

TOWNSVILLE ORCHID SOCIETY INC.



May 2015 Bulletin

Full contact details are on our website
<http://townsvilleorchidsociety.org.au>

Postal Address:

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AITKENVALE QLD 4814

Hall Location:

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Charles Street, KIRWAN

Patron: Phyllis Merritt
President: Wal Nicholson Ph. 07 4773 4208
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Annual Membership Fees are due **1st September** each year

Family \$20.00 Pensioner Family \$10.00
Single \$15.00 Pensioner Single/Junior \$7.50
Country Family: \$10.00

Details for paying membership fees: BSB:- 064823 Account Number:-
0009 0973

Name of Account: Townsville Orchid Society Inc. Commonwealth
Bank, Aitkenvale

Are you currently un-financial? To remain a member of the Townsville
Orchid Society Inc and to continue to receive the *TOS Bulletin* you need
to pay your annual membership

TOS CALENDAR 2015

May 2015

22nd May 2015 Management Committee Meeting – 7.30pm
24th May 2015 Novice/New Growers Group meeting 1pm followed by
general meeting

A warm welcome to new
members
Terry & Sarah Ruxton

Judges for May

Veteran

A HUGHES
W SEWEL
M BLOOM

OPEN/SPECIES/NOVICE

O KROGH
E BOON
P LUCKE

Birthdays for May

Fred Marnock	2 May
Ann Roberts	2 May
Elva Baillie	12 May
Tom Woods	15 May
Jeanifer Mellick	16 May
Allan Anderson	18 May
Wilma Dean	20 May
Kay Worth	20 May
Sandra Tutty	30 May

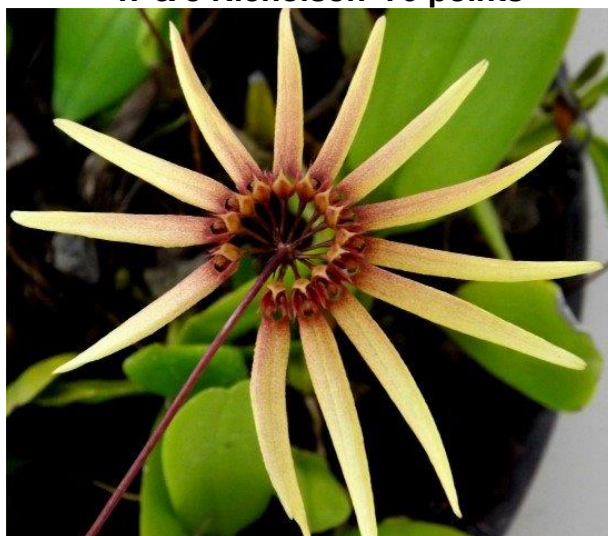


REGISTRAR'S CHOICE

Hybrids/Novice: Den. Miss Singapore R & E Dundas...80 points



Species: Cirr. Makoyanum W & J Nicholson 79 points



Meeting closed: 4.18pm.

MEETING MINUTES TAKEN 26.04.2015

Meeting Opened: 3.52pm by W Nicholson who asked that everyone present sign the Attendance Book. He announced that Cairns Orchid Centre donated 20 plants for raffles following successful show sales.

Attendance & Apologies: as per Attendance Book.

Minutes: Moved as a True Record by M Bloom. Seconded by A Hardy. Carried.

Business Arising From Minutes: Remove C Sewell from previous Minutes re door closer in Ladies Toilet.

Correspondence: Inward: CBA/Cheque A/c Statement; Weight Watchers/Invoice; Campbells Coaches/A/c Paid/Quote Bowen; L Harrison/A/c Paid; ABS Service Solutions/A/c Paid; W&J Nicholson/2xclaims/Paid; Aust. Post/advice/parcels; Southern Cross/Show advertising; C Truscott/show roster/apology meeting; E Boon/C Towers Show; Tabled Plants/Popular Choice; Hall times/Printer details; OQI/agenda items; B&M Elliott/Bribie Is.

