

Official Newsletter of the Australian Hydroponic & Greenhouse Association Inc. Since 1990 www.ahga.org.au Volume 1 2008



# **Hydroponics In Schools**



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### From The Editor

The AHGA is working hard behind the scenes on the long awaited national fresh tomato levy.

The existing vegetable levy @ 0.05% of Gross Vegetable Product (GVP) has never applied to tomatoes. The tomato industry therefore misses out on the massive R&D funding asset enjoyed by other crops.

Both protected cropping and field growers are involved in the national fresh tomato levy and will consider it's introduction on all tomatoes sold at the farm gate.

Several of our committee have joined AusVeg & HAL on a steering committee which follows a strict 12 step consultative process, before bringing it to the Federal Parliament for legislation by the end of 2008.

Every tomato grower will be given the opportunity to vote on the levy rate, and the breakdowns across R&D, Promotion & Biosecurity budgets. The federal government match R&D Levy money \$:\$, but not so for promotion & biosecurity.

The allocation of tomato levy money & investment will be decided by the involved grower & levy payer.

Hope to see you all at the AHGA AGM @ the HFF Lilydale conference 16/4/08 - see centerfold. Saskia

#### Front cover photo:

Frensham Girls High School in Mittagong NSW have installed a 90 plant soilless 'Mini Farm' system courtesy of hydromasta.com.au

#### DISCLAIMER

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Any correspondence concerning the newsletter should be sent direct to the editor.

# **Hydroponics In Schools**

#### "I thought tomatoes came from the shops!"

Educating future generations about growing, harvesting, selling & cooking produce.

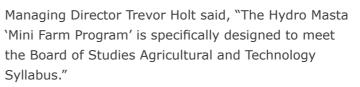
So many school subjects can be taught with the principles & hands-on approach of hydroponics.

Biology, chemistry, history, mathmatics, business, geography, engineering, physics, let alone horticulture, can all be learnt by simple hydroponic experiments.

Hydroponics isolates the crop from the soil so controls can be set to understand & achieve the perfect conditions to grow edible crops. Without geting 'dirty', no weeds and no soil borne pests and diseases.

A Schools Mini Farm program can be totally self funded by selling the fresh produce to their tuck shop, school staff, parents and the wider community.

The Mini Farm Program is a creation of Hydro Masta which has been involved in the industry for the past 22 years. The Sydney based hydroponic supplier provides specialist soilless education packages to schools, T.A.F.E and home growers Australia wide.



Teacher support packages include hydro grow kits, plant supply, DVDs, books, maintenance charts, check lists as well as telephone and email support.

HydroMasta's clients include several Sydney schools like the James Ruse Primary School, St Ignatius College, and the Ryde College of T.A.F.E. and as far away Toowoomba High School in QLD.



soilless experiment. Top: Nutrient Film Technique (NFT) Lettuce



AHGA National Conference

Educating students on the benefits of chemical free produce & nutritious food are just some of the lessons learnt in a

Bottom: Expanded Clay media systems can be combined with NFT for large crops such as tomatoes

Frensham High School in Sydney (see pictres) has recently installed a 90 plant Mini Farm system. Mini Farms are based on the commercial farm technology and use the nutrient film technique (NFT) of food production in gently sloping channels. A constant, yet thin layer of nutrient rich water trickles across the plants roots.

The students have the ability to grow salad, herbs and a variety of other crops such as tomatoes, strawberries, cucumbers and capsicums.

The aim is to have a "hands-on" program which will teach children how plants grow, where fruit & vegetables (and many cut flowers) come from. Hydroponically grown food is nutritious, has a longer shelf life, and yields far more per plant than conventional methods. In the future, hydroponics will be the preferred way of food production given that the

availability of arable soil and land is diminishing.

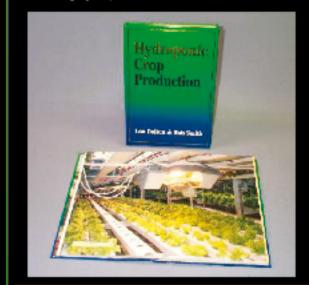
A recent announcement by the Federal Health Minister, Nicola Roxon, has recognised the importance of school projects like this and has made a commitment to fund a Kitchen Garden Pilot Program in 190 primary schools across Australia. A budget of \$12.8m over 4 years has been allocated towards this project to integrate the growing and cooking of food by children in years 3 - 6.

The program will be based on the successful Stephanie Alexander Kitchen Garden Program in Victoria, and tackles the rising trend of childhood

3

#### Hydroponic Crop Production

Finally the hydroponic industry has an up to date commercial text book written by leading hydroponicists Lon Daiton and Rob Smith, two of the most respected authorities on hydroponic cultivation. A must have resource for anyone currently growing commercially or considering hydroponics as a future venture.



