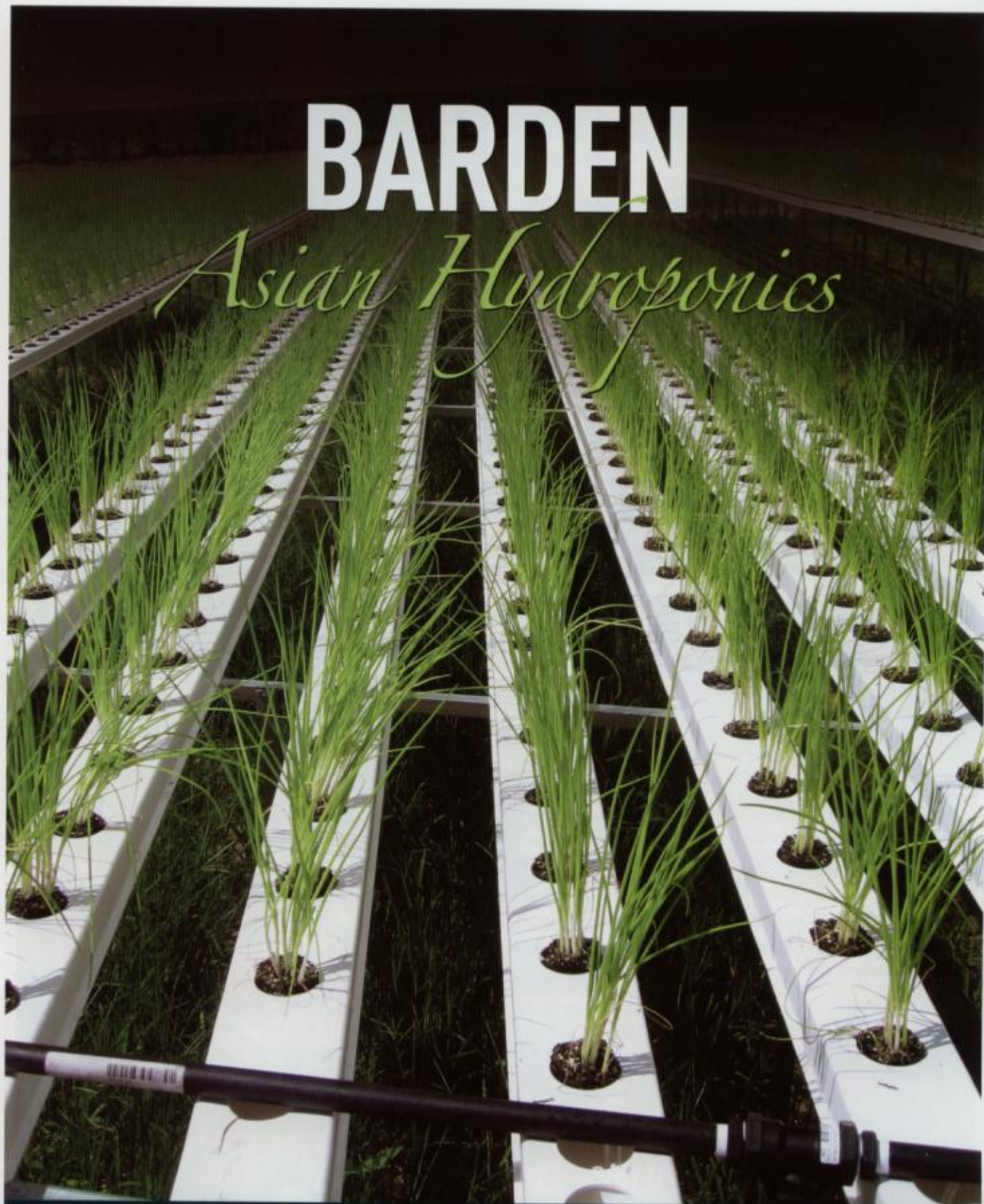


# BARDEN

## *Asian Hydroponics*



The Australian Asian vegetable industry is a dynamic growing horticultural sector whose products appeal to Australian consumers. STEVEN CARRUTHERS visits a new open-air NFT facility that will produce a select range of high quality leafy Asian vegetables destined for major supermarkets.