OS/July visit; G Wood/Club details; J Pankhurst/new cleaners; **Held Over:** Bowen Field Day; Hall Hire/several emails; Other Society Bulletins; Orchids x 2/Orchids Australia/Aust. Orchid Review/Orcadian; **Outward:** Banking x 2;

L White/Resignation Acceptance; G Wood/answer; J Knowles/hall times; C Truscott/show roster; Orchids Paradise/sponsorship donation; QOS/donation/computer programme; A Anderson & N Grant/list of removed members; Committee Members/meeting & Minutes; Hall Hire/several emails.

J Nicholson Moved Receipt of Inward and Confirmation of Outward Correspondence. Seconded by N Grant. Carried.

Business Arising From Correspondence:

Financial Report: Unable to give full Financial Report but gave a Show Report which was most successful. K Chambers Moved Adoption of Report. Seconded by A Hardy. Carried.

Business Arising From Financial Report: Thank you K Chambers for taking the position.

Novice/New Growers Group Report: given by W Sewell who stated that at May Meeting P Lucke will give a talk on flasking of orchid seeds.

Registrar's Choice: Hybrids & Novice: Den. Miss Singapore gained 80 Points for R & E Dundas. **Species:** Arr. Makoyanum gained 78 Points for W&J Nicholson. Congratulations to the growers.

General Business: Bus organised to go to Bowen Field Day 17 May. Leave hall at 5.30am sharp. A loss occurred on trip to Ingham but of no concern.

Dishwasher: repaired successfully.

Building: Decision made to obtain a quote to have inside and outside of building painted.

Christmas in July Dinner 31.07.2015: Following discussion decided to have Chef On Call to cater. Members will pay \$10. Non-members will pay full price.

Banners: Agreed we purchase another teardrop banner for Bamford Lane. Suggestions made for hanging banner on gutter to be looked at. Prepared to listen to ideas.

New Members: Welcome to Terry & Sarah Ruxton were accepted as new members and placed in the Novice Section.

Irrigation: Council have repaired broken sprinklers around hall.

Light Switches: W Sewell spoke of broken light switch in store room and knobs on fan switches – new ones don't show 1,2,3 grading now. W Sewell would also like to congratulate J&A Knowles on new programme used at show.

Show: Drawing of Raffle at end of each day to be sorted along with other show problems before July show.

Slim Warner & Mrs Arrowsmith: both former members passed away recently and The Society extends Condolences to the families.

Lucky Door: drawn – congratulations to winners.

President's Comments: Another very successful show. Thank you to the Knowles duo for the new computer programme – all went well on many counts. We will need to train a couple as back-up for Jeff.

As I have often said, judging by the volume of sales, there must be many orchid collections in back yards around Townsville whose owners only come to our notice at show time.

Congratulations to the winners and to all who worked towards the success of the show.

In view of the popularity of our two new signs, the Committee has agreed to purchase another "tear drop" to place at the car park on Bamford Lane. We will just need to invent a more secure form of anchorage, and any ideas for attaching the banner at the front door would be welcome. On a sadder note, elderly members and former members of the Society have taken a battering in recent months. Our previous Life Member Slim Warner passed away as well as long standing Member and Judge, Kathleen Greenway. Previous member Ron Aldridge succumbed to Prostate Cancer and the widow of previous member (Harvey Arrowsmith) Barbara Arrowsmith passed on. We extend to Family Members our Sincere Condolences, and wish those of us left behind brighter news in the future.

We are hopeful of having our hall repainted in and out within the next few months. If anybody feels that a colour change is needed I would like to hear of it. I chose the original colours ten years ago, amongst much controversy, which soon moderated when painting finished.

Our next show is only two months away, followed shortly afterwards with our 'Christmas in July Dinner on **Friday 31st July**, just to keep us all on our toes. That's all for now. Wal Nicholson

VALE – Kathleen Greenway

My earliest memory of Kathleen was attendance at her and Late husband's orchids on a field day in the early eighties.

