

**Study tour to California & Produce
Marketing Association's Fresh Produce
Summit, Anaheim, September 2009**

Gerard McEilly
Quadrant Australia Pty Ltd

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Know-how for Horticulture™

VG09107

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A U S T R A L I A



**Study tour to California and
Produce Marketing Association's
Fresh Summit International Convention & Exposition
Anaheim**

October 2009

Jonathan Eccles

Quadrant Australia

HAL Project N°: VG09107



Know-how for Horticulture™

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The tour left from San Francisco, famous for the Golden Gate Bridge, and drove south.



The Salinas Valley, the 'Salad Bowl' of the United States

Summary

Quadrant Australia offered a professionally led study tour to the United States of America designed to expose vegetable growers and industry representatives to issues associated with global vegetable production, marketing, processing, value adding, supply chain and research activity.

This tour included attending the Produce Marketing Association's (PMA) 60th Fresh Summit International Convention & Exposition which was held in Anaheim, California, 2 – 5 October 2009. Leading the tour was Jonathan Eccles who is well known in the Australian horticultural industries.

A four day tour of California preceded the convention, visiting the Salinas Valley, Oxnard and Los Angeles. The aim of the tour was to give participants the opportunity to observe and discuss issues and the latest industry developments with local farmers and researchers. Visits were made to the United States Department of Agriculture's Agricultural Research Service and the University of California's Riverside Campus. The group also met with the Monterey County Farm Bureau and gained an understanding of farming issues in the Salinas Valley as well as broader Californian agricultural issues such as depleting water resources.

There is more value adding of produce in US supermarkets than in Australia and a far greater use of commercially branded products. Also, more use is made of marketing concepts for fresh produce than what is seen in Australia and companies provide greater marketing and promotional support to their products throughout the supply chain. The marketing opportunities were evident after a visit to a leading Californian marketing and supply company, Coast Produce.

While celebrating the 60th anniversary of PMA, this year's Fresh Summit was being held after a year of the United States' financial turmoil, economic recession and the lower purchasing power of the American consumer. Workshops were held in the mornings and the afternoons were dedicated to one of the world's largest fresh produce exhibitions. It attracted over 800 exhibitors and a record delegate attendance of 19,000 people from 58 countries.

Food safety issues continue to dominate this year's Fresh Summit after a series of food-borne illness were attributed to fresh produce in recent years. Electronic traceability throughout the industry and development of a food safety management plan were being advocated and implemented. The United States produce industry is developing improved communication channels between relevant government authorities and industry to improve the management of future food safety outbreaks.

Recommendations from the study tour include the need for the Australian Vegetable Industry to develop an emergency management plan to handle a food safety outbreak with a clear communication strategy.

Castroville on Monterey Bay: In the late afternoon on most summer days, a cold mist blows in off the sea and makes its way up the Salinas Valley.



California

'The Golden State'

California State flag



Introduction

California, with an area of 424,000-km² and a population of 37 million, is the third largest state in area and the most populous in the United States. Compare this with the State of New South Wales which has an area of 800,600 km² and a population of just over 7 million.

It is located on the west coast of the United States, bordering Oregon to the north, Nevada to the north-east, Arizona to the south-east and the Mexican state of Baja California to the south.



California is located on the west coast of the United States of America.

California is situated between 32° and 42° north which is a similar latitude between just north of Newcastle, New South Wales to Hobart, Tasmania in the southern hemisphere. Most of the State has a Mediterranean climate with cool, rainy winters and dry summers while the high mountain areas in the eastern part of the State are subarctic. A cool sea current flowing south often creates fogs near the coast. Further inland the climate is more extreme with colder winters and hotter summers.

California is the nation's biggest vegetable producing State. In 2007, it accounted for 50 per cent of the United State's production with fresh and processing vegetables exceeding US\$7.85 billion (AUS\$8.82 billion). Lettuce (all types) is the main vegetable produced, valued at US\$2.18 billion (AUS\$2.45 billion) followed by tomatoes at US\$1.24 billion (AUS\$1.39 billion).

Fresh market snap beans, romaine lettuce (cos), fresh market spinach, processing spinach and processing tomatoes were among the crops showing increased values of production. Among the crops with a decline in production were artichokes, processing carrots, fresh market cucumbers, summer storage onions and pumpkins.

California is also the leading processing vegetable producing state in 2007 with 69% of the US production.

Salinas Valley

The Salinas Valley is in the Central Coast region of California, that lies along the Salinas River between the Gabilan Range and the Santa Lucia Range. It encompasses parts of Monterey County. The Valley is 113km long and shaped like a funnel, narrowing as it progresses south and upstream. It is 47km at its widest point and 3km at its narrowest.

The Salinas Valley's weather varies from north to south. Proximity to Monterey Bay and the cool coastal waters of the Pacific cools the northern part of the valley in summer and keeps it relatively mild in winter. The southern portion of the valley has greater extremes of temperature, hotter in summer and colder in winter. In summer, inland heating draws the marine layer into the valley, with fog and low clouds near Monterey Bay, sometimes extending further down the valley. Average summer temperatures range from 20°C to 24°C gradually warming south up the Valley. Rainfall is 12-14 inch/year (305-355mm/year).

Agriculture dominates the economy of the Salinas Valley. In particular, a large majority of the salad greens consumed in the United States are grown within this region. Strawberries, lettuce, tomatoes and spinach are the dominant crops in the Valley. Other crops include broccoli, cauliflower, wine grapes, celery, and spinach. Due to the intensity of local agriculture the area has earned itself the name, 'America's Salad Bowl'.

Supplying Salinas Valley farms is an underground water supply fed, in part, by the large watershed in surrounding mountains. Two reservoirs - Nacimiento and San Antonio - store and release the water for groundwater recharge, flood control and farming. Wells access the groundwater to irrigate about 111,300 hectares of fruits and vegetables and to supply the valley cities. Aquifers supply all the irrigation water and are at 200 – 370 metres deep.

The Salinas River itself is a sand river, so water appears on the surface only during heavy rains or when water is released from the upstream reservoirs. Nearly all the Salinas River flows underground running south to north. Increasing demand for water near the mouth of the valley is pulling seawater under the coastal area. The Salinas Valley Water Project, now under construction by the Monterey County Water Resources Agency, will use an inflatable dam near Salinas to capture more water during wet periods. Monterey County Water Recycling Projects, a combination of the Castroville Seawater Intrusion Project and the Salinas Valley Reclamation Project, started delivering recycled water to fields near Castroville in 1998. The projects reduce pumping of groundwater and slow down seawater intrusion.

Growers are free to use any amount of water they need. There is no metering except in those areas close to the mouth of the River at the north end of the Valley as part of the Castroville Seawater Intrusion Project.

Major crops include lettuce, brassicas, strawberries, and artichokes with smaller areas grown to garlic, fresh and processing tomatoes and onions. Wine grapes have also developed along the lower slopes of the Valley. The Salinas Valley is one of the most fertile farming regions in the United States. The area is not densely populated and the largest city in the region is Salinas, with approximately 150,000 people.

Ventura County

Ventura County is in the southern part of California, located on California's Pacific coast and some 100 km north of Los Angeles. Being so close to the ocean, gives the county a temperate Mediterranean climate.

The value of horticultural production in 2008 for Ventura County was US\$1.6 billion (AUS\$1.8 billion). A range of crops are grown with strawberries being the most valued at US\$394 million (AUS\$443 million). Being so close to a city of 18 million people, it is not surprising that nursery products are the second most important crop valued at US\$299 million (AUS\$336 million). Other crops are lemons, celery, raspberries, tomatoes, avocados, cutflowers, capsicums and Valencia oranges.

A continuing concern for the County is the loss of valuable agricultural land to urban development. Even though there are laws intended to protect farmland and open space from development, the county continues to lose about 250ha of farmland to development each year.