**E**stablished in 1989, Barden Fresh Produce supplies supermarkets and independent grocers across Australia with a variety of pre-packaged fruit, vegetables and salads. The company's philosophy is 'Freshness and Quality without Compromise'. From humble beginnings as a family-owned business at Sydney Produce Markets, the company now operates three state-of-the-art packing facilities in Gatton, Queensland, Kemps Creek in NSW, and Werribee in Victoria. Additionally, the business has an excellent packing and distribution facility at Sydney Markets for a select range of Asian vegetables.

Barden is best known as the first grower to introduce truss tomatoes into Australian supermarkets, and it is now set to raise its profile in Asian vegetable lines. The company recently forged a partnership with Camden-based Asian Hydroponics to build a new open-air hydroponic NFT facility at Peats Ridge, NSW, to grow a select range of high quality Asian leafy vegetables. The joint venture, known as Barden Asian Hydroponics, brings together the packaging, marketing and distribution experience of Barden with the growing skills of Asian Hydroponics. When fully operational in October 2007, the 20,000 square metre facility will represent a significant investment for its partners and promises to be the largest open-air NFT facility growing leafy Asian vegetables in Australia.

#### Industry constraints

Historically, a wide range of Asian vegetables have been available in Asian greengrocers and wet markets in many Asian communities for many years. In fact, Asian vegetables have been grown in Australia since the gold rush days of the 1800s when Chinese market gardeners not only grew European vegetables for European-Australians, but also Asian vegetables for their own needs. In more recent times, the large influx of Asian immigrants over the past three decades has seen a growing demand for Asian vegetables across Australia's diverse multi-cultural society. The Asian connection has had a significant influence on the food we eat. Many Asian vegetables have strong and distinctive flavours, helping to expand and enhance our culinary exploits. However, it's only been in recent years that some of the more popular Asian vegetables have appeared in major supermarkets.

According to the most recent studies on the Asian vegetable industry ([www.rirdc.gov.au/pub/publications.html](http://www.rirdc.gov.au/pub/publications.html)), the main issues constraining industry growth have been poor shelf-life and product appearance, inconsistency of supply and price, poor flavours and even 'off flavours', and packed product that is underweight by the time it reaches consumers. According to RIRDC's 'R&D Plan for Asian Foods 2005-2010' (Report No 05/002), shelf-life has been consistently poor because growers have little knowledge of optimum post-harvest handling techniques and mechanisms to sustain the life and fresh appearance of produce. The report highlights that Asian greengrocers and wet markets generally sell their produce within a day, while major supermarkets have longer supply chains and produce must remain in fresh, saleable condition for extended periods of time.

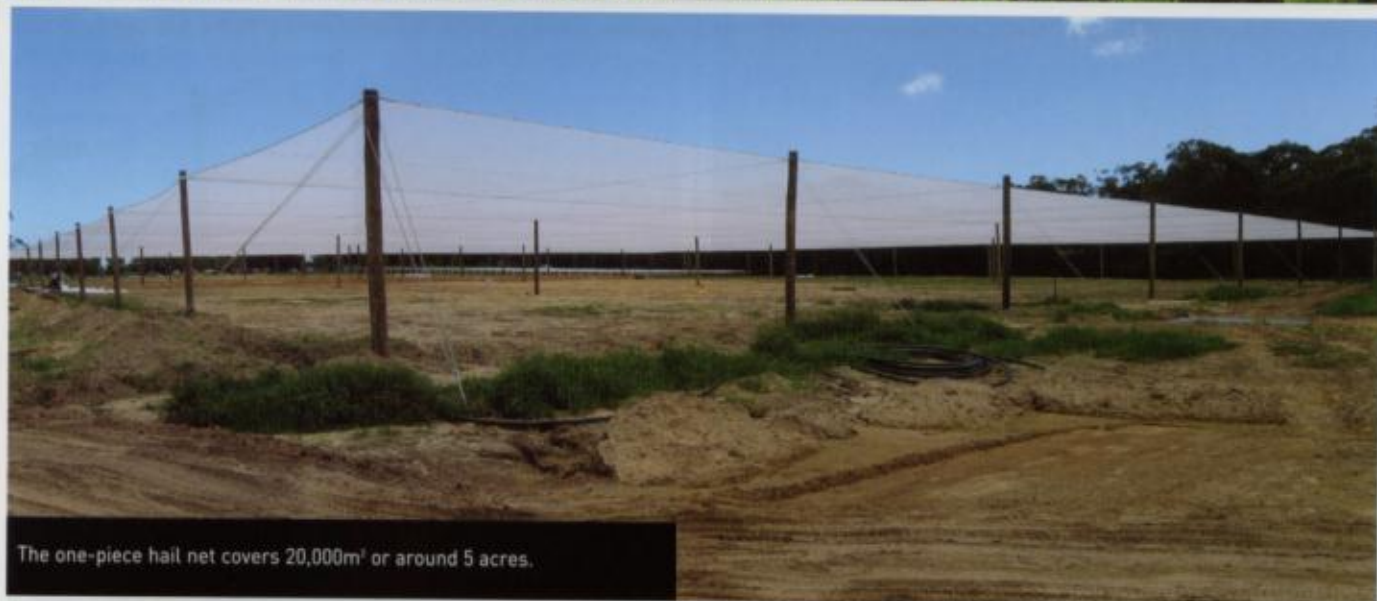
The principals of Barden Asian Hydroponics have obviously done their homework. To overcome many of the industry constraints outlined in the RIRDC report, the joint venture opted for hydroponic NFT technology because of its reputation for



