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**Front Cover:**  
Platinum sponsor Royal Brinkman have been trialling 30 minute deliveries of their products to customers using drones  
Full story page 25

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**PCA News**

**PCA Chairman's Message**

There are many ways we gain skills and knowledge: through education and training; life experience; work experience; from books, journals and websites; trial and error; or, sometimes purely by accident!

For many years acquiring skills and knowledge in protected cropping has been a challenge.

Part of the challenge was that most of the available training was geared towards soil-based field production; and, there was limited access in Australia to modern greenhouse and hydroponic expertise.

Consequently, the relevant technical skills and knowledge was not readily available to pass on to others.

Fortunately we have seen many improvements in the last ten or more years with more focussed courses, workshops and grower forums; specialist training centres; and, PCA conferences!

As the industry develops so too has the capacity within the Australian industry to share experience, knowledge and skills.

We still have a long way to go and that's one of the reasons why protected cropping is so fascinating and exciting.

We continue to utilise new technologies, explore new crops and growing systems; try new cultivars; fine tune our skills as growers; and, develop new markets or expand existing ones.

The AIS Greenworks PCA Conference 2015 is of course an ideal environment for everyone in the industry to come together and share information, experience, technology, new products or just catch up with people and re-affirm the strength and capacity of protected cropping in Australia.

Reserve your spot at [www.pca2015.org](http://www.pca2015.org)

PCA Chairman Leigh Taig



**Bumble Bee Update**



The Hon Greg Hunt, Minister for the Environment has stated a list of terms and conditions that need to be addressed, in order to do a bumblebee trial / assessment in Tasmania, using the now endemic bumblebee population.

PCA are continuing to work through the terms, and are considering the best way to approach these issues. This continues to be a work in progress.

In the meantime, PCA have recently acknowledged the 20 year anniversary of the bumblebee in Tasmania, and while it is unclear if they were brought in accidentally or otherwise, one thing is for sure, they are now very much a part of the Tasmanian landscape.

In that 20 years, there has been no outbreak of "sleeper weeds" taking over the Tasmanian landscape due to more efficient pollination by the bumblebee. And the honey industry continues to make honey with negligible impact from the bumblebee (in fact, I feel it is more the case the honey industry has bigger fish to fry, such as a possible incursion of Varroa Mite), and life continues unchanged, other than observing one of nature's quirky gifts.

While there is no denying that every introduced species has an impact on the environment, one thing is for sure, there have been no obvious changes, or hue and cry for an eradication program.

Tasmania is no stranger to introduced species. In the 1800's after several failed attempts to introduce trout to Tasmanian waterways, a government built rearing facility (Salmon Ponds) was established, leading to a successful rearing and introduction program. The trout is now one of the cornerstones of the Tasmanian economy, bringing many cashed up fishermen to our trout laden streams and lakes.

The same could be said for the Salmon industry, introduced in the 1960's. Salmon Aquaculture is now creating about 1500 jobs, and sells a gross value of around \$190,000,000. A significant and successful introduction.

Indeed, the honey bee is also an introduced species. While, as a growers in Tasmania, we continue to be frustrated by the bumblebees we see outside of the greenhouse (and not in), one thing is for sure, we will continue to cut whatever red tape is presented before us, until we can reach a point that the bumblebee can be utilised to the same extent as the honeybee.

PCA Director Marcus Brandsema

# Seven Habits Of Highly Successful Greenhouse Growers

By GGS Structures Inc.

Different crops require diverse levels of expertise to attain their best quality. For growers to achieve a high level of success they get a routine of practicing the great growing habits listed below.

## 1. Master the Basics

Highly successful growers make it a habit to always include the fundamentals of growing when dealing with crop issues.

These fundamentals or "Basics" refer to five considerations when growing a crop:

- **Air exchange:** Oxygen & Carbon dioxide – all plant life depends on this and cannot survive long without it
- **Water exchange:** second most important part in a plant's survival
- **Nutrient exchange:** mastering the basics of plant nutrient uptake can determine a great crop from an average crop.
- **Light exchange:** essential for photosynthesis
- **Temperature stability:** crop specific for both air & rootzone.

Mastering these basics involves a complete understanding of how and why they affect the crop at every stage, without this knowledge the grower is unable to determine what conditions and techniques are best when managing the crop. It must become a habit when making changes to not override the plant basics and hinder the goal of a quality crop.

## 2. Record Keeping

In order to consistently grow high quality crops a grower needs to learn from both mistakes and successes. Make it a habit to keep accurate and detailed records of all aspects of the growing process so that errors are not repeated and triumphs are.

Climate control computers can be used in conjunction with growing notes to compare statistical history while reviewing crop notes.