Farming and farm-dependent businesses provide an estimated 31,000 jobs in Ventura County, more than any other sector of the economy except services. One in 10 county residents relies to some degree on income derived from farming. Agriculture and agricultural related businesses account for about 4.4% of overall economic activity in the County.

Itinerary

Quadrant Australia organised a tour to California and the Produce Marketing Association's 2009 Fresh Summit International Convention & Exposition, Anaheim. The 10 day tour started on 26 September 2009 and was led by Jonathan Eccles. It was designed to expose vegetable growers and industry representatives to issues associated with global vegetable production, marketing, processing, value adding, supply chain and research activity. After each day, tour participants met to discuss their observations and identify key messages from their visits and discussions.

The tour participants were:

Silvio Favero, Favero Gardens, Berwick, Victoria
 Luch Monte, Monte & Son, Carabooda, Western Australia
 Lukas Velisha, Sam Velisha & Son, Werribee, Victoria
 Dale Ondersma was the Tour Group's driver.

Date	Visits	Contact Person
Sun 27 September	San Francisco to Salinas via Castroville	
Mon 28 October	River Ranch Fresh Foods, Salinas Boggiatto Produce Inc, Salinas River Ranch Fresh Foods processing plant, Salinas Monterey County Farm Bureau, Salinas	Chato Valdes <i>Field Manager- QA/Food Safety</i> Michael Boggiatto <i>President & General Manager</i> Jeffry Hitchcock <i>Vice President</i> Kari Valdes <i>Director of Quality Assurance</i> Bob Perkins <i>Executive Director</i>
Tue 29 September	United States Department of Agriculture's Agricultural Research Service, Salinas Gabilan View Farm, Salinas	Jim McCreight <i>Research Leader</i> Ken Lewis
Wed 30 September	Seminis Seeds, Oxnard Deardorff Family Farms, Oxnard	Carlos Pinter Scott Deardorff Richard Martinez
Thu 1 October	Los Angeles Wholesale Produce Markets Coast Produce Company, Los Angeles University of California, Riverside	Jits Teruva, <i>ex Californian Dept Agriculture inspector</i> Emily Fragoso <i>Marketing Manager</i> Tom Johnson <i>Warehouse Manager</i>
Fri 2 October	Produce Marketing Association Fresh Produce Summit, Anaheim Welcome Reception	

Sat 3 October	Produce Marketing Association Fresh Produce Summit, Anaheim	
Sun 4 October	Produce Marketing Association Fresh Produce Summit, Anaheim	
	Australasian Networking Reception	
Mon 5 October	Produce Marketing Association Fresh Produce Summit, Anaheim	
Tues 28 October	Return to Australia	

Note: The exchange rate during the time of the tour and used in this report is Australian \$1 = United States \$0.89.

Salinas: The tour group at Boggiatto Produce farms. Hair nets were mandatory even for visitors!



Boggiatto Produce: Over 50 workers were employed on this harvesting and in field packing machine.

Results of discussions

River Ranch Foods, Salinas

Chato Valdes, *Manager Field – Quality Assurance/Food Safety*
Kari Valdes, *Director of Quality Assurance*



- River Ranch Fresh Foods is one of the Big Five fresh produce processors in the United States. With two major processing and cooling facilities, one in Salinas and one in El Centro in the Imperial Valley in Southern California, the company maintains year-round operations. Originally a family run business, it is now wholly owned by Rabo Bank.
- River Ranch is a leading processor of private brand and River Ranch salads, Popeye® Fresh! spinach salads and River Ranch fresh cut vegetables. It also distributes commodity products, including head lettuce, romaine (cos), leafy greens, broccoli and cauliflower, to retail, club and foodservice customers throughout North America.
- River Ranch produces one of America's favourite brand of spinach, 'Popeye® Fresh!' King Features Syndicate, a global leader in merchandising and licensing, signed an exclusive 20-year licensing agreement with River Ranch Fresh Foods in 2002. This agreement allows River Ranch to use the Popeye® name and family of characters including the right to sell fresh salads and vegetable items throughout the United States, Canada and Mexico branded with the 'Popeye® & Friends' images and names. The Popeye® brand offers the most complete, nationally distributed product line in the fresh spinach segment.
- We observed packing for Costco bulk store supermarket with six cos lettuce hearts per re-sealable bag. In field packing using contract harvesting starts at 6am and goes for 10-12 hours. Town water, with 12.5% Sodium hypochlorite, is used as a non circulating sanitiser with a fine spray as it enters the packing area.
- Iceberg lettuce is cleaned and cored in the field for processing.
- Irrigation is set up for both overhead (shift pipes) and drip. Both re-usable and one use only drip irrigation are used. All irrigation water comes from wells and is not metered.
- Spinach first cut is used for baby spinach fresh cuts, the second cut for freezing. Irrigation water is cut off 48 hours prior to cutting otherwise the spinach becomes water soaked in the bags. Yields are 13-15,000lbs per acre (15-17t/ha).
- Production in Salinas Valley is from end of March to end November. All equipment, including all the factory equipment, is moved to El Centro in the Imperial Valley in South Eastern California for winter production.
- River Ranch leases land for cropping and also has contract growers. Commodity managers continually monitor crops.
- Pathogen testing is done for *E.coli* 157. Primus Labs are the third party auditors. River Ranch customers have access to all auditing records. Electronic traceability is coming soon. Contract pesticide applicators do their own residue testing.
- Cutters receive US\$8.50 per hour (AUS\$9.55/hr) compared to AUS\$16/hr in Australia. We saw 50 people top and tailing in the field working on one packing machine.
- River Ranch has its own food safety program which is HACCP based (Hazard Analysis and Critical Control Points). It has computer based traceability from farm right through to factory. Factored into the program are anti-bioterrorism provisions.



River Ranch Foods: Harvesting and in field packing of Romaine (Cos) lettuce hearts for food service. Note the amount of wrapper leaves left in the field.



River Ranch Foods: Lettuce hearts are sprayed with chlorinated water before reaching the grading table.



River Ranch Foods: Lettuce hearts are bagged into packs of six for Cosco stores.



River Ranch Foods: Cartons of bagged lettuce hearts are stacked ready to be delivered to the coolroom.



- We were surprised that the same focus was not given to Occupational Health & Safety. Safety vests were not used in areas where forklifts and vehicles were active. Also free running water was evident in the factory floor.
- Lettuce mixes are received into the factory at 19°C and cooled to 1.5°C using a vacuum cooler. Chilled water is used to wash lettuce. Chlorine dioxide is replacing sodium hypochlorite as a sanitiser. As water is recirculated, chlorine levels have to be monitored. The final bagged product is flushed with nitrogen.
- Spinach is kept at ambient temperature as it becomes too brittle if chilled and would be damaged in the washing and packing process. Grimway Farms supplies the carrots for the mixes.
- Ingredients which are potential allergens, such as croutons (used in Caesar salad) and salad dressings, are kept separate from fresh produce in the cool rooms.
- The factory runs for 20 hours per day with the other four hours (1.00 -5.00am) used for cleaning equipment.

Boggiatto Produce Inc, Salinas

Michael Boggiatto, *President & General Manager*
 Jeffry Hitchcock, *Vice President*



- In 1989, Michael Boggiatto joined with Jeffry Hitchcock and growers, Ron and Ed Panziera, to form Boggiatto Produce. A spin-off of the original Boggiatto family business, this new venture focused on shipping a variety of fresh produce. The company offers a variety of fresh produce items, ranging from artichokes and Brussels sprouts to romaine hearts (cos lettuce).



- Like many vegetable businesses in the Salinas Valley, Boggiatto Produce grows and packs vegetables from April to December. They then move to the Imperial Valley from late November to early April. There are not enough daylight hours in Salinas in winter. The Imperial Valley sources its irrigation water from the Colorado River. Michael Boggiatto believes there is general apathy to water in the Salinas Valley among farmers – a case of out of sight, out of mind.