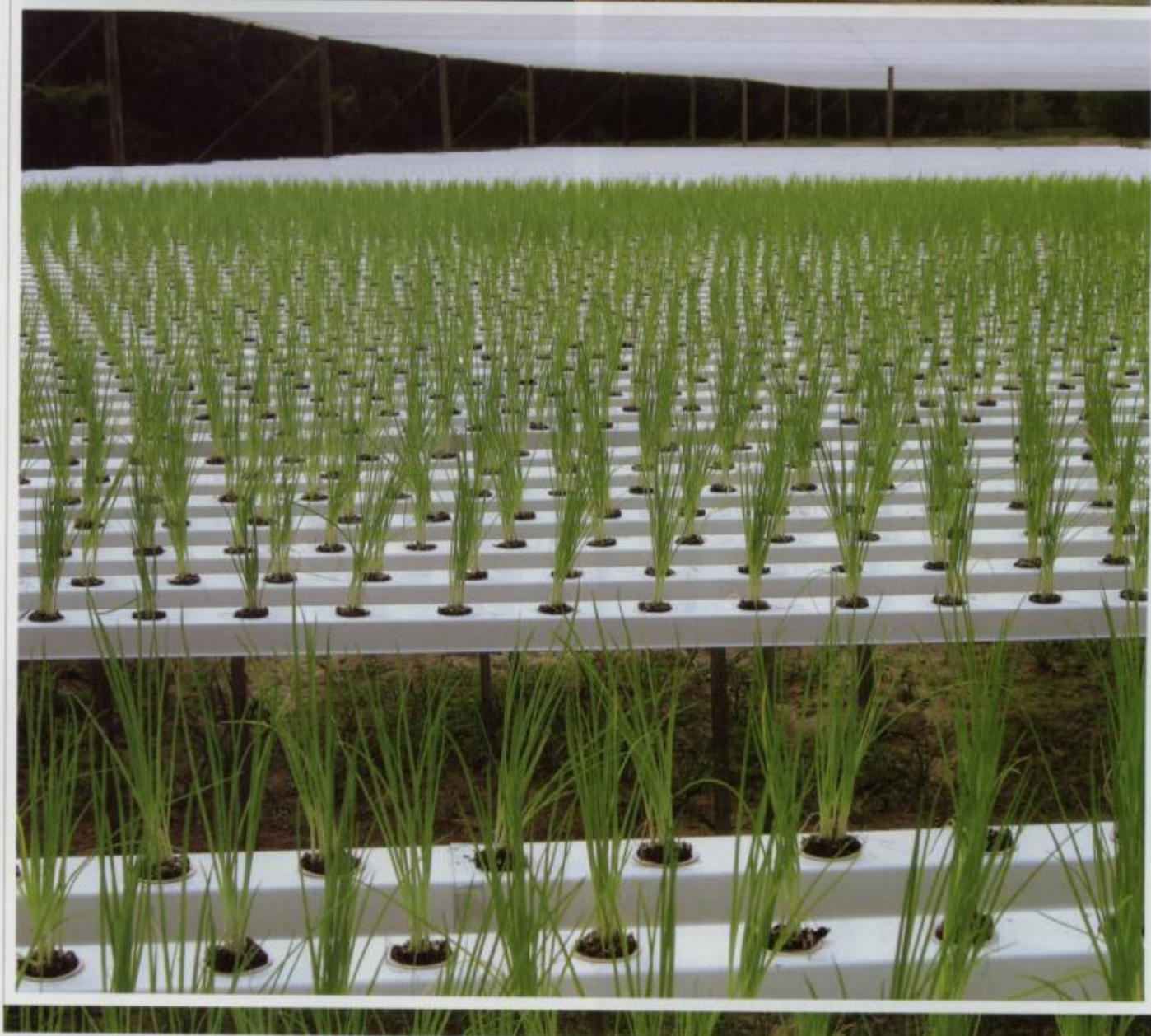
Farm Manager Nathan Clackson studied post-harvest and IPM at the University of Western Sydney.