#### Subjects Covered

Plant structure, propagation methods, equipment required, environmental control, heating and cooling options, artificial lighting, greenhouse design, plant nutrition and analysis, pest management, and cropprotection. That's just to name a few of the many subjects that are covered in this one stop commercial hydroponic reference guide!

#### Crop Types Covered

Tomaloes, strawberries, lettuce, celery, cucumbers, herbs, bressica's, beens, roses, carnations, are just a few of the many crop types covered, including archid production!

#### Postage : \$10.00 Australia wide.



www.hydromasta.com.au Email: trev@hydromasta.com.au

obesity by giving children hands on experience in healthy eating.

By introducing children to the pleasures of growing and preparing fresh food and sitting around a table to share a meal, the Kitchen Garden Program provides an opportunity to develop positive eating behaviour in children's early years.

This curriculum based health initiative stimulates a child's interest in healthy eating, not becasue it's "healthy" but becasue the hands-on approach is fun, and the food tastes great.

"The current pilot schools have transformed the way that students think about food - before the kitchen garden, one of the students said to me 'I thought tomatoes came from the shops'." said culinary legend and program founder Stephanie Alexander.

> For more information on Hydro Masta's Mini Farm School Program www.hydromasta.com.au/schools trev@hydromasta.com.au



**Above:** Tiered soilless growing systems can make efficient use of small space. Small leafy greens such as herbs grow well in both media based &/or nutrient flow technique (NFT) systems

AHGA National Conference

## www.hydroponics101.com

Courtesy of Grodan @ www.hydroponics101.com

#### Subjects Applicable

Hydroponics is applicable in many classrooms - from kindergarten to college. Some of the subject matters that can be covered include

- Biology: understanding photosynthesis, experiments with pH and nutrients, microbes and root development, light colour spectrum effects, etc.
- Chemistry: Interaction of various nutrients, pH adjusting, calculating ppm of nutrients, etc.
- History: Ancient history and hydroponics, scientific pioneers of hydroponics.
- Maths / Business: sell cuttings/seedlings for school project; calculate cost to produce and selling price.



- Geography: Research plants from around the world
- Engineering / Physics: system designs, capillary movement

## Do you want to save Thousands? And keep growing this summer?



### Nutrient & Runoff Filtration & Re-use Systems

#### Why teach hydroponics?

 Growing hydroponically is no longer "the way of the future". Most of the world's greenhouse vegetables are grown this way TODAY.

• In hydroponics, it is feasible to test the effect of any and all parameters such as a plant's given nutrient uptake at any stage. Tests such as these allow growers to improve production greatly and consequently help to feed the world's growing population. As an example, tomato plants grown hydroponically yield almost three times as much fruit as a soil-based crop

• The World Health Organization announced that they consider hydroponics to be the most important subject to be studied in the new millennium, as it is the only way to feed the world and do so in an environmentally friendly way.

• A number of countries have already prohibited the use of methyl bromide (a chemical product used for soil sterilization) and the only choice for growers is to grow their crops hydroponically.

greeme@growertechnology.con www.growertechnology.com

Bill Bright, Melbourne mobile 0414 922827

Graeme White, Brisbane Phone 07 31023454







#### **Climate Change & Protecting Nature**

In most of Northern Europe, it is prohibited to leach drain water from most crops into the ground in order to preserve the purity of the natural water system. The only choice is to use a hydroponic system in which one can re-circulate drain water. The same situation is likely to spread to other countries.

#### Last but not least: Hydroponics is fun!

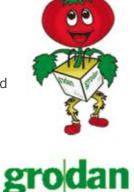
Hydroponics is a fun way for students to learn practical application of subjects such as chemistry, biology, business administration, art, math and creative construction.

• The project involves simple maths (mixing nutrient).

• The student can write down growth observations on a report with drawings of what they see and do. (English)

 They learn that you don't need soil and that plants needs food and oxygen. (Biology)

• The experiment only requires the purchase of some hydroponic nutrient, the rest the kids can bring from home.



### Hydro Products From Home

Cutting the top off soda bottles and putting it back in the bottle up side down, creates a simple, transparent growing system. (See photo below)

The liquid the plant will be growing in should always be pH adjusted before balanced nutrients are added.

Home made wicks can assist but always ensure the water level in the bottle touches the bottle neck (which now hangs inside the bottle).

See opposite page for more ideas on how to understand what a plant needs to grow.





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You can now make many experiments with any combination of the 3 groups. Example: Grow the plant in Lego blocks. Add milk to the nutrient solution and see if the plant can grow without light.