They were both very active until David's tragic death in Brisbane. Kathleen has probably been more active since then due to her interest in Judging which she took very seriously. I was pleased to see so many members honouring her memory at her funeral on Monday 4th May. Condolences are extended to Kathleen's family.

Novice/New Growers Report:-

At our last Novice/New Growers meeting held on the 26th April at the Townsville Orchid Society Inc. Hall, Charles Street, Kirwan, we welcomed 57 members plus 5 visitors with 2 of our visitors signing up as members on that day. Our guest speaker for the afternoon programme was Jeffrey Knowles who spoke about a fertiliser programme that he suggest that could improve the growing of our orchid plants in the future. With the help of slides Jeff showed what a application of 200ppm nitrogen programme during the flowering development period of a phalaenopsis plant that will promote lateral branching, increase the total

flower count and assure dark green roots. When fertilising plants, roots are much more efficient in the taking up nitrogen than leaves. Foliage feeding alone is not sufficient. Thank you Jeffrey for your expert knowledge on this subject.

Many thanks to all our members who help at our recent Autumn Show and to all our members who will be travelling to Bowen for their annual Field Day activities, we hope you all have an enjoyable time. We would like to thank Fran Ames for her kind donation of a box of orchid plants from the late Les Kennedy collection for raffle prizes at our Sunday meeting was greatly appreciated.

Once again we had a wonderful afternoon tea which was very delicious and we thank you all for your generosity. Your donation of gifts to the Multi Raffle Table and for the purchasing of raffle tickets was fantastic and very much appreciated.

Peter Lucke will be our Guest Speaker at our May meeting to speak about Deflasking plants.

In Noel's Bush House 34

Cattleytonia Jamaica Red "Chung Hwa"
(W.W.G. Moir 1972)

I notice from the label that I have owned this orchid for a long time – the first notation is of a repotting in September 1997, which is around the time I started to record dates on my orchid labels. I started to grow orchids in 1988, so I was definitely slow to put dates on labels. I strongly recommend this practice to all readers, as it removes all doubts over when the orchid was last repotted or when it was purchased. When you purchase a new orchid, immediately put the month and year on the back of the label, and don't forget to write your TOS number there.

Cattleytonia is a hybrid from a combination of a species of *Cattleya* (*C.*) and a species of *Broughtonia* (*Bro.*), usually *Bro. sanguinea*. *Broughtonia sanguinea* is found on the islands of Jamaica and Cuba in the Caribbean and is valued as a hybrid parent for its shape, colour and petal substance. 'Sanguinea' means "blood-red".

Cattleytonia Jamaica Red was bred and named by the well-known Hawaiian breeder, W.W. Goodale Moir, in 1972 and is a hybrid cross between *Bro. sanguinea* and *Cattleytonia* Keith Roth. (*Ctna.* Keith Roth is a primary hybrid between *C. bicolor* and *Bro. sanguinea*.) The Caribbean orchid is dominant in shape and colour, while *C. bicolor* adds larger size to the flowers.

I treat this orchid the same as the other members of the *Cattleya* family, with frequent fertilizing and water but a mid-winter rest with

less water. I love the way the heads of flowers are held well above the leaves to show their beauty. The plant seems quite hardy, with no obvious problems with pests. An aside – I like to walk around my bush house saying "Chung Hwa"! I have not been able to trace the origins of the clonal name "Chung Hwa", but "Chunghwa" (or "Zhonghua") is a common name for China.

The curse of the genus name-changers has struck *Cattleytonias* as well as many other orchids recently – some *Cattleytonias* are now not *Cattleytonias*! If the plant is a combination of *Broughtonia* and *Cattleya*, it is still a *Cattleytonia*, but those that involve *Broughtonia* x *Gur. aurantiaca* or *Gur. bowringiana* are now ***Guaritonias* (Grt.)** This means the popular *Cattleytonia* Why Not (*Bro. sanguinea* x *C. [now Gur.] aurantiaca*) is now *Guaritonias* (Grt.) Why Not.