An initial crop of spring onions to test the system.



The one-piece hail net covers 20,000m<sup>2</sup> or around 5 acres.





When complete, the facility will include two propagation greenhouses with concrete floors.



The facility will operate eight independent growing systems, with nutrient tanks and plumbing colour-coded for easy identification.

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Each bay will have its own independent irrigation lines.

higher yields and better quality produce. When fully operational, the Peats Ridge facility is expected to produce a consistent supply of high quality Asian vegetable lines to major supermarkets all year-round.

"Hydroponics also has a reputation for cleaner, greener produce," said Barden Produce Director, Andrew Drummond.

"There is plenty of anecdotal evidence that suggests hydroponically grown Asian vegetables also taste better," he added.

The company recently conducted its own taste test among its many Asian employees with hydroponically grown vegetables a clear winner.

Andrew attributes the increasing popularity of Asian vegetables among European Australians to our busier lifestyles and the trend to prepare quicker meals.

"Asian vegetables are easy to cook and they taste nice," he said. "Stir fries are a quick way to cook up a healthy meal. Just top and tail the vegetables," he added.

### The Location

An easy one-hour drive from the major Sydney Markets, the Peats Ridge location was chosen for its mild climate with only 4-5 frost days a year, compared to 20-30 frost days in the greater Western Sydney region. At an elevation of 280m above sea level, temperatures range from a mean maximum summer temperature of 27°C, to a mean minimum of 6°C in winter.

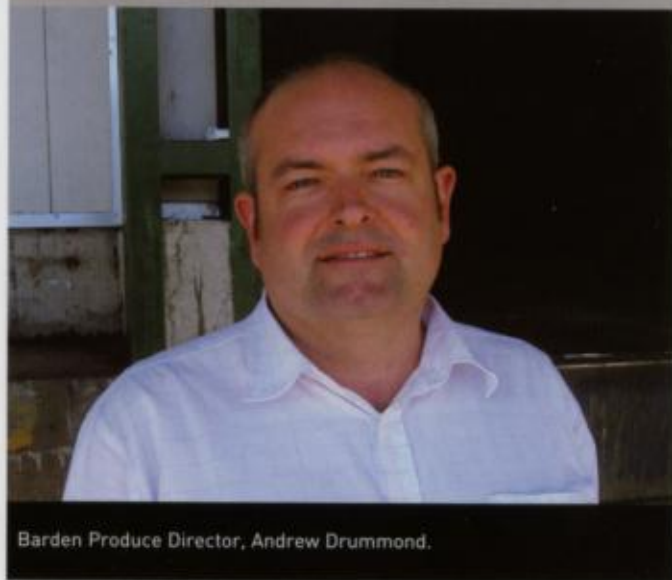
A former citrus farm, then in-ground grape tomato farm, the site was chosen for its abundant supply of high quality spring water from the Mangrove Mountain sandstone aquifer system. It is the same water source used by the Australian bottler Amatil that sells the world's most famous soft drink, Coca-Cola. An amazing feature of the aquifer is that it takes over 4,000 years for the water to move from the topmost to the lowest layers and isotope studies suggest a groundwater age between 2,000 to 5,000 years.

### The Facility

When complete, the facility will consist of 288 waist-high NFT tables, each 22 metres in length and 7 channels wide, or a total of 44,352 metres of growing channel (around 300,000 growing holes). The channel, supplied by Brisbane-based Advanced Profile Technology, is an economical one-piece profile (100 x 50mm deep). The food-grade extrusion is UV-protected and long-lasting. The one-piece trough-and-lid combination incorporates the standard concave base and contoured lid complete in one moulding. Distances between holes will vary from 100mm to 200mm apart, depending on the variety of leafy Asian vegetables under production. The growing area, covering 20,000m<sup>2</sup> (nearly 5 acres), is divided into eight bays with 72 tables to each bay.