Once the classroom media have been tried in the bottle experiments - then consider continuing with some regular hydroponic growing media such as Grodan Growcubes, Clay pellets and Coir.



#### For more information

\* simple experiment ideas & FAQ \* leaflets to download, growing tips www.hydroponics101.com

Sydney June 2009

AHGA National Conference

### Hydroponics101 **School Experiments**

#### **Inexpensive Classroom Projects**

The experiments are meant as a fun introduction to hydroponics. We suggest that anybody new to hydroponics start with the 'soda bottle' experiment.

They will learn what you feed a plant matters more than what the plant grows in.

#### **Different Growing Media**

(Add nutrient solution, wick and plant) Use Lego blocks as growing medium in the container. Use shredded fabric as growing medium in the container. Which kind of fabric works the best? Why do you think that is so? Use shredded paper as growing medium. What works best leaflets, newspaper or your old essay? Try using little rocks from the driveway as growing medium.

#### **Different Nutrient Solutions**

(Add growing media, wick and plant) Regular solution as recommended on the reservoir. Replace 20% of the nutrient solution with Coca-Cola - add baking soda to adjust pH.

Let the kids make other suggestion to additions to the nutrient solution; such as milk, orange juice, Kool aid, coffee... Be sure to check that the pH is around 6.

#### **Different Environments**

Let kids blow air into the water in the reservoir at a regular interval. Do these plants do better than the other plants (with increasingly stagnant water)?

What if you blew air on the plant? Does it make a difference? (It might, since the plant gets more CO2)

Temperature - does it matter?

Sun light, no light, light from fluorescent light, light from a table lamp: what works best?







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### **UV Sterilisation & Water Recycling**

#### Disinfecting with minimal effect on dissolved nutrients By Marcus van Heyst

I would be surprised if there was a grower in business today who would not, in some way or another, be affected by the availability, or lack of water.

Many growers are starting to feel the pinch with water restrictions.

In fact, in some areas, councils are removing water rights from growers altogether thereby effectively putting the growers out of business.

To avoid reaching this point and to reduce the reliance of good quality fresh water, many growers are considering recycling the water they use.

The problem is that in order to minimise the risk of spreading disease, it is important to also disinfect the recycled water.

There are many forms of water disinfection available but in fact very few of them are actually suitable for recycled water. Most of the technology is suitable for fresh water only.

In situations where the grower wants to not only

recycle the water used but also maximise the benefit from fertilisers added to their plants, it is important to utilise water disinfection technology which maximises the treatment of diseases such as bacteria, fungi, nematodes, and in many cases viruses while minimising the effect on dissolved nutrients.

According to research carried in the "Proefstation" (Research Station) in Naaldwijk, Holland, the only reliable way to achieve this is by either heat treatment (pasteurisation) or by the use of UV technology using systems specifically designed for Horticulture.

Heat treatment is only viable in Australia if the heat can be sourced economically.

The most practical, reliable and proven system in Australia is based on UV technology.

The most suitable UV systems are designed specifically for horticulture and are self-monitoring, self cleaning, and require little maintenance.

One of the leading manufacturers of this technology is Priva.

AHGA National Conference



In the Priva Vialux range there are two UV systems available. These are high-pressure (HP) and lowpressure (LP) UV systems (pictured). The HP/UV system produces UV-C radiation between 200-300nm, whereas the LP/UV system produces UV-C radiation almost exclusively at about 254nm.

In most greenhouses, the water to be disinfected has a poor transmission rate for UV rays.

The use of these UV lamps means it is no longer necessary to dilute drain water with reservoir water.

The UV disinfection system works by using the active UV-C. This has a wavelength of approximately 250 nanometers, and alters the DNA of micro-organisms, such as microbes, bacteria and moulds, destroying them in the process. UV-C light also makes viruses non-active.

The permeability of UV-C light depends on the transmittance level (T10) of the water. The Vialux automatically calculates and operates at the optimum T10 value.

For selective disinfection (microbes, bacteria and moulds) the dose of UV-C intensity is 100mJ/cm2, and for total disinfection (including viruses), the minimum UV-C dose is 250mJ/cm2. These doses render germs completely inactive.

If you would like more information on the UV Sterilisation system contact Marcus from Powerplants Australia the Official Australian Priva Agent on 03 8795 7750.

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Photo opposite page: Priva Vialux HP -High pressure UV installation for tomatoes Above: Priva Vialux LP -Low Pressure UV sterilisation unit Available from Powerplants Australia Pty Ltd 10 Wedgewood Rd HALLAM VIC 3803 www.powerplants.com.au

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### **Hydroponic Farmers Federation Inc**

#### "Just Do It" 2008 Conference, Trade Show & Farm Tours

The premier hydroponic and greenhouse event for 2008, the Hydroponic Farmers' Federation (HFF) biennial conference and trade show, will be held at the Swinburne University of Technology's campus in Lilydale, Victoria, from 16-18 April 2008.

