email message.

If you are sending us a Word document with photos in it, please shrink the photo file size (to, say, 100 to 300 KB) **before** you insert the photo in the document. We can't shrink the photos from inside your document, without going through a complex procedure. If we fill the magazine with 2 or 3 MB photos then, even after we have converted it all to an Acrobat file, those readers still with dial-up access will get very grumpy!

That address again

ncmiller@orcon.net.nz

Please note: If you change your email address and you don't advise us, you won't receive your magazine! Typically, every time we send out an issue, 8 to 12 bounce due to invalid email addresses.

Society Notices

Note that some show notices are in the larger full-page advertisements section later in this magazine.

Te Puke Lions Orchid Show (Bay of Plenty, 3 hours south of Auckland)
Te Puke War Memorial Hall, 13th & 14th April 2012.

The **Manawatu Orchid Society** Autumn Show will be held in the St. John's Ambulance Hall, Bowen Street, Feilding on Saturday April 14th. 10am – 4pm.

New Zealand Orchid Society

Autumn Show, Sunday 6th May 2012, Mt Albert War Memorial Hall, New North Road, Mt Albert

Contact Joe Vance jborchids@xtra.co.nz

New Zealand Orchid Society

Winter Show, 21-22nd July 2012, Mt Albert War Memorial Hall, New North Road, Mt Albert.

Contact Joe Vance jborchids@xtra.co.nz

New Zealand Orchid Society

Spring Show 14-16 September 2012, Mt Albert War Memorial Hall New North Road, Mt Albert

Contact Joe Vance jborchids@xtra.co.nz

Hibiscus Coast Orchid Society (East Coast just north of Auckland)

We meet the 2nd Sunday every month (except January and our show month, which is September) Masonic Lodge, 103 Centreway Road, Orewa.
Meeting starts at 1.30pm - orchid sales from 1pm We have speakers at most meetings.
Love to see new members. Contact: Judy Murray (after hours) 09-424 1968
(decorhomes@xtra.co.nz)

Tauranga Orchid Society - (3 hours south of Auckland in the Bay of Plenty)

Meetings held 3rd Tuesday each month, Feb to Nov inclusive, 7.30pm at The Wesley Church Hall, 13th Avenue, Tauranga. Visitors welcome.
Enquires: Phone Natalie 07 5430847 or email bc.na.simmonds@kinect.co.nz

The Orchid Council of NZ has a web site that lists all the shows around the country. The URL is:

http://www.orchidcouncil.co.nz/show_dates.html

The Bay of Islands Orchid Society meets on the 3rd Sunday of the month at 1.30pm. February starts the year with a "moveable feast."

Meetings are held in the St James Church Hall,
Stone Store Hill, Kerikeri. Visitors Welcome.

Enquiries to - Lorna Sinton 09) 4073424

(3 hours north of Auckland, N.I.)

Waitakere Orchid Club Ribbon Show (Fun show)

Saturday 17 March 2012

*Whenuapai Hall, 43 Waimarie Rd, Whenuapai, Auckland. (At the back of Whenuapai Air Base). Note changed venue. \$6 for BBQ lunch (including entry), please bring a salad OR desert. **Important:** Please let Glenys know ASAP if you are going to come for the BBQ, as she needs to order the steaks. Late comers may miss out. Contact Glenys MacRae (09-8351216) for bookings.*

Show is judged by members, all are welcomed to participate.

Open to public 1-3pm Come and see the show and then visit nurseries in the area, eg. Totara Waters. web: <http://aoc.inetgardens.com>

North Shore Orchid Society (Auckland)

The Society meets on the LAST Sunday of each month (except January, October & December) in the Milford Senior Citizens Hall, 141A Kitchener Road, Milford (behind New World, adjacent to Milford Shopping Centre carpark) at 12.30 pm. We would love to see you at our meetings, which are relaxed and informative. Any queries regarding meetings to Rodney Draper at draperfam@xtra.co.nz

Howick Orchid Society Inc. (Howick is a suburb of Auckland, N.I.)

Meets 2nd Sunday each month except Jan. (no meeting) and Oct. which is 2 weeks after show date.