A further complication – if the plant is a combination of *Guaritonias* and a hybrid that is still a *Cattleytonia*, then the name is now ***Guaricattonias* (Gct.)**. So *Ctna.* Mem. Henry Goldberg (*Ctna.* Keith Roth x *Ctna.* [now *Grt.*] Why Not) is now *Guaricattonias* (Gct.) Mem. Henry Goldberg. Yes, it makes my head hurt, too.

Noel Grant, May 2015

References:

The Internet Orchid Species Photo Encyclopedia
<http://www.orchidspecies.com/indexb.htm>

Computer program "OrchidWiz"

"Orchid Names and Their Meanings" by Hubert Mayr,
A.R.G. Gantner Verlag K.-G. 1998 (translated by M. Schumucker)



Cattleytonia Jamaica Red 'Chung Hwa'

VETERAN SECTION

Type: PHRAGMIPEDIUM		
Place	Name	Owner
1 st	<i>Phrag.</i> Green Hornet	W & J Nicholson
2 nd	<i>Phrag.</i> unknown	W & J Nicholson
Type: VANDACEOUS		
EXHIBITION 65 AND ABOVE		
Place	Name	Owner
1 st	V. Robert's Delight	N & M Grant
2 nd	V. Varavuth x V. Gordon Dillon	N & M Grant
3 rd	V. Royal Sapphire x V. Fuchs' Gold	N & M Grant
MISCELLANEOUS		
Place	Name	Owner
1 st	<i>Aerdv.</i> [Dar] Fuch's Cream Puff x <i>Van.</i> [Vasco] Tham Yuen Hae	N & M Grant
2 nd	V. Precious	N & M Grant
3 rd	V. Pine Rivers	N & M Grant
Type: CATTLEYA		
MINIATURE TO 69 MM		
Place	Name	Owner
1 st	<i>Gct.</i> Barrel of Brandy	G & S Kelly
2 nd	<i>Gr.</i> [Ctna] Why Not	W & J Nicholson
3 rd	<i>Gct.</i> Barrel of Brandy	G & S Kelly
CLUSTER		
Place	Name	Owner
1 st	<i>Ctt.</i> [Slc] Merinda Lust	G&S Kelly
ANY OTHER HYBRID		
Place	Name	Owner
1 st	<i>Ett.</i> [Eplc] Volcano Trick	G & S Kelly
Type: DENDROBIUM		
SPATHULATA 65 MM AND OVER		
Place	Name	Owner
1 st	<i>Den.</i> Charelle x <i>Den.</i> Ray's Twist [<i>Den.</i> Fran's Twist x <i>Den.</i> <i>gouldii</i>]	W & J Nicholson
2 nd	<i>Den.</i> Charelle x <i>Den.</i> Ray's Twist [<i>Den.</i> Fran's Twist x <i>Den.</i> <i>gouldii</i>]	W & J Nicholson
SPATHULATA TO 64MM		
Place	Name	Owner
1 st	<i>Den.</i> Juleen High (<i>johannis</i> x <i>lasianthera</i>)	W & J Nicholson
2 nd	<i>Den.</i> Juleen High (<i>johannis</i> x <i>lasianthera</i>)	W & J Nicholson
Type: ONCIDIUM ALLIANCE		
BRASSIA INFLUENCE		
Place	Name	Owner
1 st	<i>Brat.</i> [Mtssa] Olmec	W & J Nicholson
2 nd	<i>Brat.</i> [Mtssa] Sherlob	W & J Nicholson
3 rd	<i>Brat.</i> [Mtssa] Kawai's Choice	W & J Nicholson
NEW NAMES AND ALTERATION		
NEW NAMES.... <i>Den.</i> Fran's Twist x <i>gouldii</i> <i>Den.</i> Ray's Twist <i>Den.</i> <i>johannis</i> x <i>Den.</i> <i>lasianthera</i> <i>Den.</i> Juleen High		