The conference format includes a trade display, presentations by industry experts and practical workshops, as well as hydroponic farm visits.

Admission to the trade show is free, which will be open to the general public on Wednesday April 16<sup>th</sup> from 3 to 7pm.

The theme of the conference is "Just do it". Everyone wants to grow better crops, make more money and spend more time with their families, but despite the best intentions, are not always successful. The 2008 conference will provide delegates with key building blocks on which to build better businesses and hopefully achieve some of these outcomes.

The Hydroponic Farmers' Federation is open to all hydroponic farmers Australia wide. Its membership of over 100 includes grower members from Victoria and interstate, as well as industry members (businesses offering support to growers), supporter members and affiliate members.

The HFF grew from a small self-help group to the large association it is today through a commitment to furthering the hydroponic industry through growers supporting each other.

## ESKIMO

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The primary aims of the HFF include;

\* To provide representation and advocacy for and on behalf of its members to all levels of government and other relevant organisations on issues relevant to the hydroponic industry;

\* To promote hydroponic produce and continue to develop its market share;

\* To enhance grower performance through education, training and networking;

\* To provide members with the opportunity to share the benefits of group purchasing and marketing;

\* To encourage and facilitate research relevant to the hydroponic industry.

The Australian Protected Cropping Industry currently employs in the order of 10,000 people, and is the fastest growing food production sector in the country, with an expansion rate of around 6%.

The reasons for this industry growth include: - faster plant growth, higher yields, improved guality and the ability to grow out of season, exclude and control pests and weeds.

Furthermore, hydroponically grown crops require only a fraction of the water required by conventionally grown crops, while delivering these benefits.

> For more HFF conference information Simon Monk @ ASN Events P/L Ph 03 5983 2400 sm@asnevents.net.au www.hff.org.au



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### **Hydroponic Farmers Federation Inc**

### "Just Do It" 2008 Conference Program

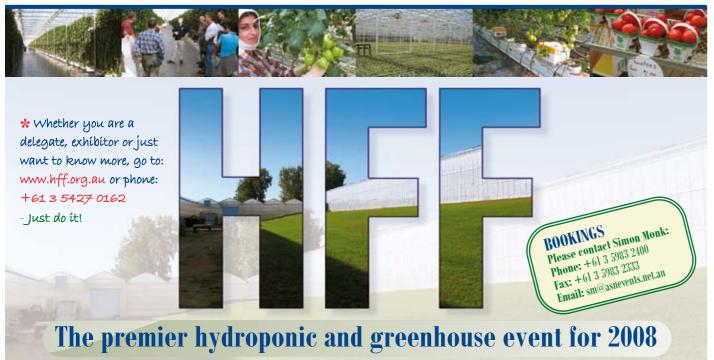
#### Day 1 Wednesday 16th April 2008

3.00 – 6.00pm - Registration			
3.00 – 6.00pm - Trade Exhibition open to the public			
6.30pm	- AHGA AGM	Room 1.	
7.30–8.30pm - Trade Area		Welcome cocktails	

#### Day 2 Thursday 17th April 2008

8.00am Registration & Trade Exhibition
8.45am - Welcome & Official Opening
9.00am - State Minister for Ag Joe Helper
9.20am - Paul McCarthy (Motivational Speaker)
"Things don't change - we change"
10.00- 11.10am - Trade area & Morning Tea
11.20am - Simon Ramsey (VFF President)
& Richard Anderson (Chair VFF Water Council)
11.50am - Graeme Smith
"European Greenhouse Study tour 2007"
12.20pm - Trade Area & Lunch
1.30pm -2.10pm Concurrent presentations

ROOM 1 - Paul Horne "IPM Technologies" ROOM 2 - Roelf Schreuder "New Crops for Hydroponics; egg plant etc" ROOM 3 - Grenville Stocker "NFT lettuce & herbs" 2.20 – 3.00pm - Concurrent presentations ROOM 1 - Wilson Lennard "Integrated Aquaponic Solutions" ROOM 2 - Phil Johnson "Optimise Climate control for less 'stress" ROOM 3 - Herman van der Gulik "Capsicums" 3.00 – 4.00.pm - Trade Area & Afternoon Tea 4.10 – 5.00pm - Concurrent presentations ROOM 1 - Godfrey Dol "Labour Management" ROOM 2 - Mark Wittman "Substrates and getting the best from watering" ROOM 3 - Len Tesoriero, NSW DPI, "Plant Health" 5.00 pm - Trade Area 5.10 - 5.40pm - HFF AGM 7pm - Conference Dinner @ The York 8.30pm - HFF Award Presentations



Swinburne University of Technology's campus in Lilydale, Victoria. \* Conference includes a trade display, presentations by industry experts, practical workshops, and farm visits. \* Trade show open to the general public on Wednesday April 16th from 3 to 7pm. \* Learn key building blocks on which to build better businesses. 16-18 April 2008

#### 9.00 -9.40 am - Concurrent presentations

ROOM 1 - Graeme Smith

8.00am - Trade Exhibition

"Costing new projects, & Where is the best place to grow greenhouse crops in Australia?"