Venue: Fencible Lounge, Uxbridge Rd, Howick, adjacent to library.

We have approx 100 members (usually 50+ at each meeting) and a large variety of orchids displayed each month.

Check out our Website where you can see some photos of plants displayed and read our newsletters: <http://hos.inetgardens.com>

For further information phone Glenn 09 534 8689 or Len 09 576 6303.

Classified advertisements

Due to a serious disability, I have a large number of mixed genera for sale. Many are one-offs and unusual, Miltoniopsis, Odont alliance, Phalaenopsis, Cattleya alliance, Dendrobiums, Neobenthamia, Disas, Masdevalias, Pterostylus, Neofinetias. These Orchids are well below usual pricing, Inspection invited by arrangement, and no mail orders.

Ewen B Perrott
253 Tui Crescent
Te Awamutu.
Ph 07 871 4599.

I am looking for a plant of *LC* Culminant 'La Tuilerie' .or another spelling is Tulliere from what I gather. Please email me at bandasyder@xtra.co.nz or text me on 0212680229 or land phone 033599545
Alison Syder

We are at present developing our listings of Orchid growers. which we can circulate to our members. Would GROWERS please contact me with their Email address, and attach an up to date list of available plants so I can co-ordinate the replies.

Regards

Beatrice Miller (miller.hampden@xtra.co.nz), North Otago Orchid Society

Dear Orchid friends

The publication "The Stanhopea Book" is now printed and available. On 2.7 kg of paper and 496 pages you will find more than 850 illustrations. If you are interested please contact

RJOrchids@gmx.ch

Rudolf Jenny

For sale Part of collection of Paphs from the Late Brian Syder's collection

Leeanum 'Superbum' \$15	topperi x gael \$30
Lambourn \$15	lowii \$30
Phips \$15	Magic Mood \$20
Lady Dillion Magnifeca \$15	
Venture \$15	
Primulinum \$15 and \$20	
Ranchero Harbur Balthazer x Inca Penn Valley \$22	
Imperial Jade \$22	
Mocha Tremorga \$22	
Wenbourne Lyoth Bete x self \$20	
Primulinum \$20 and \$15	
Villosum \$20	
Agnes de Buric \$22	
Angel Luscombe \$22	
Armeni (white) \$25	
Whitemoor 'Show Maiden 'Am \$25	
Insigne Harefield Hall \$25	
Insigne Maudie \$25	
Blenhiem \$25	
Rosy Dawn AM \$40	
Keeling \$50 and \$30	

I have copied the names of the tags so only hope they are correct. Postage will be extra and no price at this stage. Plants have just been repotted in February 2012. Please phone 033599545 or email bandasyder@xtra.co.nz

GARAGE SALE

OF THE REMNANTS OF THE 'ROY HARRIS AUCTION'.

SATURDAY 24TH MARCH, 9 am---12 am

At the home of Natalie & Brian Simmonds, 130 Pyes Pa Rd, Tauranga.

POTS of all sizes, WIRE BASKETS, SPRAYS, FERTILISERS,
ORCHID BOOKS of wonderful quality,
PLASTIC SHEETING, FLORIST WIRE, AND MUCH –MUCH
MORE.

**All proceeds to be shared between the Harris Family and the
Tauranga & BOP Orchid Clubs.**

%%%%%%%%%

To make the morning more interesting for everyone, we invite you to have a

CAR BOOT SALE

*Do you have surplus plants, or orchid paraphernalia you would like to sell?
Bring them along to the Garage Sale and make a little profit for your efforts.*

WAIKATO ORCHID SOCIETY AUTUMN SHOW 2012

You are invited to our Autumn Show



**Hamilton Gardens, Cobham Drive,
Hamilton on Saturday 31st March.**

Public Opening hours 11-30am to 3-30pm.
Displays, Plant Sales

Members of any of NZ Orchid Societies are invited to exhibit plants at this show, with staging from 9am to 10-30am following which plants will be judged.

Exhibitors only may also sell plants from the Sales table with the Waikato Society taking a 10% commission on sales.

ADMISSION Free



HOWICK ORCHID SOCIETY INC.