The 5-acre lot is covered by a one-piece hail net installed by Coast Guard Netting, based in Ballina on the NSW north coast. The internal posts are well spaced, thus minimizing shadows. What makes these covers work so well is the structural system, which uses steel cables that are high tensioned to give the cover rigidity and a long life span. The timber support poles are buried 1 metre into the ground. Once the cross cables are tensioned, there is no sideways movement.

When complete, the facility will operate eight independent growing systems, one for each bay. This will allow the grower to tailor nutrient solutions for specific product lines. Each bay is



Barden Produce Director, Andrew Drummond.

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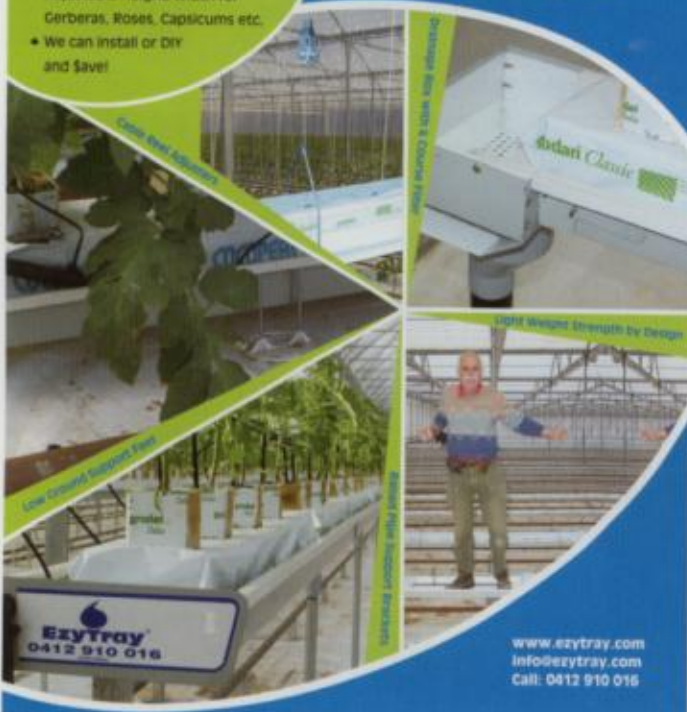
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colour-coded with its own subterranean delivery and return pipes and fibre-cement nutrient tank (5,400 litres). The plumbing also includes overflow pipes to drain away excess water in times of rain to avoid diluting the nutrient solution. The water is captured in a separate catchment tank.

During my visit, only one bay was completed and growing spring onions (*Allium festulosum*) as a test crop. When fully operational, the main Asian lines will be Pak Choy, Buk Choy, Baby Buk Choy, Gai Lan (Chinese Broccoli), Gai Choy, Choy Sum and Baby Choy Sum.

The plan is to seal the entire growing area with road base that will be packed down to inhibit weed growth below the tables, a potential lair for insect pests and 'vector' diseases. A concrete causeway at the low-end of the facility is designed to channel surface rain into an existing dam. Water from the dam will be used on an adjacent lot to irrigate in-ground crops such as zucchini. Also under construction were two propagation greenhouses with cement floors for ease of sanitation. The farm plans to propagate its own seedlings, thus controlling product quality from seed to supermarket shelf.

Quality assurance is a high priority for the venture. While all Barden Produce growers are FreshCare certified, Asian vegetables grown at the Peats Ridge facility will be certified to the highest food safety HACCP system.

#### Final remarks

The Barden Asian Hydroponic facility represents a significant investment for its partners and promises to be the largest open-air NFT facility growing leafy Asian vegetables in Australia. Using hydroponic technologies, the emphasis will be on product quality, shelf-life, cleanliness and product packaging. The farm will initially create employment opportunities for around 10 permanent staff, with further job opportunities if plans for an on-site packing facility go ahead.

#### For further information contact:

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Fax: (02) 9746-2497  
Email: [andrew@bardenproduce.com.au](mailto:andrew@bardenproduce.com.au)  
Website: [www.bardenproduce.com.au](http://www.bardenproduce.com.au)

#### Website Resources

**Asian Foods Research Program**  
<http://www.rirdc.gov.au/programs/af.html>  
**Asian Foods R&D Plan 2005-2008**  
<http://www.rirdc.gov.au/pub/publications.html>  
**Diversifying Asian Vegetable Markets**  
<http://www.rirdc.gov.au/reports/AFO/01-02.pdf>  
**Department of Primary Industries, Victoria**  
<http://search.land.vic.gov.au/infonotes/query.html?qt=Asian+vegetables>  
**Department of Primary Industries, NSW**  
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