ROOM 2 - Grenville Stocker "NFT lettuce & herbs"

ROOM 3 - James Altmann, Biological Services "IPM"

9.50 - 10.30 am - Concurrent presentations

ROOM 1 - Roger Gaudion, NAB Agri Business

Day 3 Friday 18th April 2008

"Project Financing

ROOM 2 - Herman van der Gulik "Capsicums"

ROOM 3 - Godfrey Dol "Labour Management"

#### 10.40 - 11.30 am - Trade Area Morning Tea

11.40 – 12.20pm - Concurrent presentations

ROOM 1 - Steve Randall

"How to evaluate new investments; My Story from a Flower Grower's perspective."

ROOM 2 - Len Tesoriero, NSW DPI, "Plant Health"

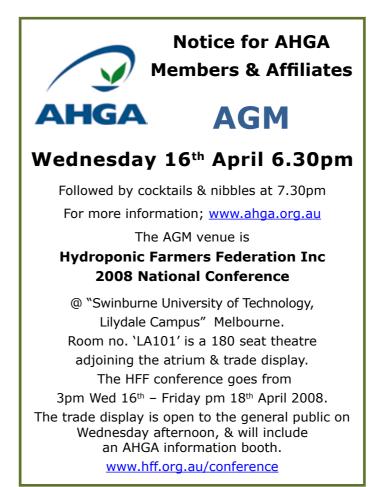
ROOM 3 - Geoff Connellan

"Developments in heating and cooling technology"

12.30 – 1.00pm - Conference Wrap Up.

1.10 pm - Trade Area & Boxed take away lunch

1.45pm - Farm Visits



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AHGA National Conference

#### **Hydroponic Farm Tours**

#### Farm Visit 1 - Gerberas

The Big Bouquet is owned by Bert and Margriet Rijk, and has been operating since 1998. Operating a 12,000 m<sup>2</sup> glasshouse, the Big Bouquet's primary crop is Gerberas.

#### Farm Visit 2 - Caps, Toms, Cucumbers, Eggplant, Lettuce & Herbs

Gateway Hydroponics was established in 1999 by Brett and Tony Spurling.

Their original polyhouse covered 3000 m<sup>2</sup>, growing tomatoes. They extended to 5000 m<sup>2</sup> in 2002. In 2006 they changed from tomatoes to capsicums, although they still grow 7 rows of tomatoes, plus Lebanese Cucumbers, Eggplant, Lettuces and various herbs for their very active farm-gate.

#### Farm Visit 3 - Tomatoes & Strawberries

De Vincentis Brothers operate a 1200 M2 Harford greenhouse on the Warburton Highway in Wandin, growing NFT tomatoes, and also run around 1.5 acres of strawberries outdoors in rockwool. Gino and Mario also run a very busy farm-gate.

#### Farm Visit 4 -TBA

#### **Online Registration available at;**

www.hff.org.au &/or www.hff2008conference.org

#### For more HFF conference information

Simon Monk @ ASN Events P/L Ph 03 5983 2400 sm@asnevents.net.au

Registration	Cost	Ex GST

Hff Member	\$198
Hff Partner/employees	\$198
Non Member	\$385
Hff Member Thurs Only Incl Dinner	\$120
Hff Member Thurs Only Excludes Dinner	\$ 70
Non Member Thurs Only Incl Dinner	\$220
Non Member Thurs Only Excludes Dinner	\$180
Hff Member Fri Only Incl Lunch/farm Visit	\$120
Non Member Fri Only Incl Lunch/farm Visit	\$220

#### **Registration Includes**

- Tea, Coffee and cake on Wednesday
- Morning and afternoon tea on Thursday
- Lunch on Thursday
- Morning tea & take away lunch box on Friday
- Conference dinner on Thursday night at 'The York on Lilydale'. The three course meal is inclusive of pre-dinner drinks and table drinks until 11pm.

Beer, wine and soft drink only. A free shuttle bus for the dinner is available from other accommodation to the York on Lilydale.