OPEN SECTION

Type: PAPHIOPEDILUM		
Place	Name	Owner
1 st	<i>Paph. Pinocchio</i>	C Osborne
Type: CATTLEYA		
EXHIBITION 70MM TO 114 MM		
Place	Name	Owner
1 st	<i>Rlc. Frank Fordyce</i>	P Lucke
2 nd	<i>Rlc. Pastoral 'Innocence'</i>	P Lucke
3 rd	<i>Rlc. Chincogan x C. Shellie Compton</i>	P Lucke
ANY OTHER HYBRID		
Place	Name	Owner
1 st	<i>C. Calico Spots</i>	C Berzinski/L Mutch
2 nd	<i>Rolf. Keowee x B. nodosa</i>	C Berzinski/L Mutch

SPECIES SECTION

Type: CATTLEYA ALLIANCE		
Place	Name	Owner
1 st	<i>Epi. difforme</i>	M Bloom
2 nd	<i>C. purpurata</i>	P Lucke
3 rd	<i>Gur. bowringiana</i>	N & M Grant
Type: DENDROBIUM HARD CANE		
Place	Name	Owner
1 st	<i>Den. insigne</i>	W & J Nicholson
Type: ANY OTHER		
Place	Name	Owner
1 st	<i>Bulb. makayoanum</i>	W & J Nicholson
2 nd	<i>Spathoglottis Parsonii</i>	W & Nicholson

NOVICE SECTION

Type: CATTLEYA LARGE		
Place	Name	Owner
1 st	<i>B. nodosa</i> hybrid	A Hardy
Type: CATTLEYA SMALL		
Place	Name	Owner
1 st	<i>Den. Red Toro x Den. Touch of Gold (Den. gouldii x Den. johannis)</i>	M Sanim
2 nd	<i>Den. Miss Singapore</i>	R & E Dundas
3 rd	<i>Den. Josephine</i>	G Rutherford

20th Australian Orchid Council Conference & Show – Mackay 2015

"Orchids in Paradise" is a combined 20th Australian Orchid Council and 50th Tropical Queensland Orchid Council conference and show. The AOC conference provides an opportunity for orchid lovers from all parts of Australia to meet and enjoy spectacular orchid displays and learn from world-leaders in orchid breeding and culture. The AOC conference is a triennial event, held in a different state of Australia every three years. It will be the first time that the AOC conference has been held in Mackay and only the second time that a conference has been held in tropical Queensland. The 2015 event will also be the first time that the AOC conference has been combined with a major regional Orchid Conference. Additionally, foliage and allied plants will be included in the show schedule for the first time.

The Orchid Conference will be held at the Mackay Entertainment and Convention Centre (MECC) on **Friday the 18th September to Wednesday 23rd September 2015.**

More Details can be found on the following website:

<http://orchidsinparadise.com.au/>

Points for Tabled Plants April 2015					
Name	Veteran	Open	Novice	Species	Aggregate
Bailey, David & Armitage, Lorraine			4		4
Berzinski, Col & Mutch, Lyn		42		3	45
Bloom, Marie		6		19	25
Christophers, Grant & Siarni, Alis		20		4	24
Cooper, Peter & Mary		9			9
Donnell, Karen			7	4	11
Dundas, Robyn			13	2	15
Fighera, Bruno		40			40
Grant, Noel & Maureen	110			82	192
Hardwick, Noel		3			3
Hardy, Ann			15		15
Kelly, Greg & Santina	104			6	110
Knowles, Jeff & Alison	7			4	11
Lucke, Peter & Joanne		53		11	64
MacIntyre, Joan		3		5	8
Marnock, Fred & Donna		34		13	47
Nicholson, Wal & Jean	282			86	368
Osborne, Carl		20			20
Ostrowski, Janennive		4			4
Palin, Norma		7			7
Phillips, Tina		7			7
Rushworth, Marguerite & Craig			1		1
Rutherford, Gillian			6	0	6
Scott, Ron		7			7
Sibthorpe, John & Wendy				4	4
Sewell, Warren & Clara	19			4	23
Swart, Caroline			1		1



ENVIRONMENTALLY FRIENDLY*

Quincan 10-20mm in 20kg bags.
Also Available Orchid Mix.

queries please phone Noeleen at Day Dawn Nursery on 07 4778 2272.