The climate control computer is one of the modern grower's most necessary tools; it irrigates, fertigates, ventilates, shades, heats and cools automatically.

However, a good grower recognises that no matter how sophisticated the computer system, it is still at the command of the grower and only does what it is told. So it is important that this "automatic" system is reviewed on a regular basis.

The automation of the system can advise an EC deviation or an issue with the heating system but it cannot compensate for errors in what is put into the system.

Good growers will make this control review a routine so that nothing is missed and quality is guaranteed.

## 3. Hands-On Crop Techniques

It is one thing to use the climate control computer as a valuable tool but it is another thing to trust it to do all of the growing.

A highly successful grower is always in the habit of confirming or denying what the computer is telling him by physically viewing the crop regularly.

Sensors can fail making computer readings unreliable so nothing compares to utilising your senses to review your crop.

You should be able to tell the crop's health through how the foliage feels and how the roots and plant look. Pythium and foliar rots can be detected through smell. Actually being with the crop will tell a good grower far more than any climate control computer ever will.

## 4. Regular Water and Leaf Testing

Being a successful grower doesn't mean that you know everything and at times we all benefit from outside testing.

Sending water and leaf samples for laboratory analysis is not expensive and it gives a very accurate sense of what is happening within the growing media and the plant.

This valuable information is used to tweak nutrient delivery to increase plant health and ensure that the crop is of the highest quality. Some growers hire a monthly consultant to take care of media and foliar analysis which is usually included in the fee.

## 5. Research

The best growers are never satisfied. Their mindset is always that it is never "good enough" and there's always room for improvement. This motivates them to constantly do research into new growing techniques, pest control, disease control and advancements. The investigation aspect of the research should be a daily habit and time always put aside for it. The greenhouse industry advances rapidly and one needs to stay on top of it.

## 6. Maintain Equipment

Maintenance of all greenhouse equipment is essential to the success of the crop. Irrigation equipment if not looked after can give false readings leading to poor results.

Make it a habit calibrating sensors and probes regularly. Inspect injectors and immediately address leaky pumps. Double check motors on vents, shading and blackout screens are operating correctly.

Well maintained equipment runs as it's designed and gives the grower that "peace of mind" that is paramount for success!

## 7. Ongoing Education

Highly successful people recognise the need for continual learning for themselves and their team. Successful growers share their knowledge with other team members; they attend industry events and seminars, and encourage others to do the same.

Good training programs and standard operating procedures ensure individual jobs are consistently done to the company's quality requirements. And an open mind to new learning opportunities enables a grower to continually make improvements.

Growing is both an art and a science. Highly successful growers do not limit themselves to mastering their particular crop, they learn about the business, the customer base, the market trends, and about other potential plants they could grow. And the world is a better place because of the fruits, vegetables, herbs, flowers, shrubs, and trees that they grow.

# 2015 Massive Growth Sector

## Hydroponic Farming

Hydroponic crop farming will see huge revenue escalation and be one of the fastest growing Australian industries in 2015. This prediction comes from research firm IBISWorld.

Hydroponic vegetables, fruits and flowers, are enjoying strong and steady demand from consumers, says IBISWorld senior industry analyst David Whytcross.

"In addition to water conservation, hydroponics allows for higher production yields of high-quality produce," he says.

"Vertically tiered plants enable greater productivity, while greater quality control, faster plant growth and longer growing seasons offset the added cost of hydroponic systems over conventional agricultural practices."

Elsewhere in the report they say, "Reduced rainfall levels over the past five years have negatively affected crop supplies of soil-based farmers, and thus reduced competition for the industry in retail markets." This reduced competition has increased demand for hydroponic produce, thus boosting revenue. Industry revenue is forecast to rise by 7.2% in 2014-15, to reach \$836 million.

Other industries also in the top five predicted to grow dramatically this year in Australia are online grocery sales, wearable technology and 'fast fashion' which is a term used to express a fast turnaround from catwalk to shops.



Organic greenhouse kale

# How 'Organic' are Veggies

## From a hydroponic greenhouse?

The discussion of hydroponic-as-organic is an "almost-religious dispute," because it traffics in hopes and fears, said Jack Rabin, the associate director of farm programs at Rutgers, N.J. USA, Agricultural Experiment Station.

In a recent email exchange, Rabin elaborated: "Some people have a negative association of hydroponics with industrial farming."

Promoters of soil-grown organic food "claim the healthy, high ground," Rabin wrote, and added the point that;

**"Hydroponic production is a clean, sanitary and safe, healthy, high quality, resource-conserving, local, space-efficient, labour-efficient and labour-dignity, non-polluting production system in its own right. It should not need organic certification."**

www.HortiDaily.com

Complete article at [www.burlingtonfreepress.com](http://www.burlingtonfreepress.com)



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