- The company's flagship product is Garden Hearts® hearts of romaine. Garden Hearts® hearts of romaine are the young, sweet and tender, inner leaves that are harvested from mature heads of romaine lettuce. Because the outer leaves are trimmed away during harvest, food service is able to use them straight from the packaging with little or no wastage.



- A more recent product is Garden Hearts® Iceberg Babies®. They are only the size of a softball, 11-13cm in diameter. They are commonly cut into wedges and served as the salad course. Again little preparation is needed by the chef.



- Boggiatto Produce used to be specialised growers, moved to generalists in 1990s but are moving back into limiting the type of crops they produce. Crops grown include globe artichokes, broccoli and baby iceberg lettuce (4.5 to 5 inches diameter, 11-13cm). They specialise in hearts of romaine lettuce (cos) which have become very popular with 3-4,000 acres/year (1,200-1,600 ha) grown mainly for food service. Excess supply is sold through commissioned agents.



River Ranch Foods:
Harvesting spinach
which is transported
to their processing
factory in Salinas to
be washed and
bagged.

River Ranch Foods:
Iceberg lettuce is cut
and cored.



**River Ranch
Foods:** Cored
iceberg lettuce is
bulk delivered to
processing factory
for shredding.

- Lettuce is direct sown at 170,000 seeds per acre (420,000/ha) and later thinned to 35,000 plants per acre (86,500/ha). Drip irrigation is used. Main pest problems are powdery mildew, sclerotinia rot, thrips and aphids. Management is by aerial pesticide applications (helicopters). No integrated pest management is used.
- Harvesting is done over six days per week. All packing is done in the field requiring adherence to the new food safety regulations brought in as a consequence of the Leafy Greens Marketing Agreement. Contract labour is used but the farm has its own equipment. Harvested produce is vacuum cooled in Salinas.
- Packing is 48 to the box which receives US\$15.75 per box (AUS\$17.70). Production costs vary from US\$3,000 to \$4,300 per acre (AUS\$8,330-12,000/ha). Discount deals are often done with customers though. The last four years has not been good but this year is shaping up to give better returns. Produce is distributed nation wide.
- In 2006, the company launched an in-house food safety program involving third party audits. Every aspect of the program is guided by manuals covering Good Agricultural Practices, Good Harvesting Practices and Good Manufacturing Practices. This was before the mandatory food safety regulations were introduced after the *E coli 157* food poisoning outbreak attributed to Salinas Valley spinach in 2007.
- Boggiatto Produce is a signatory to the California Leafy Green Handlers Marketing Agreement developed by Western Growers, the nation's leading agricultural trade association. This agreement defined best practices for growing, harvesting and packing, as well as a trace-back system for all leafy greens. Compliance is monitored by government regulatory agencies. The agreement is a supplement to the company's already established, food safety program which meets or exceeds the standard set forth in the agreement.

Monterey County Farm Bureau, Salinas

Bob Perkins, *Executive Director*



- Farm bureaux were set up in 1913 under Federal legislation with the local county providing the set up costs. Farm Bureaux serve as a collective voice for farmers and ranchers and provides information, benefits and services. They cooperate with other agricultural organisations to fulfil their purpose of providing solutions to the problems of the farm, the farm home and the rural community.
- Monterey County Farm Bureau (MCFB) is a private, non profit association of farmers and ranchers. To support the MCFB, farmers pay an annual 'due' of US\$400 (AUS\$450) irrespective of the size of farm. There is no government subsidy. Directors are nominated and voted in by the members.
- There are approximately 450 members in MCFB but there are 2,000 farmers in the County. Membership is declining, although no specific reason was given other than the declining numbers of farms. One of the benefits of membership is providing workers' compensation insurance.
- As a bureau covering all of agriculture, it is those issues that are pertinent to most of the agricultural industries that the MCFB deals with and lobbies the State and Federal Governments of the day. Water resourcing is one of these issues. The Salinas River bed is owned by nearby properties not governments as in Australia. Just clearing weeds from the river bed to ease local flooding is hampered by getting agreement from property owners to do so.



In field packing cos lettuce hearts for food service

Boggiatto Produce, Salinas



Chlorinated water is used to spray lettuce hearts before sorting and bagged.



Boggiatto Farms: Aerial spraying is done by helicopter.

**United States Department of
Agriculture's Agricultural Research
Service, Salinas**



Dr Jim McCreight, *Research Leader*

- The mission of the Crop Improvement and Protection Research Unit is to facilitate sustainable production of vegetable, sugar, fruit and ornamental crops through basic and applied research. It was established in 1942 with scientists first working on guayule, a source of natural rubber, followed soon after by sugar beet research. In 1995, research started into investigating alternatives to methyl bromide soil fumigation specifically for strawberries (and would appear to still be progressing!).
- The research station does work on the United States Department of Agriculture's (USDA) minor use pesticide program, IR4 and is over seen by the Station's agronomist, Sharon Benzen.
- The Station has the only research horticulturist, Dr Eric Brennan, appointed by USDA working on organic crop production. Fields are currently going through the three year conversion process to meet the USDA's Organic Standards.
- One project was looking at how the frequency of growing cover crops (such as Indian mustard) in rotation affects crop yield and profitability for lettuce and broccoli crops.
- The Station also undertakes work in collaboration with the University of California (UC) Davis, investigating soil fumigants for strawberry production as alternatives to methyl bromide and what effects these alternatives have on slow release fertilisers. Dr Hussein Ajwa is a Cooperative Extension Specialist/Scientist at UC Davis who is supervising this research and is a member of the world wide task force, which includes Australia, looking at reducing methyl bromide use in agriculture. He commented that Australia was far more advanced in phasing out methyl bromide as a soil fumigant.
- Surprisingly, methyl bromide is still being used as a soil fumigant under permit although the overall annual use in the United States has decreased from 40 million lbs (18,000 tonne) in 1990 to 1.5million lbs (680 tonne) today.
- Alternative soil fumigants being trialled are Telone™ (dichloropropene), chloropicrin, metham sodium. Methyl iodide is not registered for use in California but is in 47 other US states.
- Despite no metering, the overuse of water sourced from wells tapping into the aquifer is causing concern. Wells have dropped from 300 feet to 900 feet (90-275m). A four year drought in California hasn't helped either.



**USDA Agricultural
Research Service's Dr
Eric Brennan explains the
differences in broccoli
performance grown over
previous different green
manure crops.**



Gabilan View Farms: A large workforce of up to 180 is used to pick strawberries.

Electronic metering is used to monitor individual pickers. Overseers check for consistency in fruit quality being harvested.



Irrigation water is source from underground wells. Fertigation is used.