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### **HFF Conference Speaker Biographies**

#### **Grenville Stocker - Horticultural Consultancy**

Grenville trained as an analytical chemist in England, before departing to New Zealand 1973. As Chief Chemist at Dominion Salt, Grenville received samples for analysis from horticultural clients and advised them on the appropriate plant nutrition. The NFT industry was new and much work was done on NFT crops.

Grenville started Gate Pa Hydroponics in 1977 supplying nutrients for hydroponic tomatoes, and consulting to commercial farms. Gate Pa merged with NZ Hydroponics Ltd 1983, who built laboratories for Grenville to continue work on plant nutrition and nutrient solutions, a field he made his specialty for the last 30 years.

In 1996 Grenville, his wife Joyce, and son Neville, formed their own company, Stocker Horticultural & Hydroponic Supplies Ltd, servicing clients in New Zealand, Australia, Pacific Islands, South East Asia and USA. Retiring in 2004 to travel the world, Grenville still consults to clients and speaks at conferences.

**Geoff Connellan - Greenhouse Consultancy** 

Geoff Connellan has extensive experience in research and teaching in horticultural technology. His areas of expertise include greenhouses and urban water management. His greenhouse research has covered greenhouse design, solar greenhouses, greenhouse covering materials, energy conservation and nursery watering systems.

Geoff has over 100 technical publications covering greenhouse technology and water management, and has been invited to present at numerous national and international greenhouse and hydroponic conferences on greenhouse technology.

Optimisation of the greenhouse environment to produce quality crops is of particular interest, and in recent years Geoff has focussed on greenhouse cooling and the need for effective ventilation.

Geoff has a Master of Engineering Science Degree and is a certified irrigation auditor and trainer for irrigation auditing courses and the nursery WaterWorks program. After 30 years at Burnley College, he is now operating a consultancy in the environmental horticulture sector.

#### Steve Randall - Randbiz Pty Ltd

After finishing his B.Comm from the University of Qld, Steve worked as accountant at KPMG in the Private Business Services section, before being enticed back to manage his families flower farm in Toowoomba.

In his 16 years at Floranda Flowers, Steve actively sort out the latest technology, growing techniques and crops in order to keep the business one step in front of the market.

In 1995 Steve began establishing what is now a 10,000sgm, highly efficient hydroponic farm, specializing in gerberas and chrysanthemums.

Until 12 months ago this farm was run with minimum time from Steve, as he was busy managing Floranda Flowers, so his dependence on automation and technology was paramount.

#### Godfrey Dol - Top of the Range Grower Manager

Dutch-born, Godfrey Dol is Top of the Range's glasshouse manager. He has over 20 year's experience managing successful glasshouse operations in the Middle East and North America where he has managed operations of 16 hectares. Godfrey was the first grower employed by Village Farms who are now North America's largest and most successful tomato operation.

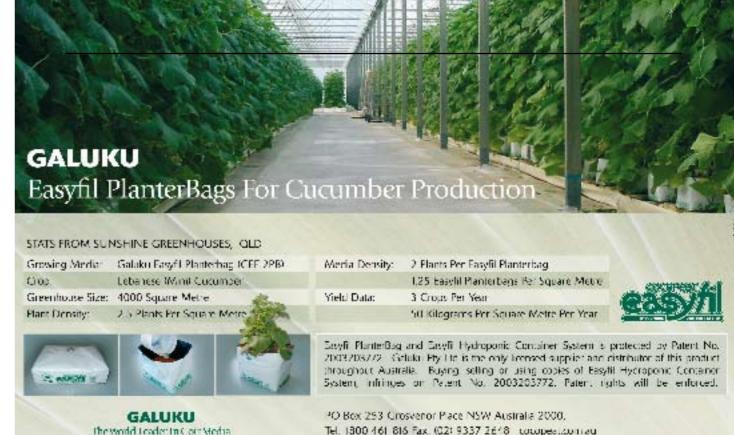
In Australia Godfrey has been well known in the industry for his work with greenhouse tomatoes in Bundaberg. With his experience in and passion for the industry, he was able to convince the Costa Group that Guyra was the best place to grow tomatoes in glasshouses and as a testament to Godfrey's experience and the ensuing enthusiasm of the team, the new glasshouse has produced record quantities of consistently high quality and great tasting truss tomatoes. As a result of the operations success construction is now underway to expand the operation to 20ha.

#### Phil Johnson - Grodan

Phil Johnson has a BSc Honors Degree in Horticulture from Pershore College in the UK, in which he specialised in glasshouse crop production.

Following his degree he has worked as a grower manager for Humber VHB for 7 years, starting as a grower manager of 6ha and ultimately responsible for 9ha of hydroponic glasshouse tomatoes.

In 2003 Phil joined Grodan as a Technical Adviser in the UK. He moved to New Zealand in October 2004 to provide crop technical support for Grodan customers growing a wide range of crops in both Australia and New Zealand.