“What Phalaenopsis Growers need to know about Nitrogen and the various forms of Nitrogen.”

In March this year, Alison and I attended the Taiwan International Orchid Show and the “2015 International Phalaenopsis Alliance Symposium and Taiwan International Orchid Symposium” which was run as part of the show. One of the presentations was entitled “What Phalaenopsis Growers need to know about Nitrogen and the various forms of Nitrogen” by Dr. Ying-Tung Wang and Dr. Yao-Chien Alex Chang, who did the actual presentation. I presented some of the important aspects at our last Novice / New Growers’ meeting. This article lists many of the main points covered, with a bit of a local flavour thrown in.

Although the focus is on Phalaenopsis orchids I guess that many of the ideas presented could just as easily be used effectively when growing other genera of orchids. Of course all the different growing conditions in all the different orchid houses will influence any decision on implementation. I have not presented the experimental data that led to the conclusions of this topic. Here is a list of some of the conclusions.

1. Phalaenopsis plants produce more and bigger leaves and flowers when fertiliser was used, which should not come as a surprise to anyone – feed your plants and they go better.
2. New leaves and inflorescences are strong sinks of nitrogen (N). That is they take in nitrogen as they grow. Roots and leaves can act as a source of (stored) nitrogen for this.
3. How much nitrogen should be applied? Research has found that low levels of nitrogen does not affect the size of the flowers, but it results in a reduced flower count. The concentration of the nitrogen applied to the plant also has an effect on the timing on flowering. Considering the concentration of nitrogen,
 - a. produces slightly more flowers on the main spike, and
 - b. there were more lateral branches and more than doubling of the total flowers as the nitrogen concentration increased from 0 to 200ppm. (parts per million),
 - c. although no difference in flower diameter.
4. With ample fertilisation, the nitrogen in the inflorescence is partly composed of the following:- Nitrogen absorbed during large plant stage : Nitrogen absorbed during forcing = 31 : 69.

5. Findings:

- a. The growing young leaves are the major sink during vegetative stage and the inflorescence is the major sink during the reproductive phase.
- b. In a nutrient abundant environment, the nitrogen demand of inflorescence from spiking to bud visible stage was provided by 31% from nitrogen previously stored during mature plant stage, and 69% from recent fertiliser applications. Thus, proper fertilisation must be done before and after spiking.
- c. The stored nitrogen may come from mature leaves or roots.
- d. Nitrogen is important for Phalaenopsis, not only for vegetative growth, but also for flowering.

6. Nitrogen comes in different forms:

- a. The three forms of nitrogen in fertilisers are Nitrate (NO_3^-), and, Ammonium (NH_4^+), and Urea $\text{CO}(\text{HN}_2)_2$
- b. Burgeff (1936) showed that nitrate was best used by epiphytic autotrophic orchids in the light, while ammonium was necessary for growth in the dark, or in the light, of the more heterotrophic and saprophytic species.
- c. The various forms of nitrogen can affect the pH of the growing medium (Urea and Ammonium – decreases the pH, while Nitrate – increases the pH)
- d. Wang (2008) reported that at least 50% and preferably 75% of nitrogen must be in the nitrate form for best performance, whether the Phalaenopsis orchids were planted on a bark substrate or in sphagnum moss.
- e. When grown in sphagnum moss, plants have the highest rate of spiking (Wang, 2008, Chang, 2010), fresh weight, and leaf number at a ratio of ammonium : nitrate = 25% : 75% (Chang, 2010)
- f. Compared to ammonium, nitrate induces the accumulation of more calcium (Ca), potassium (K), and organic acid in plants. Phalaenopsis leaves must have high levels of potassium.
- g. As the ammonium : nitrate ratio increased from 0% (no ammonium) to 100%, the level of ammonium and phosphorus (P) in leaves doubled, while nitrate levels and potassium levels remained unchanged. The concentration of calcium in the leaves almost halved

7. What does the label on the fertiliser you use tell you?

Consider the following three examples. Both the Peters and Flowfeed are available in the TOS members’ shop. The information comes from the labels on the fertiliser bags.