Gabilan View Farm, Salinas

Ken Lewis

- This farm grows 50ha of strawberries and 42ha of vegetables and potatoes each year. Fields are leased for strawberry growing for US\$10,000-13,000 per acre (AUS\$27,750-36,000/ha). California produces 85% of all US strawberries.
- Strawberry runners are planted at the end of October each year, ready for harvesting to begin in March. Runners are sourced from Northern California and Oregon where the temperate climate provides the necessary chilling for mother plants to produce runners. Runners are stored in cool rooms for 2-3 weeks before planting. Contractors form the beds and lay the drip irrigation and plastic all in one operation. Chemicals for fumigating the soil are applied through the drip irrigation and after two weeks, the planting holes are made through the plastic. Tensiometers are used to schedule irrigations only with strawberries. The cultivar, *Albion*, from the UC Davis strawberry breeding program is the most common variety.
- Ken stopped using methyl bromide as a soil fumigant six years ago and he now uses chloropicrin/Telone™ mix. At US\$3,000/acre (AUS\$8,300/ha), this is one third the cost of methyl bromide. The price of methyl bromide has increased over the years as demand has fallen. Chloropicrin/Telone gives good nematode and soil borne disease control but not as good for weed control.
- Fields are laser planed prior to planting to avoid water logging. While all cultivation and spraying is done by employees, contractors are used for bed making.
- Gabilan Farms has a large workforce with 180 pickers harvesting strawberries and 12 assigned to the vegetable crops. Ken hires his own pickers rather than using contract labour. Labour contracting companies charge 9-14% commission so it is cheaper for him to hire direct. He gets 85% of the pickers returning so the extra effort in hiring is compensated by not having to continually train new staff. While the wages are the same as with contract labour, Ken considers his staff have better working conditions and are treated well. This shows in the high staff numbers returning each year. He even pays for English lessons for Mexican staff. Many of the picking crew are extended families.
- Strawberry pickers all have electronic name tags which are used to monitor harvesting. Pickers are guaranteed US\$5/hour (AUS\$5.60/hour) then 95 cents (AUS\$1.07) per (4lb) box. Pickers on average can pick nine boxes per hour. There are usually 180 pickers at one time and they start at 6.30am and finish at 3.30pm, harvesting six days per week.
- Two spotted mite is the main pest in strawberries. There are four insectaries at Watsonville, 20 miles north (32km), which produce the predatory mite, *Phytoseiulus persimilis*, which the farm uses to control the mite. Ken reckons 50% of strawberry growers in the Valley use predatory mites. Another major pest, lygus bug, which looks similar to Rutherglen bug, is controlled by vacuuming twice a week. It damages fruit by causing cat face. Thrips have to be controlled using pesticides.
- One staff member is responsible for pest scouting and undertaking petiole analysis, (every three weeks) for on-going nutrition. Weather data is also collected and analysed to predict threshold levels of lygus bug. 'Soft' chemicals are used so as to fit in with the integrated pest management program. No re-entry is permitted within 24 hours of any pesticide application.
- Cover crops used to be grown but Ken can no longer afford to fallow valuable land. Commercial blends of fertiliser are used. With soils derived from decomposed granite, acidic deflocculants are used to stop the soil from crusting. Side dressings of fertiliser are applied through the drip irrigation or spraying. Potassium, phosphorus and calcium are the major nutrients applied.

- Run off water is tested twice a year for nitrates and some pesticides to ensure the farm complies with the State environmental regulations introduced five years ago.



- Strawberry yields are 7,000-8,000lbs/acre (7,000-9,000kg/ha) while the average for the Salinas Valley is 6,000lb/acre (6,700kg/ha). Returns are US\$7.80 per box with four one pound punnets to every box (AUS\$15.90/kg).
- Other crops grown as romaine lettuce (cos), mixed lettuce (for fresh cut salad baby lettuce mix), and iceberg lettuce for fresh and processing. Ken grows the vegetables, then other companies take over the harvest and marketing leaving him to concentrate on production.

However, he does have responsibility over the strawberry harvest and uses a broker/shipper to market his fruit. His broker charges 8% commission on average. He does not know what the broker sells his produce for and believes he has to trust his broker.

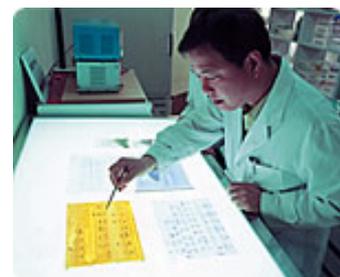
- To survive financially, Ken has to grow at least two crops per year and preferably three. He keeps tabs on all costs of production and knows his margins at any time. However, returns for strawberries have been the worst in 35 years and this is the fifth bad year for vegetables. The recession has affected Ken only slightly but it is the over production that concerns him the most and causing low prices.

Seminis Seeds, (North American Free Trade Agreement Headquarters), Oxnard – manufacturing and sales



Carlos Pinter

- Seminis is the largest developer, grower and marketer of vegetable seeds in the world. Seminis became a wholly owned subsidiary of Monsanto in 2005.
- Some key facts about Seminis: Sales in 156 countries, revenue in 2007 was US\$606 million (AUS\$680 million), has over 20% of the global vegetable seed market, has 22 seed quality laboratories, 51 R&D stations in 17 countries, seed production locations in 23 countries, approximately 3,000 employees.
- The facility here in Oxnard is the largest in the United States. Other facilities are located in Washington and Florida. The Oxnard facility specialises in small seeded vegetables. Large seeded vegetables like peas and sweet corn are handled in the other facilities.
- Seed is cleaned, sized, conditioned and stored on site. Shape, weight and colour sorting are used to clean seed. Meticulous attention is given to data entering with bar coding used through out seed stocks.
- Seed can be treated to customer specifications such as pelleting. Only lettuce, carrot and onion seed is pelleted. Pelleting is also tested for its strength – if too strong then seed will not penetrate the coating.
- Germination tests routinely carried out by the Quality Assurance department to ensure seed maintains quality. Samples from despatches are kept for three years in case of any complaints. DNA electrophoresis is used to test for varietal identity and for percentage of inbreds (sibs) in hybrid lines.
- The storage area is 7,000m² and is maintained at 7.2°C and 32% relative humidity. There are on average 2,000 stock movements ever month. While there was a



handler in control, the forklift in this warehouse follows a magnetic strip to guide it within the aisles.

- Orders are despatched when requests are received from customers. That way, the company can meet the specifications and all information is printed on labels. Hot water seed treatment for seed borne disease management can also be done on brassicas. They still rely on a paper trail and have not gone completely electronic.
- The company has a big emphasis on staff training and record keeping. Monsanto has a policy of moving staff around in different positions and responsibilities as part of its commitment to professional development.
- We couldn't help but notice the attention to neatness and order in both the administration and operational areas. There is also a noticeable emphasis on safety.



Deardorff Family Farms, Oxnard

Scott Deardorff, Richard Martinez

- Deardorff Family farms were originally based near Los Angeles but encroaching urbanisation forced them to move to Ventura County.
- They have leased navy land down near San Diego for some winter production for six years. Cost of land there is US\$70,000/acre (AUS\$195,000/ha) and is leased for US\$2,500/acre/year (AUS\$7,000/ha). Heavy security checks are required of them by the navy. Irrigation water is supplied through channels and the cost of water is increasing in that area.
- Their production philosophy is 'Sustainable farming for a healthier life'. They are gradually converting over to organic production with half of the acreage now organically certified. Transition takes three years and is expensive to do.
- The climate around Oxnard is very favourable for year round production. As land is very valuable, two to five crops per year are needed, as well as choosing high valuable crops such as strawberries. Land cost and water access are the top issues impacting on their business. Labour is not an issue, which is not surprising since being relatively close to one of America's largest cities.
- They farm 200ha vine ripened tomatoes, 80ha celery and some cabbage and mixed leaf lettuce. Irrigation water is sourced from wells. There is no limit to water being drawn from wells. Wells are 60 to 370m deep. Although the State Government is planning to introduce metering of wells. Drip irrigation is used extensively with the drip tape only used for one year
- Celery and roma tomatoes are grown packed and shipped under the USDA National Organic Program and certified by Quality Assurance International. The crops grown on transition land are audited by NutriClean to certified pesticide residue free status.



- Tomatoes are planted in March and continue through mid summer to give a steady harvest from late June through November. Tomatoes are grown on trellis with drip irrigation. Semi determinant varieties are used. As crops begin to reach the end of their productive life, one side is deleafed to encourage ripening. Major tomato pests and diseases are western flower thrips, spotted wilt virus and *Fusarium oxysporum* Race 3. Western flower thrips is controlled using synthetic pyrethroids which is



Deardorff Family Farms, Oxnard: Tomatoes are trellis and drip irrigated. Harvesting looked fairly inefficient compared to comparable farms in Australia.

Picked tomatoes are tipped into bulk bins for delivery to packing shed.



↓ A recently semi automatic installed bulk bin tipper.



Tomato grader



A-Joy is Deardorff Family Farms' second graded brand.

interesting seeing in Australia this insect has developed resistance to this group of pesticides. Tomato leaf roll virus is not a problem but monitoring has to be done.