The **Howick Orchid Society Inc.** has pleasure in inviting you to an Orchid Symposium consisting of the Orchid Council of New Zealand's Annual General Meeting and National

Judging Seminar on 1st, 2nd and 3rd June 2012.

This will be held at Te Tuhi Centre of the Arts, 13 Reeves Road, Pakuranga, Auckland.

The program is:

Friday 1 st June 2012:	2pm – 6.00pm	Set-up stands and plants, registration
	2pm – 4.00pm	Executive meeting
Saturday 2 nd June 2012	8.00am – 9.00am	Registration
	9.00am – 5.00pm	Judging seminar
	6.30pm	Dinner with guest speaker, to be held at the Howick RSA, Wellington Street, Howick.
Sunday 3 rd June 2012	8.00am – 12.00noon	Continuation of Judging Seminar.
Meeting	1.00pm – 5.00pm	Orchid Council of N.Z. Annual General
	5.00pm – 7.00pm	Executive meeting
Monday 4 th June:	Grower visits.	
Cost for early registration, until 30 April 2012:	Judging seminar and AGM:	\$60.00
Cost of seminar from 1 May:		\$70.00
Saturday Dinner (limited numbers):		\$35.00

Sunday evening dinner: No arrangements have been made for registrants. The Howick and Pakuranga area has many restaurants and cafés with a range of food styles, especially Meadowlands for many Asian styles

Would all Society Secretaries and Regional Judging Chairs please ensure that copies of the attached registration form gets to all likely participants.

Registration for the Saturday evening dinner is essential as numbers are limited.

All applications received after 01 May will be treated as late registrations at the higher fee.

Registration:

A registration form is attached for your convenience.

Full registration covers admission to the judging seminar on both days including morning and afternoon tea and lunch. It does not include dinner.

Limited registration allows for partners (or any others) who will not be attending the seminar but want to have tea and lunch at the venue.

Saturday Dinner:

The dinner will be held in the Howick RSA, 25 Wellington Street, Howick. Entrance to the function room is through the carpark at the back of the premises on the lower level. NO entry through the main street entrance.

Parking is limited at rear of the building, but there is plenty of nearby street parking

Pre-dinner drinks and any further drinks will be your own responsibility, a cash bar will be available. BYO is not permitted.

We stress the point that numbers are limited.

Accommodation:

The Howick, Pakuranga, and Botany area has a range of motels in the vicinity and bookings can be made through various websites.

The Pakuranga Motor Lodge is within walking distance of the main venue while others would require car transport.

Transport from the airport to the motels is the responsibility of the delegates. If a number of delegates arrive at the same time, a shuttle bus may be more cost-effective than a taxi.

Plant Sales:

Plant sales may be available, but this is still to be confirmed. As the sales tables will be in the same hall as the seminar, sales can only take place during breaks in the proceedings.

Displays:

Members of the Judging groups are requested to bring plants for display. Plants will be benched by genera without any sub-classes.

Grower visits:

A list of Howick Orchid Society growers to visit on Monday will be available during registration.

19th AOC Conference & Show; Perth.

The 19th Australian Orchid Council (AOC) Conference & Show to be held in Perth from 11-16 September 2012 at the Burswood Entertainment Complex promises to live up to its theme "Wild about Orchids" with stunning displays of local grown and exotic orchids, from all over the world being on show. Spring time in Perth ensures there will be many orchid genera in flower along with most of our local native orchids through-out Perth and the south west.

The AOC Conference & Show has attracted significant interest here in Australia and internationally with registrations for the conference and vendor locations in the marketplace being taken up at a steady rate.

The outstanding Burswood venue and an international speaker list which includes some of the most highly regarded orchid growers in the world have contributed to this strong interest for places at the 19th AOC Conference & Show. Significantly there has been a strong interest from overseas orchid nurseries and product suppliers for vendor places to complement the Australian growers and orchid producers. Registration places for the conference lectures and places on local tours, to see our native orchids in their natural habitats, have also proven to be very popular with international visitors. In fact most places on these tours have already been sold out.