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# ANTI & BIO Sound Frequencies & Plant Growth

#### Anti Bio Technology in Horticulture

Anti Bio Technologies Pty Ltd is a Gold Coast based company which has been operating for over 10 years. The Managing Director, David Telfer, successfully designed a system utilising Sweeping Sound Frequencies (SSF) to dramatically reduce bio film on the insides of beer lines which created a massive benefit in man hours cleaning those lines.

Since then, the technology has also successfully been applied to the commercial swimming pool industry, and is about to be applied to super yachts and large marine vessels to remove unwanted growths from all treated surfaces in contact with water.

Over the last two and a half years several field trials of Anti Bio Systems have been carried out in both Australia and Malaysia on hydroponics sites.

#### Anti Bio Results::

- Anti Bio reduces, prevents, and, in cases, eliminates biofilm and general "muck" build up in pipe work.
- As a result of biofilm and "muck" removal, Anti Bio substantially reduces the amount of time spent checking for and cleaning blocked drippers
- Anti Bio has the ability to better keep calcium in solution, which reduces build up of scale and improves uptake by plants. Hard water feels softer for the same reason. This is a particularly major benefit to farms using bore water.
- Anti Bio promotes whiter, cleaner roots which are more dense.
- Anti Bio promotes plant colour and general appearance.
- Asian vegetables and lettuce particularly have been

AHGA National Conference





seen to increase in density improving crop yield.

• During moderate temperature periods, the use of beneficial bacteria has been able to be withdrawn reducing costs to the grower

• reduction in crop losses

"We acknowledge that the Anti Bio Hydroponics Systems have been a worthwhile investment for our farm; therefore, we proceeded to purchase 3 units from you after the trial"

- Tan Phooi Leong, Director, Dragon Power Plantations Sdn. Bhd., Malaysia.

#### How does Anti Bio work & how is it installed?

• Anti Bio works on low frequency sound waves. These sound waves are generated by a computer microchip and transferred via activators which are installed on the pipe supplying nutrient to the tables.

The sound waves create a physico-chemical reaction in the water being treated which affects the biofilm attached to the surfaces and beneficially alters ionic reactions in the environment.

The technology used by Anti Bio originates from over 20 years of Research and Development.

Sydney June 2009

AB treated tables on right, untreated on left. Both tables planted out at same time. Note more robust growth on the treated tables at right

Anti Bio treated plant on the right was planted and picked on the ame day as the untreated plant on the left. The untreated plant only weighed 325 grams while the treated plant weighed 375 grams (a 15% improvement). The growers advised that the treated plant was less bitter to taste



For more information on how our technology can treat the water that treats your plants call Tim on (07) 5527 9444

BIC

### Anti Bio

Anti Bio is available for many different applications and has received recognition from prestigious industry leaders and outstanding praise from a vast array of users in many different industries.

• It is not yet fully understood why plant and root growth are improved.

This is typical of many other applications adopting the technology of the use of sound. Sonochemistry is becoming more widely studied as the benefits are being recognised world wide

#### 2 Components: Control Unit & Activator

The control unit is mounted on a protected surface and plugged into a power point.



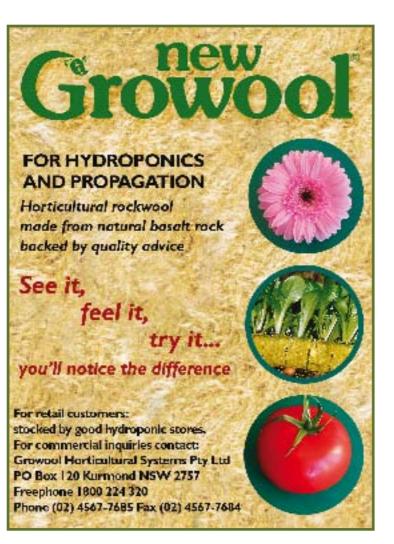
Cables lead from this unit to "activators" which are 24 cm rods.

These are simply cable tied to the outside of the pipe/s supplying water and nutrients to tables.



A true online digital edition, an exact copy of the hard-copy edition with the extra benefit of readers being able to hyperlink off the web and smail links that appear in each issue for additional information. Our website includes a free sample digital edition which atlows visitors to get a feet for the online edition, to scrott from one page to the other, to quickly zoom in an out and move the page around, and to test the live hyperlinks.

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#### No part of the System touches the water

Sound Frequencies are easily programmed via a keypad. This allows speedy modification as we continuously seek improvements in performance through Research and Development.

#### Maintenance Free

• Anti Bio Systems run on very low power requirements, drawing minimal power and operate 24/7 with no need to manage.