- Tomatoes are marketed to both retail and food service. The Japanese market has strict regulations on what chemicals can be applied to tomatoes.
- Once tomatoes finish in November, celery is planted soon after. Drip irrigation is also used on the celery once they have been established using over head sprinklers. They do not grow strawberries but pack them for other growers
- The celery is field packed and immediately hydro-cooled and refrigerated. Ventura County has an ideal climate for celery production from November through June and for year-round supplies they also source celery from Santa Maria just further south from July through November. Many different pack styles and sizes are provided to meet their customers' needs.
- To control celery mosaic virus which is spread by aphids, they have a 30 day production break. This is organised county by county.
- Red and green cabbage, red and green leaf lettuce and romaine (cos) are grown, packed and shipped from November to May, an important winter leaf time slot.
- Tomatoes are graded using a conventional colour sorter. Chlorine dioxide spray solution is used to clean them over the grader. They are hand packed in two layer pattern. About 100 staff work in the packing shed in the peak of the season. Bulk cartons (32 to 49 count) are auto packed and are destined to food service markets. They would grade 20,000-25,000 cartons per day. Produce is shipped to Japan, Mid West United States and Mexico. A 25lb (11kg) carton cost US\$1.10 each (AUS\$1.24)
- They have three brands: The *Deardorff Family Farms* label was launched in 2006 and is reserved for the organic and pesticide-free produce for celery, strawberries, tomatoes and roma tomatoes. Their name is used to honour four generations of family and to their commitment to environmentally sensitive farming practices. 
- *Sir William* is their oldest label, named for their great-grandfather and is known throughout the produce industry for consistent quality and value. It is used on sustainably grown celery, romaine lettuce, red and green cabbage, mixed vegetables and strawberries. 
- *Highland Ranch* is named after one of their old farms and used for seasonal vine-ripe tomatoes and vine-ripe romas. 
- Prices for organic produce are good at the moment but the price of conventional tomatoes is not.
- Last year's food safety outbreak with *Salmonella* St Paul which originally implicated fresh tomatoes, impacted on their returns.
- Ventura County has legislation that protects agricultural land. For any rezoning, any developer must first fund a county poll. This tends to make the rezoning agricultural land less attractive.

Los Angeles Wholesale Produce Markets

Jits Teruva, *retired Californian Department Agriculture Inspector*

- The Los Angeles Wholesale Produce Markets was built 23 years ago after private businesses purchased land from the City of Los Angeles. The area covers 12ha and operates six days per week opening at 1.00am.
- It operates as a private wholesale market and contains 30 companies. With limited space, there is a trend for larger companies to move outside the market. All are HACCP certified (Hazard Analysis and Critical Control Point).



Los Angeles Wholesale Produce Market: Jits Teruva explaining that the Market receives produce from around the world but most selling is done behind the scenes.

Compared to wholesale markets in Australia, Los Angeles Wholesale Produce Market is relatively quiet.



While this was Californian 'locally' grown vegetables, the packaging seemed a bit worse for wear.

- Wholesalers are licensed by Federal and State Governments. They are required to provide daily prices to a web based reporting system.
- Only a small sample of produce is on display with most transactions carried out by phone and fax. Produce comes in from all around the world.
- We were surprised to learn that packaging and standards are still regulated by the State Government. Regulated packaging does allow for standardising of containers. The label on the packaging must contain the names of product, the packer, count or weight and country of origin. Melons require the Brix level while avocados have to have at least 8% oil.
- Customers to the Markets tend to be buyers from restaurants and 'mom & pop' stores. Major retailers go direct to growers.
- There are only a few Californian Department of Agriculture inspectors in the market these days. Each county though has one inspector whose role is to enforce government regulation.

Coast Produce Company, Los Angeles

Emily Fragoso, *Marketing Manager* & Tom Johnson, *Warehouse Manager*



- Coast Produce is a leading procurement, mixing, transportation and retail support company for the west coast of the United States. The company began 55 years ago as a one man operation to a company turning over more than US\$100million (AUS\$112million) per year, with 180 employees moving 11 million packages annually.
- The company is a minority owned small business certified with the Southern Californian Development Council. About 90% of employees are from minority groups.
- The company has evolved from wholesaler supplying supermarkets, to service provider then to what they consider themselves now, a produce supply chain integrator. Much of this change was driven by the supermarkets going direct to growers and bypassing wholesalers such as Coast Produce. The Company carries a full range of fruits and vegetables and offer year round specialty program, sourcing and marketing support.
- They were originally located in the Los Angeles Wholesale Produce Markets but moved just outside in 2000. In 2006, they were successful in winning a lucrative six year military produce contract.
- They have facilities in Nogales in Arizona, Florida and Mexico but the bulk of business is done in California. Coast Produce has a range of contracts with growers and consignors. There are 21 buyers specialists in various product categories. The merchandising team work on in-store promotions, new product introductions, seasonal reset and contests.
- The warehouse uses a RF (radio frequency) Warehouse Management System to track all products from when it enters the facility until it is loaded onto the delivery truck. Also, a full equipped quality control station ensures incoming product is stored and computer labeled. The entire warehouse is maintained at 9°C.
- Recognising the explosive growth of Asian and Hispanic populations throughout the United States, Coast Produce took an aggressive approach in helping clients meet the subsequent demand by developing two marketing and product programs, *Coast Asia* and *Coast Caliente* which target consumers of Asian and Hispanic backgrounds respectively. Each program was designed around two premises: firstly, that national supermarkets needed to address lost sales to smaller ethnic grocery markets, and secondly, that increased integration of Asian and Hispanic cuisine into the American food landscape meant an increase in demand across all groups. Consequently, the

03 Bok Choy



03 Bok Choy

03

Bok Choy
Cultivated in China since the 5th Century A.D., Bok Choy is a familiar ingredient in Asian cooking. Its mild flavor is similar to cabbage. Bok Choy stalks are crisp with tangy, slightly sweet leaves. Great when steamed, stir-fried, or braised in chicken stock. Bok Choy is also delicious served in egg rolls, in soups or raw in salads.



Coast Produce Company: To promote Asian vegetables, under their *Coast Asia* brand, Coast Produce has a series of point of sale cards educating consumers on what these vegetables are and how to use them.

Selection: Choose firm, bright white stalks with fresh-looking, green leaves. Store unwashed in a plastic bag in the refrigerator for up to three days.

Preparation: Rinse and trim ends. Slice or chop for cooking. Cook stalks first and add leaves at end of cooking.

Nutrition: (1 1/2 cups raw) Calories-10, Carbohydrates-2g, Protein-1g, Cholesterol-0, Sodium-55mg, Fiber-1g, Fat-0



© 1998 Coast Produce Company

Bok Choy Stir

- 1 head of Bok Choy (trim leaves and slice into 1/2 inch strips)
- 5 Shiitake mushrooms (sliced)
- 1 onion (sliced)
- 1 carrot (cut into matchsticks)
- 3 cloves of garlic (minced)
- 1 Tbsp ginger (minced)
- 1 Tbsp peanut oil
- 2 Tbsp oyster sauce

Heat wok or frying pan on high heat. Add oil, onion, ginger, and garlic and heat until tender. Add Bok Choy and remaining ingredients and cook until tender. Finish with oyster sauce and serve hot with white rice.

How hot do you want it?

See how a wonderful world of chilis adds to your meals, variety that's the spice of life.