- a. Peter’s WinterGrow Special N : P : K = 20 – 4.4 – 16.6
 - i. This tells us that the total nitrogen is 20%
 - ii. 12% nitrate nitrogen [60 : 40 = nitrate : ammonium]

- iii. 8% ammonium nitrogen
 - iv. 0% urea nitrogen
 - v. Available phosphorus 4.4%
 - vi. Available potassium 16.6%
 - vii. Minors – sulphur, iron, manganese, boron zinc, copper, molybdenum
- b. Flowfeed HP8 7.1– 11.1– 27.6
- i. Total nitrogen 7.1%
 - ii. 4.7% nitrate nitrogen [66 : 34 = nitrate : ammonium]
 - iii. 2.4% ammonium nitrogen
 - iv. 0% urea nitrogen
 - v. Available phosphorus 11.1%
 - vi. Available potassium 27.6%
 - vii. Minors – sulphur, iron, manganese, boron zinc, molybdenum
- c. Seasol seaweed concentrate ?– ?– ?
- i. Total nitrogen ?%
 - ii. Available phosphorus ?%
 - iii. Available potassium - some
 - iv. Minors – some
 - v. Growth Stimulants - yes
 - vi. “Seasol is a plant conditioner not a nitrogen based fertiliser”

8. What is the best method of applying fertiliser - to the roots or to the foliage?

- a. Chang (2010) reported that new roots were more efficient in taking up nitrogen than old roots, which were in turn more efficient than leaves. (The uptake efficiency: New roots > old roots > leaves.)
- b. He also said that there was no difference on nitrogen uptake efficiency between upper and lower leaf surfaces.
- c. Both roots and leaves are capable of nitrogen absorption.
- d. Newly grown leaves and roots are major sinks for nitrogen.
- e. Foliar feeding alone is not sufficient.

9. In summary.

- a. Phalaenopsis orchids are a heavy feeders and require 200 ppm nitrogen to grow and flower well.
- b. Nitrogen must be applied well throughout the vegetative growth and continued during the period of spike development.
- c. Application of 200 ppm nitrogen during the flowering development period promotes lateral branching, increases the total flower count and assures dark green leaves.
- d. Nitrogen does not affect flower size, only flower count.
- e. Fertilisers of high nitrate to ammonium ratios should be used for superior flowering performance and to assure high rate of spiking.
- f. Roots are much more efficient in taking up nitrogen than leaves. Foliar feeding alone is not sufficient.

10. How to mix up a fertiliser solution with a particular concentration of nitrogen.

Consider the Winter Grow Special fertiliser listed above with a nitrogen content of 20%. If 1g of this fertiliser is mixed in 1L of water then the concentration of nitrogen in the fertiliser solution will be 200 ppm. If you require a 100ppm nitrogen solution then you will need to mix 0.5g in 1L of water. Generally, if the content of the fertiliser is Y% then mixing 1 g in 1L of water (1g/L) gives a fertiliser solution with a nitrogen concentration of $10 \times Y$ ppm.

If you want a solution with a nitrogen concentration of K ppm by using a fertiliser with a nitrogen content of Y%, then you would mix $K/10Y$ g in 1 L of water. Using our wintergrow example: if we want 100ppm N then we would dissolve $(100/10 \times 20) = 0.5$ g in 1L of water. If you are using the HP8 and wanted a fertiliser solution with a concentration of 200ppm N then you would mix $(200/10 \times 7.1) = 2.8$ g / L.

Remember that it is good growing practice to test any new fertiliser program you might be thinking of implementing in your orchid house on only a few plants at first.

Happy growing.
Jeff Knowles
