Californian Prune Industry Study Tour 2014

Ann Furner
Australian Prune Industry Association

Project Number: DP13701

DP13701

This report is published by Horticulture Innovation Australia Ltd to pass on information concerning horticultural research and development undertaken for the dried prune industry.

The research contained in this report was funded by Horticulture Innovation Australia Ltd with the financial support of Australian Prune Industry Association.

ISBN 0 7341 3467 3

Published and distributed by:
Horticulture Innovation Australia Ltd
Level 8
1 Chifley Square
Sydney NSW 2000
Telephone: (02) 8295 2300
Fax: (02) 8295 2399

Horticulture Innovation Australia

Contents

Summary 3
Keywords 7
Outcomes 8
Results of Discussions 9
Implications for Australian Horticulture 10
Dissemination of Information 11
Itinerary 12
Recommendations 14
Acknowledgements 16
Contact List 17
Appendices 19

Summary

In mid-July 2014 a study tour group visited California to investigate all aspects of the local dried plum industry. The group membership included prune growers and a private consultant.

The tour included a wide range of visits and meetings with some of the major players in the California dried plum industry, including producers, dried plum processors/marketers and researchers (including UC Davis plant breeders) and grower representatives (including Californian Dried Plum Board).

Some Background:

Australian Prune Industry Association (APIA), processors and growers strongly agree on the need to stimulate investment in new plantings of prunes varieties and lift the level and quality of Australian production from current levels.

All industry sectors agree that the future for the Australian industry depends on it re-establishing itself as a reliable supplier of high quality prunes on the domestic market and opening export markets that can attract premium prices.

Stakeholders in the industry must provide growers with confidence in the future by improving prices, developing good market intelligence and providing latest research results & information on new technologies and practices which will help growers to increase their productivity and profitability.

APIA sees networking with prune industries in other countries as an important part of a strategy to develop direct access to the latest market and technical information.

In recent years the prices being paid for prunes by Australian processors has decreased significantly. Grower's optimism and confidence in the industry has decreased resulting in reduced investment into the industry. Growers experienced a reduction in price for 4 consecutive years from 2010 to 2013. Growers were advised by the major processors about tough market conditions, due to surplus global tonnages and the high Australian dollar, which were direct contributors to the reduction in prices received.

However in recent months it has become clear that global prune production is at an all-time low resulting in a global shortage of the commodity. Growers from California, Chile and Argentina experienced adverse weather conditions during their growing season which significantly affected tonnes produced. With Australian growers facing increasingly difficult growing conditions, like other prune industries around the world, it is important the Australian growers learn to recover quickly from these conditions and become sustainable. Consulting with Californian growers and industry representatives will highlight areas of improvement and potentially recognise areas for further research and development.

Grower investment in new plantings has been limited and some growers have exited the industry. While disappointing, this situation has been influenced by severe, adverse weather conditions during recent harvests, flooding, heat waves and a general lack of financial reserves due to low yields during years of

drought. With a recent price rise and a more positive outlook from the processors, there is renewed confidence amongst the growers.

As future pricing is an important factor in attracting investment, closer consultations with US industry representatives about these trends would be useful in gaining a clear understanding of the market outlook for prunes.

Because of the similarities in production systems, it is generally considered that the US prune industry potentially offers information of more use to Australian growers, relating to new varieties, on-farm cultural practices, irrigation systems and other R&D results.

The Study Tour objectives:

- On-farm visits – to observe & discuss best practice production management
- Prune processor/marketers visits – to observe and discuss best practice processing using the latest available technologies to produce high quality end products. To also assess the latest prune market outlook and better understanding of consumer trends.
- Research (prune breeding) – to discuss and review on going prune breeding programs in California and to investigate the potential for a non-suckering rootstock which could add value to the Australian industry.
- Research (water related) – to review research projects being undertaken in relation to water use efficiency
- Research (solar heat exchanges) – to review the use of solar energy in the dehydration of prunes.
- Research (nutrition, pest and diseases) – to review advances in orchard management
- Retail visits – to observe and better understand consumer trends and retail marketing developments in California.
- Californian prune industry contacts – to establish new industry contacts and re-affirm others so as to improve the communication between the US and Australian industries and ensure growers in both countries are better informed.

Some Study Group Observations:

- Definition of a prune (Ted De Jong, UC Davis, prune breeder) – **"a prune is a plum that when ripe, can be left in the sun and will dry naturally to an edible dried fruit (prune). A non-prune plum will go rotten under these same conditions"**. This natural drying is due to the high sugar and high solid content of the prune. Is also the actual composition of the sugar (Fructose, Sucrose & Sorbitol) components in the prune, the amount of each type of sugar will affect its drying capacity and eating quality.
- Rainfall & seasons

	Av rainfall	Av summer rainfall	Av summer temperature
Yuba City	577 mm	2.19 mm	34 degrees
Griffith	406 mm	70 mm	31 degrees