 <p>2.5 MILD</p> <p>Anaheim</p> <ul style="list-style-type: none"> Sweet, mild flavor. Add to stew, salsa, soups or try stuffed. Choose glossy, unbroken skin with well-attached caps. 	 <p>0 MILD</p> <p>Banana</p> <ul style="list-style-type: none"> Mild and sweet. Add raw to salads or try in soups, sauces or stews. Choose bright colored, firm flesh. 	 <p>10 WOW!</p> <p>Habanero</p> <ul style="list-style-type: none"> In a word: HOT! Hot sauce or hot salsas. Choose shiny skin, and bright, firm flesh. <p style="font-size: x-small;">* The Hot-o-meter measures heat index, mild to hot, on a scale of 0 to 10.</p>	 <p>1 MILD</p> <p>Hungarian Wax</p> <ul style="list-style-type: none"> Slightly sweet, matures hotter. Add to sauces, salads, relishes, dips or pickle. Choose bright colored, smooth skin. 	 <p>5.5 HOT</p> <p>Jalapeno</p> <ul style="list-style-type: none"> Hot, vegetable flavor. Add to stew, salsa, sauces. Try pickled or stuffed. Choose bright green, firm flesh.
 <p>3 MILD</p> <p>Poblano</p> <ul style="list-style-type: none"> Bell pepper like flavor. Add to salsa, or soups. Use for Chile Relleno. Choose smooth, un wrinkled skin. Darker color means richer flavor. 	 <p>6.5 HOT</p> <p>Red Fresno</p> <ul style="list-style-type: none"> Hot with subtle sweetness. Add to salsa, ceviches, bread batter. Try stuffed. Choose brightly colored with firm flesh. 	 <p>7 WOW!</p> <p>Serrano</p> <ul style="list-style-type: none"> Hot, maturing to slightly sweet. Use in table sauces, relishes, with vegetables or pickled. Choose firm, heavy, smooth-skinned. 	 <p>8 WOW!</p> <p>Thai</p> <ul style="list-style-type: none"> Hot. 3X as potent as the Serrano. Add to dips, sauces, casseroles, meat and poultry dishes. Choose firm flesh. 	 <p>5 HOT</p> <p>Yellow Hot "Caribe"</p> <ul style="list-style-type: none"> Slightly sweet. Usually pickled, but can be used in sauces, casseroles, or salsas. Choose bright color and smooth skin.

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Coast Produce's *Coast Caliente* marketing program is aimed at consumers of Hispanic background. This poster is used at point of sale to explain the 'hotness' of chilis.

INTRODUCING AN ENTIRELY NEW WAY TO SNACK!

Grape Shaped Snacking Tom Toms *Mini Snacking Cucumbers* *Baby Heirloom Snacking Tom Toms* *Chocolate Cherry Snacking Tom Toms*

It's Snackin' Time!

Concerned and busy moms need more options for healthy snacks and retailers need solutions to help them. That's why we're pleased to introduce the Coast Snacking Line. Each pack in the line is a refreshing, "good-for-them" alternative that's easy to throw into lunch boxes or prep for an after school snack. And because they're from Coast, you'll know that the highest levels of quality and taste have been met. To add these items to your produce section visit www.coastproduce.com or call us at 213-955-4900.

STRENGTHENING YOUR PRODUCE SUPPLY CHAIN

COAST
• PRODUCE COMPANY •

Coast Produce has developed a range of fresh produce 'snack' lines targeting mothers with young children.

success of the programs depend on a solid core of products, proper merchandising and good employee training. Coast Produce's ethnic programs provide for all three, with tiered buying recommendations based on store-by-store demographic research, PLU stickering (price look up), customised store signage and recipe information, special event and promotional planning based on ethnic calendars, and informational training catalogues.

- Coast Produce is an active member of Produce Marketing Association (PMA). Much of the consumer research is sourced from PMA.

University of California, Riverside

Steve Cockerham, *Superintendent, Agricultural Operations* & Barney Powell, *Research Farm Manager*



- This research farm is 200ha and there is another one in the San Joaquin valley (220ha) near the Salton Sea. The University of California (UC), Davis also has a large research farm which has the majority of vegetable research.
- Land is worth around US\$80,000/acre (AUS\$220,000/ha) in the Riverside region! Irrigation water is source from a shared water company which pumps water from dam 27km in the nearby mountain range.
- UC Riverside has the largest citrus arboretum in the world as well as a large date germplasm. Much of the State's citrus entomology and pathological is carried out here. Other research includes turf varietal evaluation for drought tolerance and the effects of recycled water on turf growing, mapping of avocado genome and breeding drought tolerance cowpeas for developing countries.
- Californian State University, with 23 campuses, focuses on undergraduate degrees while the University of California is more involved in post graduate studies.

California Leaf Greens Marketing Agreement

- In 2007 California farmers came together to address a food safety issue that had arisen as a consequence of a recent *E.coli* 157 contamination in spinach. The outbreak was attributed to serious illness and death among consumers and forced the United States Department of Agriculture (USDA), in an unprecedented move, to recall all leafy salad green vegetables nationwide.
- As a result the California Leafy Green Products Handler Marketing Agreement (LGMA) was formed. Operating with oversight from the Californian Department of Food & Agriculture, the LGMA is used to verify that farmers follow accepted food safety practices for lettuce, spinach and other leafy greens using third party government audits. The program is an unprecedented commitment to food safety with an objective to protect public health.
- The LGMA program conducts regular and random audits of all member companies using USDA trained, California Department of Food & Agriculture inspectors. LGMA members are subject to four standard audits and one unannounced audit per year.
- The LGMA program is based on a comprehensive set of food safety practices specific to the leafy greens industry and developed by industry experts and scientists. These practices are designed to reduce the risk of contamination on the farm through harvest and focus on key risk areas. LGMA member companies can only market products that have been grown and harvested



using these food safety practices. To date nearly 120 handlers, representing approximately 99% of the volume of California leafy greens, have joined the LGMA.

- The LGMA's transparent system of penalties and consequences for non-compliance make it an even more rigorous program. All audit findings require corrective action and flagrant violations result in decertification from the program and public disclosure of the member.
- The California LGMA has become a model food safety program. Similar programs are already being adopted in other states and for other products. There is also an effort underway to create a national leafy greens marketing agreement.
- Fourteen leafy green products are covered by the LGMA including: arugula, butter lettuce, chard (silver beet), escarole, iceberg lettuce, red leaf lettuce, spinach, baby leaf lettuce, cabbage, endive, green leaf lettuce, kale, romaine (cos) lettuce and spring mix.

Produce Marketing Association Fresh Summit International Convention & Exposition, Anaheim Convention Center, Anaheim



- Founded in 1949, the Produce Marketing Association (PMA) is the leading trade association representing nearly 3,000 companies from every segment of the global produce and floral supply chain. Members rely on PMA year round for the business solutions they need to increase sales and consumption, build strong professional relationships, and expand their business opportunities.
- This was the 60th Fresh Summit. There were 19,000 delegates (a record attendance!) from 58 countries around the world and 800 exhibitors participating in three general sessions and 19 workshops. What was good to see was the attendance of 158 students.
- This year's Fresh Summit was being held after what was a difficult year for most businesses due to the United States economy in recession and the lower purchasing power of the American consumer.

State of the industry

Brian Silbermann, *Chief Executive and President of PMA*, outlined trends and developments in the fresh produce industry over the last year.



- Brian reminded us that while the industry is male dominated, it is the women who make most of the consumer shopping decisions. Do we pay enough attention to how women think and connect with fruit and vegetables? Do we pay enough attention to the female leaders within the industry?
- The biggest challenge for the future of agriculture is 'producing more with less' –less land, less water, less labour, fewer companies. With world population increasing, the demand for food by 2050 is expected to more than double. The demand from developing nations will result in the need to import more fresh produce. Where are we going to grow all this extra food? 40% of the world's available land is too dry, 21% is too wet, 21% is too cold, 8% is too rough or unsuitable soil. Add increased urbanisation, particularly in developing countries, and the situation gets worse. Access to water is becoming a critical issue world wide.
- Farmers use 70% of the world's fresh water. During the last century, global water use increased twice as much as population growth. In 10 years, we will need 17% more water just to feed the world's population. The challenge will not be using the water resources we have but in managing the politics of who is going to get access to

it. The politics of water will make the politics of food safety seem easy. The United States would learn a lot about water management from other countries like Australia. The US business model is based on abundant land, water and fuel. Two thirds of the world's population could easily experience water shortages in the next 15 years. Opportunities are emerging such as seed companies developing varieties better suited to receiving less water. Crop decisions are now being made with water availability is a primary consideration.