The 19th AOC Conference & Show which promises to be an outstanding showcase of Western Australian orchids, both hybrid and species, includes an international gathering of the most authoritative orchid speakers ever seen in Australia, headed by keynote speaker Terry Root from the Orchid Zone, USA. The event is open to the public from Thursday 13th until Sunday 16th September 2012. Lectures also start on Thursday and run until Saturday 15th September.

Further information including registration forms can be obtained from the event website;
http://www.waorchids.iinet.net.au/19th_AOC_Conference.htm

There will also be a number of daily public talks on orchid culture and potting demonstrations for those wishing to learn from the experts on just how to get the best results from your orchids, which can be easily grown in the backyard or even in the home.

All activities (exhibition, vendors, and lecture program) of the 19th AOC Conference & Show will be held inside the Burswood Convention facility under the one roof, with very easy access from the many car parks and the Burswood's numerous facilities and attractions. The lectures are being held in the Astral Room on the same level as the show room floor. The orchid exhibition and the marketplace for vendors will be in the Burswood Grand Ballroom which covers over 1800 square metres and is in addition to the foyer area consisting of another 1500 square metres, where the Opening Ceremony will be held. There is also a dedicated reception and information desk.

The Australian Orchid Conference has not been held in Perth since 1991 so do not miss this magnificent display of local and exotic orchids on display at the Burswood Entertainment Centre during September.

Bruce Larson
Chairman Conference Committee

WILD ABOUT

Orchids

Dendrobium speciosum. Copyright N & J Martin



19th Australian Orchid Council Conference & Show

11th – 16th September 2012

Burswood Entertainment Complex
Perth, Western Australia

For more information Email: aocconference@dodo.com.au
Postal: The Secretary, PO Box 576, MORLEY, WA 6062 Australia
Website: www.waorchids.iinet.net.au/19th_AOC_Conference.htm

Proudly supported by



- **Orchid displays** - Championship orchids
- **Large range** of orchid genera
- **Local native species orchids** and Orchids from around the world
- **Stunning modern hybrids** never seen before in Australia.
- **Floral Art** - Traditional and modern floral art - Ikebana displays
- **Sales area** - Local, Interstate and International Vendors
- **Commercial** orchid growers
- **Hobbyists** and societies/clubs
- **Cultural talks** by highly experienced growers
- **Learn how to grow** and flower these beautiful orchids
- **Orchid potting demonstrations**

**Open to the public from
13th - 16th September inclusive**

Thursday: 9 am to 6 pm

Friday: 9 am to 6 pm

Saturday: 9 am to 6 pm

Sunday: 9 am to 4 pm

Entry prices

Adults \$12.00

Pensioners/Seniors/children

13 - 17 yrs \$7.00

Children under 12 Free

Family (2 x 2) \$30.00

☐ **Three Days of Lectures** (from Thursday 13th - Saturday 15th September) for the more serious orchid grower, by Orchid experts from the **USA, UK, Taiwan, Ecuador, Vietnam, Switzerland and Interstate**

☐ **Registration** - three day or one day rate, is a must and details and registration forms can be obtained from our web site;

http://www.waorchids.iinet.net.au/19th_AOC_Conference.htm

☐ **Parking** Over 3500 parking spaces available at the Burswood complex and over 1800 of these are free - easy access to the show - held in the Grand Ballroom. **If you have no internet, contact....**

Merle 0415 116 960

Bruce 0417 903 280

Tony 9342 3799

MOST OF THE ISLAND NATIONS OF OCEANIA AS FAR AS THE DATE LINE.

WHO?: THE EVENT, HOSTED BY THE KABI GROUP OF ANOS, IS AN OPEN SHOW FOR ALL SOCIETIES OR INDIVIDUALS

HOW: DO YOU FIND DETAILS? ON THE WEBSITE www.ourshopfront.com/kabi

The following books are offered for sale from the Estate of Roy Douglas Harris:

<u>Title:</u>	<u>Author:</u>	<u>Pub:</u>
Orchids of Papua New Guinea – an introduction	Andree Millar	1978
Australian Indigenous Orchids	A. W. Dockrill	1969
Home Orchid Growing (3 rd edition)	Rebecca Tyson Northern	1970
Miniature Orchids	Rebecca Tyson Northern	1980
Orchids for Everyone (orange cover)	Various authors (8)	no date
Sanders' Lists		
Sanders' complete list of Orchid Hybrids - To January 1 st 1946	American O S edition	1947
Sanders' one table List of Orchid Hybrids - (1946 – 1960) Volume 1 & 2 - from 1 st January 1946 to 31 st December 1960	Sanders'	1961?
Sanders' List of Orchid Hybrids - addendum 1961 - 1970	reprinted	1976
Sanders' List of Orchid Hybrids - 10 year addendum 1961 - 1970	reprinted	1988
Sanders' List of Orchid Hybrids - addendum 1971 - 1975	reprinted	1980
Sanders' List of Orchid Hybrids - addendum 1976 - 1980		1981
Sanders' List of Orchid Hybrids - addendum 1981 - 1985	reprinted	1988
Sanders' List of Orchid Hybrids - addendum 1981 - 1990		1991
Sanders' List of Orchid Hybrids - addendum 1996 - 1998		1999
Sanders' List of Orchid Hybrids - addendum 2002 - 2004		2005
Sanders' List of Orchid Hybrids - addendum 2005 - 2007		2008

Anyone interested in making an offer,
please contact: Wilma Fitzgibbons

phone: 07 5422243
email: tony.wilma@xtra.co.nz



7th New Zealand National Orchid Expo

**TSB Stadium
New Plymouth**

30th September to the 3rd November 2013

Step out and visit the Taranaki Orchid Expo
and then carry on for the Taranaki Garden Festival

Register your interest at 7nznoc@hotmail.co.nz

POTTERING ABOUT GARDEN CENTRE

254 Military Road, R D 2, Whakatane

Ph: Fax: (07) 3228201

Email: potteringabout@xtra.co.nz

Open Wed to Sunday – 9am to 4pm

Or by appointment.



We have a great range of flowering plants to get your garden looking good. We do:

- *Bromeliads*
- *Flowering perennials*
 - *Natives*
- *Flowering orchids*
 - *Succulents*
 - *Shrubs*
 - *Trees*
 - *Compost*
 - *Potting mix*
- *Coloured pumice*
 - *Bark*
 - *Mulch*
 - *Pots*



Sunvale Orchids
31 Sunvale Crescent
Gisborne
New Zealand



D S & P R Hutchins

Phone 06 867 2567

027 640 4109

Email dphutchins@xtra.co.nz

Free NZ's ONLINE Orchid Magazine contact Nick Miller ncmiller@orcom.net.nz

Breeders and growers of Sarcophilus orchids

Advice available

Email for our latest plant list

Sarc flasks available

- i 149 Misty 'Spangles x Yvette (Misty is yellow)
- i 186 **Sunvale Sun Spot** =Cherie x Snowhart
- i 242 hartmannii x Cherie #668
- i 244 hartmannii x Cherie #655
- i 245 Cherie #655 x hartmannii
- i 255 Fairy x Zoe
- i 277 **Sunvale Sunset** =Fizzy Dove x Velvet

Plants can be sent deflasked to avoid any breakages. Postage extra.

See you at the Te Puke Orchid Show, The Orchid Fair at Labour Day weekend
at Russell Huttons, or at the sarco show held in Taradale

The Orchid Tray Company is an internet based company primarily set up to offer orchid accessories to orchid enthusiasts. We have several exclusive products designed especially for orchid lovers and will be expanding our range regularly.

Products

- Trays
- General Pots
- Squat Pots
- Clear Pots
- Port Pots
- Basket Pots
- Specialty Pots
- Fertilizers/Sprays
- Accessories
- Wire Hanging Baskets
- Wooden Hanging Baskets
- Meters
- Media

250mm Port Pot-\$4.00 incl. GST



50mm tray-\$5.50 incl. GST



pH meter-\$35.00 incl. GST



Products



Wooden hanging baskets for hanging vandaceous orchids, beautifying or for anything that likes lots of drainage.



Nutriflow slow release fertilizing system.



Auxinone root hormone stimulants for use on orchids and other plants, great for transplant shock when re-potting.

Please visit www.orchidtrays.com.au
Contact Robert Bisetto 0431037372 or George Birss 0413581777 for further product information.