#### Easy Installation

Hydroponics farmers can now install the technology (easy to self install) to monitor the benefits achieved on their own site. Anti Bio will supply each system required for \$88.00 (GST inc) per month for 6 months plus delivery so that you can get the feel for tweaking how you manage your site before committing to a longer term of rental.

#### For More Information

Enquiries can be directed to Tim Briglia on (07) 5527 9444 or tim@antibio.com.au. Tim will be happy to assist in advising on how to install and what hardware will be required to suit individual sites. Anti Bio Technologies P/L PO Box 600 ASHMORE CITY QLD 4214 www.antibio.com.au



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### Memorandum of Understanding AUSVEG AHGA Partnership Prosperous for Vegetable Industry

A new Memorandum of Understanding (MOU) promises a strong partnership between AUSVEG and the Australian Hydroponic and Greenhouse Association (AHGA).

AUSVEG Chairman Michael Badcock and the AHGA President Graeme Smith (pictured) conducted the signing ceremony in front of the AUSVEG Board of Directors in Melbourne on Wednesday 30 January 2008.

This agreement will allow both organisations to further enhance their mutual understanding and relationship, as well as increase communication to growers.

"The AHGA is a strong supporter of industry development and encourages the promotion and facilitation of key relationships", Graeme said.

The partnership between AUSVEG and the AHGA will enable both organisations to work more closely together to deliver improved benefits for growers.



"This is a major step forward for the industry in improving collaboration and increasing the positive profile for the vegetable industry and the business environment for growers", Michael said.

Working together is one of the key objectives of the vegetable industry strategic plan, VegVision 2020 which encourages the Australian vegetable industry to work as a whole.

AUSVEG looks forward to forming similar working relationships with like-minded organisations for the future cultivation of the industry.

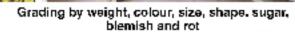
AUSVEG is the national peak industry body representing the interests of Australian vegetable and potato growers and is committed to securing the industry's future.

The AHGA is the peak industry body representing commercial hydroponic and greenhouse growers Australia wide.

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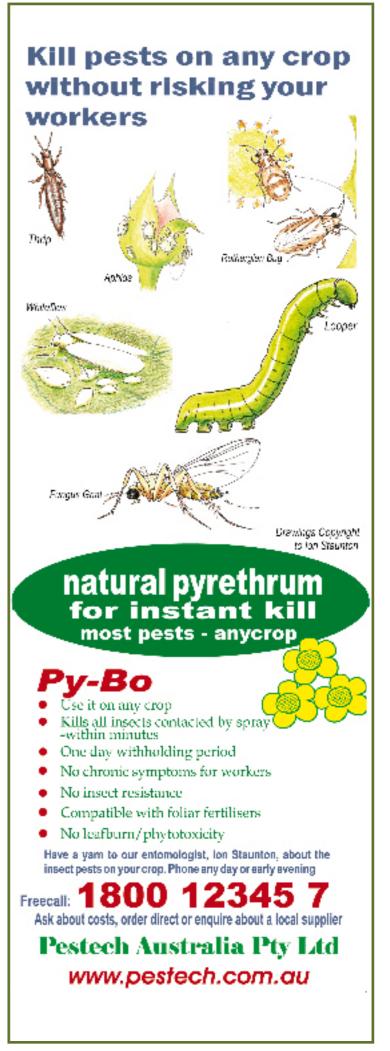
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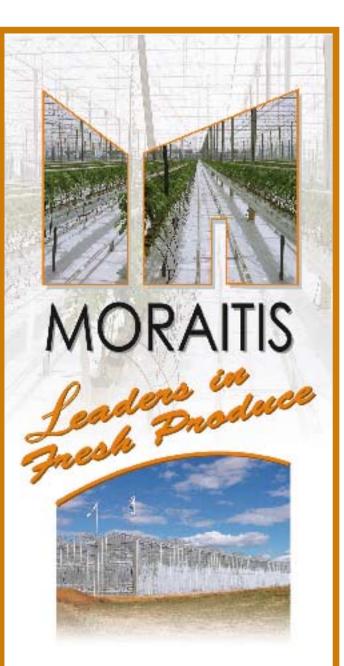
26th July

## AUSTRALIA AHGA VOLUME 1/2008

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Incl GST	Single Issue	Series of 4 ad	s
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1/2 page black/white	\$ 310	\$275 e	a
1/2 page colour	\$ 350	\$320 e	a
Full page black/white	\$ 600	\$550 e	a
Full page colour	\$ 700	\$640 e	a
Inserts	\$ 1.10	\$1 e	a
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Committed to our growers throughout the supply chain. 'From the scedling to the dinner plate, & definitely everything in between.

#### Matthew McInerney

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