- Perhaps we should value water like petroleum. We can no longer accept that it takes 100lbs of water to produce 1lb of food (100L water to 1kg food). We have made great strides in using technology in developing supply chain efficiencies. It's time to be just as serious with water management. The entire supply needs to appreciate the entire economics of production will change.
- Half of American consumers believe the US economy is getting worse not better despite the signs that financial markets around the world are bouncing back. This is reflected in changing consumer purchasing behaviour. Consumers are spending frugally and buying differently. The recession is changing what people eat, how often and where. They are turning to more basic products. What has occurred in the US is the erosion of the country's psychology of affluence. The smart shopper looking at price and value will be here for a long time to come. Consumers are not expected to revert to those old shopping habits soon.
- Consumers around the world are recalibrating from price and want to value and need. Internet shopping for price comparisons has become more popular. A virtual and real shopping world now exists which the fresh produce industry has to come to terms with. This is challenging seeing our products are so real and so 'high touch' but we cannot ignore the high tech world that exists alongside. Online shopping is eroding the concept of shopper loyalty.
- PMA research shows that while healthy food appeals to all consumers, it is the older consumers that truly embrace the concept of using food to fuel a healthy lifestyle. Locally grown is seen as healthier and it is this perception that has made farmers markets become so popular. Even food service and major stores are adopting the locally grown, locally consumed ethic.
- The 'locovore' trend (consumers who prefer to buy 'local' produce and produce in season) is just one component at work in developing consumer trends. Issues such as global terrorism, global warming and declining trust in financial markets, government institutions and public health institutions are causing consumers to turn inwards, seeking closer connections with their lives and their food. This desire for consumers to reconnect is seeing the move to 'small' becoming a very big force. Community support for agriculture is very big in the United States.
- With a changing pattern of shopping behaviour, consumers have turned to frozen and canned products. Consumption of frozen foods has increased in the last year (up 1%) over fresh produce. There is still a perception that fresh produce is expensive, harder to prepare and has inconsistent quality.
- Ethical consumerism is here to stay. In the UK, consumers now believe recyclable packaging is a 'must have' not a 'nice to have'. There is a trend now for consumers to desire to have a connection with their food. They want to know from where their food came, how it was grown and if workers who handled it are treated fairly. Companies that meet these new standards of social expectations are being rewarded with increased consumer purchases. Lessons can be learnt from Starbucks who proudly advertise their social responsibility on how the coffee they purchase is grown in developing countries.
- The changing financial world and a yearning to a simpler 'high touch' world have also created the 'nesting consumer', brought about by part social and part economic circumstances. Consumers are eating out less and making more use of staple

products. While consumers were already on this 'nesting' path prior to the recession more have been forced there as a result. Home gardening has become popular again. There has even been a 40% increase in home garden seed purchases.

- Consumers are looking for the face behind the food and the story behind the sustenance. Consumers are pushing back what they see as industrial agriculture and society's reliance on excessively processed food. Isn't fresh produce in the best position to capitalise on this trend? But we focus more on the products we grow rather than our consumers. The industry is silent in telling consumers the story behind the food. The more information you have available, the more interesting you are to the consumer.
- Consumers are wanting to build a connection to our products. In a 'high tech, high touch' world, the challenge for us is to put a 'face' to our products. Packages and labels can do so much more. It is a provocative thought in an industry dominated by traditional commodity thinking.
- Sustainability is another product of ethical consumerism. It is moving from cost compliant to being integrated into the company brand. Consumers will increasingly want to know that our products have been grown in an environmentally friendly manner and transported with the smallest carbon footprint possible. The availability of food in an era of scarce water and land will become just as important as the sustainability of people, planet and profits.
- The large traditional store retailers are responding in part by creating multi-format stores. Smaller stores which appeal to different demographics is one option. Walmart, Publix, HEB and Kroger already have dedicated Hispanic format layouts for different demographic groups and different value definitions.
- Retailers are also responding to consumers' new definition of value by offering an assortment of environmentally friendly pack sizes as well as more store (private) label brands. Private label branding offers a connection between the retailer and the consumer. Store label brands grew 10% this past year.
- In food service, even though sales have slipped, opportunities exist for fresh produce. Restaurants are repositioning themselves in health and well being. This is an ideal place for fruit and vegetables not only to enhance restaurant profitability but improve nutrition and customer satisfaction.
- PMA has undertaken market research in the food service sector. Food service now sees fresh produce as a way to differentiate itself from the competition. Three quarters of restaurants use fresh produce to attract customers and 60% are looking for more ways to incorporate fresh produce into their menus. 41% expect to serve more fresh produce in the next two years. Locally grown is part of their purchasing strategy with 70% preferring locally grown. 60% of surveyed restaurants are already serving local grown produce.
- PMA has agreed with representatives from the food service sector and nutritionists to work together to double fresh produce use by 2020. They have agreed five collaborative strategies:
 - Fresh produce having a stronger presence in food service and telling the story of 'field to fork',
 - Improving consumer confidence in fresh produce including food safety, trust and integrity,
 - Demonstrate social responsibility by balancing the needs of people, the planet and profitability,
 - Foster closer collaboration among the industry sectors,
 - Foster closer collaboration with government and other stakeholders.
- Food safety is an essential component in our business planning. For buyers and suppliers, food safety must be non negotiable. It is the corner stone of sustainability

and profitability of business. All employees need to play a role in the fresh produce businesses and to take responsibility.

- PMA is tackling food safety three ways: enhancing and interpreting the science behind food safety, providing members with tools to integrate food safety into day to day business and working to enhance collaborative relationships with government.
- PMA is a founding member of the Center for Produce Safety (CPS). Established by public and private partnership at the University of California, Davis in 2007, CPS aims to fund original research, offer a searchable database of global produce safety research; and develop and deliver industry training and outreach programs. As the science of food safety is constantly evolving, we will have to expect to see new rules and changes to our food safety systems.
- Health care reform is top of mind in the USA at the moment. However, there seems to be a disconnect with government policy on health care and prevention of chronic illness. Obesity is a major reason for rising health care costs and yet nothing is mentioned about increasing the consumption of fresh produce. Pizzas can be delivered to anywhere in the USA within 30 minutes and yet no one has figured out how to do the same for fresh produce. What does seem hard to swallow is that government subsidies are available to encourage production of unhealthy foods and yet none is available for fresh produce.
- Mr Silbermann took the opportunity to announce the formation of PMA's first global affiliate, PMA Australia New Zealand.

PMA Education Foundation

- PMA encourages young people into the industry. PMA Education Foundation was set up in 2006 and is dedicated to ensuring the prosperity of the produce industry by partnering with companies to attract and retain a talented workforce while building strong leadership teams. The Foundation aims to strengthen all segments of the supply chain by providing a 'produce ready' employee base and continually providing them with structured and personalised training and professional development programs.
- PMA's Careers Pathway fund enabled 50 university students from the United States and three other countries, including Australia to attend this year's Fresh Summit. It was a great opportunity for these students to learn and meet people in the space of a few days and to see the opportunities the fresh produce industry has to offer. Over half the students find employment within the industry.



Finding the return on investment of sustainability

- Fresh Summit had a number of concurrent workshop sessions. This workshop was interesting as it looked at sustainability but in a different context to what we are familiar with seeing in Australia. It was moderated by Kathy Means, Vice President of Government Relations & Public Affairs at PMA
- PMA has defined 'sustainability' as 'the way companies manage their business to produce an overall positive impact on society through environmental, economic and social actions'.
- PMA research into consumer attitudes asked shoppers how often their purchasing decisions of fresh produce were influenced by their concerns for issues such as the environment and social well being. Six percent of respondents said 'always', 17% said 'usually' and 42% said 'sometimes' and 34% said 'rarely' or 'never'. However, no comment was made on how this data was collected.

Exhibitor examples

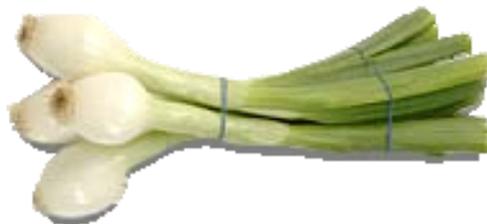
Boskovich Farms, Oxnard California

This vertically integrated vegetable business farms over 4,000ha in California and Mexico, producing 30 different vegetable crops year-round with shipping points also in Salinas, California, and Yuma, Arizona. There is also a processing division, Boskovich Fresh Cut, which provides a diverse line of retail and foodservice items.



The company makes a strong effort to publicise their food safety credentials: Good Agricultural Practices in the field, Good Manufacturing Practices, Hazard Analysis and Critical Control Point (HACCP) plan, monthly internal audits, independent third party audits, trace-back and recall program.

Cebollitas are also known as Barbeque Onions, as they are promoted as an accompaniment to grilled meals. The name 'Cebollitas' is derived from the Spanish word for 'little onions'. Both the bulbs and green tops are edible and impart a mild, sweet onion flavour. They are sold in bunches and in 4 count bags in the value added section of the produce department.



Royal Rose™ Radicchio

Based in Salinas, California, Royal Rose is the biggest producer of radicchio in the United States. It has capitalised on the developing bagged fresh cut salad market and now promotes the health benefits of the antioxidants that are found in radicchio.

Crops are grown in California, Arizona, Florida and Chile ensuring all year supply of fresh radicchio for both American and export customers.



Colorful Harvest

Is a nationally branded grower, shipper, and marketer of colourful fresh fruits and vegetables in the Colorful Harvest and Green Giant Fresh brands.



They have partnerships with seed breeders and strong national brands that create value in the supply chain for retailers, wholesalers and food service procurement organisations.

Their main products are strawberries and other berries, rockmelons, avocados, beans and coloured vegetables such as purple cauliflower and artichokes, rainbow carrots and red sweetcorn. Crops are grown in Canada, United States, Mexico and South America



Sweet Red Corn™ is grown in California, Florida and Georgia for all year round supply. Promotional material mentions that this sweetcorn variety was bred by 'traditional' means, subtly inferring there is no genetic engineering involved.



Jacobs Farm

Was founded as a small, family farm which became committed to organic farming. Over 60 varieties of herbs and edible flowers are produced in their northern California coastal farms.



After establishing the organic farming operation, in 1985 they encountered a community of struggling, subsistence-level farmers in the valleys of the Baja Peninsula, Mexico and formed the Del Cabo cooperative.



Del Cabo has their own sweet flavoured tomato varieties:

← Honey Bunch Golden Grape Tomatoes

Red Pear (Teardrop) Cherry Tomatoes →



The idea of farm and community centred production supported by international market opportunities proved to be successful. This collaboration between Jacobs Farm and the Baja growers provides over 400 farming families with needed training in organic growing, harvesting, and handling as well as start-up funds, farming technology, administrative training and consistent distribution channels, ensuring the best return for small-scale farms.



The Del Cabo growers were one of the first Mexican farmer groups to be certified by an independent US certifying agency before the USDA National Organic Program was established. Since 1991, all of the Del Cabo growers' fields and packing facilities have been continuously certified to USDA standards.

Christopher Ranch

Is America's largest family owned garlic producer and has been involved in growing garlic in Gilroy, California for over 50 years. The farm produces 27,000 tonnes per annum.



As well as marketing fresh whole garlic, Christopher Ranch produces a range of value added products such as chopped garlic in oil to fresh-peeled garlic.



Garlic's health-boosting power comes from a sulphur compound known as allicin. Allicin is released when garlic is chewed or crushed. Christopher Ranch has supported research with the National Food Laboratory that shows their fresh Californian garlic contains 19% more allicin per clove than many imported garlic varieties. Also while a 600mg capsule of garlic extract produces about 3,600 micrograms of allicin, a clove of fresh garlic produces 18,300 mcg of allicin. Christopher Ranch now uses this research to promote their product.



Christopher Ranch has also compared their garlic with Chinese garlic in terms of total soluble solids, taste and pungency. The company continually promotes their product as being superior and advises consumers how to tell the difference between their product and the imported garlic.

This poster is accompanied by the words:

Look for the garlic with plump, firm bulbs. Check to see if the roots are still intact – garlic imported from China typically has the roots shaved off.

Tanimura & Antle

Has been a giant in the fresh produce industry since the company was formed in 1982 in Salinas, California. They farm over 12,000ha and grow, pack and ship vegetable products all year round, marketing in North America and overseas. They are renowned for their innovative product ideas.



A recent packaging innovation is a proprietary clamshell design exclusive to Tanimura & Antle. Artisan™ Lettuce cradles each head of lettuce in a separate ‘scallop’ providing produce protection and stability. This clamshell uses up to 12% less material than similarly sized “square sided” clamshells.

Each four-count clamshell contains one each of fully mature petite heads of Oak, Tango or Gem lettuce in a mixture of red and green varieties.



4 and 6 count clamshell



Over 800 fresh produce businesses exhibited at this year's Fresh Summit Exhibition.



New products are displayed in the exhibition centre's front entrance area.



Some businesses go to considerable expense in setting up their exhibits, such as Taylor Farms. Taylor Farms is the largest supplier in North America of value-added fresh produce to the food service industry.

Key messages and implications for Australian horticulture

Production

- Good soils, ample water, an ideal climate and no shortage of labour would make Salinas Valley growers the envy of Australian growers.
- There is a greater focus on bagged, semi processed fresh cut vegetables either for salads or prepared ready-to-cook vegetables than in Australia. Packing is done in the field which creates its own set of challenges.
- Access to water is not an issue in the Salinas Valley. Water is all sourced from underground wells which are not metered and there is no restricted allocation. Quality is good.
- Hardly any integrated pest management was practised on vegetable farms and was considered only something used by organic farmers.
- Labour was plentiful as was seen with the number of workers on field packing machines. While there was some drip irrigation, there was still much use made of shifting aluminium irrigation pipes. The abundance of cheaper labour would seem to contribute to the lack of innovation of labour saving machinery.
- There was greater involvement of government in the commercial area such as in food safety and regulating grade standards compared to what we are used to seeing in Australia.

Food safety

- The outbreak of the *E.coli* 157 contamination of spinach in 2007 and subsequent later outbreaks such as *Salmonella* Saint Paul attributed to fresh tomatoes led to the salad and leafy vegetable growers working with the Californian Department of Agriculture to develop the California Leafy Green Products Handler Marketing Agreement (LGMA).
- What surprised the tour participants was that the industry seemed to have 'gone overboard' with food safety regulations to the extent that strict procedures were in place for handling vegetables in the field. Yet birds were flying over the crops as we were visiting them.
- We were surprised to see that reliance on government auditors rather than using commercial third party auditors. We wondered if this was a reaction to the apparent earlier lack of good food safety protocols within the fresh produce industry. The industry seemed to be accepting of the government taking responsibility for food safety.
- The California LGMA has become a model food safety program. Similar programs are already being adopted in other states and for other products. There is also an effort underway to create a national leafy greens marketing agreement.
- While the produce industry in Australia would appear to take more responsibility for food safety than what seems to happen in the United States, it cannot be taken for granted. If a major public health issue involving fresh fruit or vegetables occurred in Australia, would the horticultural industries be prepared?

Recommendations

- The Australian Vegetable Industry should develop a management plan to handle issues such as food safety outbreaks. This plan should also contain a communication strategy. Such a plan will require extensive consultation to ensure industry wide ownership and understanding of roles and responsibilities.
- Australians travelling just to attend the PMA Fresh Summit should be encouraged to visit other horticultural businesses and related facilities. PMA deliberately varies the location of the Summit each year and provides great opportunities to meet and learn from fellow horticultural business people in the USA.

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References

California Agricultural Resource Directory 2008–2009
Ventura County Farm Bureau