- The weather in Yuba City has been the major factor in influencing how US prunes have been traditionally produced. Rather than growing several varieties, Californian growers tend to grow only one variety, Californian French Improved. This allows for easy planning at harvest. Australian Growers grow several varieties spread the risk through the harvest period if bad weather hits.
- The Californian industry is experiencing many of the challenges that the Australian industry has encountered over the last ten years. Availability and rising cost of labour, transition away from labour intensive practices, strong competition from other commodities, reduced government funding for research and the supply and cost of water are some of these issues.
- The US is continuing to invest in research (although less funding) including the development of new plum varieties and rootstocks, suitable for the dried fruit industries. This may provide the Australian industry with an opportunity to access new varieties.
- The US tree size is smaller than in Australia (2.5-3m high) and are generally planted closer together. This helps control vigour reducing limb breakages and puts less stress on the trees. However, on the negative side, smaller trees means more trees per hectare, more tree costs, more harvesting costs, more hand pruning costs.
- Irrigation of prunes is predominantly on drip irrigation however there are still many traditional smaller farms on flood or furrow irrigation. California is currently experiencing a severe drought (this year) due to around only 20% of annual snowfall fell in the mountains last winter. This has meant a ZERO water allocation from rivers & dams. The entire prune crop is being irrigated from on-farm bores, which generally have no restrictions on the amount they can extract. This has resulted in a significant drop in the level of the underground water levels and many farmers have had to deepen their bore holes. Mainly extracting from 30 to 60m deep but some are much deeper than that.
- The California prune growers do not have set fertiliser regimes; the program depends on the tree age, the soil and the irrigation system. Some growers band or broadcast solid fertiliser along the tree row, some by fertigation and all apply some nutrients via foliar sprays. The soils are lacking in Potassium so most growers apply up to 500kg/ha of Potash (in various forms) in autumn, spring & summer. Visual symptoms of K deficiency are commonly seen with yellow leaves with burnt edges and limb die-back. With the low returns to growers, there is a reluctance to apply any more fertiliser than essential. Australian soils tend to be high in Potassium so very little is applied to prune orchards.
- While both countries have similar pests & disease, the management strategies are quite different. As California is mostly rain free during the growing period they have much less disease pressure but they struggle to contain diseases when they occur. Australian growers are more aware of disease and have better strategies to control those diseases. In California they place more emphasis on disease prevention sprays at flowering.
- Currently the majority of prune trees are hand pruned each winter season. The cost of this is about US $1.50 - $3 per tree (about US$ 1500/ha). With the downturn in $ returns to prune growers, there is more interest in mechanical pruning (about US$ 30 – 40 /acre or AUD$80 to 100/ha).

- Crop thinning appears to be standard practice in the industry. There is much discussion about the ideal number of fruit per tree but this depends on each grower's experience. Thinning is done, mostly by using a tree shaker, at the start of pit hardening (called the Reference Date). Fruit numbers are estimated at this time and shaking done if required.
- Cost of growing prunes in California is about US$ 2,500 per acre (variable costs). There are no current industry figures for Australian production but would estimate them to be greater than US, probably 30 to 50% higher. Drying costs are less than half the cost in in Australia. There are already industry research projects looking at reducing costs, such as drying technology.
- Labour costs, while still only half of the hourly rate in Australia, are rising which is encouraging more growers to mechanise. Most labour is supplied by a contractor rather than being hired directly by the grower. Most growers appear to have a hands off approach compared to what happens in Australia, with contract workers operating the machinery and growers supervising.
- The Californian prune crop normally does not receive any rain during harvest so timing of harvest is a little more flexible, however all growers are conscious of the % of fruit falling during ripening and want the fruit picked as soon as practical. There is considerable emphasis on fruit pressure rather than Brix level. Also, there are many dehydrators in the prune growing area and most growers do contract drying as well as their own crop. So drying is not necessarily causing harvest delays.
- The drying contractors and processors claim that fruit pressure will have a greater effect on drying quality and dry-out ratio once the fruit reaches optimum Brix level. Still discussions about the benefit (or loss) by leaving the crop on the tree and sustaining more fruit drop. The processors want higher sugar levels & bigger fruit and the growers want bigger yields.

Keywords

California

Dried Plum

Prunes

Dehydration

Pitted

Non-pitted

Irrigation

Pressure

Brix

Itinerary

Contacts

Study Tour

Report

Californian Dried Plum

Breeding

Marketing

Research

Processors

Tons

Tonnage

Orchard

Acres

Machinery

Harvesters

Outcomes

The expected outcomes or objectives of the Study Tour have been outlined in the Media Summary.
An outline of how these objectives were met is detailed below:

- On-farm visits – enabled group members to observe and discuss best practice production management and different harvesting options, including traditional harvesting and drying facilities.
- Processor/marketers visits – allowed members to observe best practice processing using the latest available technologies to produce high quality end products. Importantly, it provided an opportunity to discuss recent crop estimates for northern hemisphere and views on the latest prune market outlook. Members also gained an insight into US consumer trends.
- Research (prune breeding) – visited UC Davis research station which enabled members to discuss the current prune breeding program and the potential for further imports into Australia, and other research relating to more advanced production systems.
- Research (water related) – another meeting that enabled members to review and gain an understanding of the water management and response to reduced availability of water for irrigation purposes and need to cater for environmental water requirements.
- Retail visits – members undertook several discussions with Californian Dried Plum Members and gained a better understanding of retail marketing in California and consumer trends.
- Californian dried plum industry members – the Study Tour group was well received by all parties. A wide range of meetings with growers, processors, Californian Dried Plum Board members, Californian Dried Prune Bargaining Association Board staff, researchers & others ensured that members were able to establish new industry contacts & re-affirm others.

Results of Discussions

The Study Tour has confirmed the value of ongoing liaison and networking with major overseas producers of dried grapes.

All members who participated and the industry stakeholders who read the reports, have gained a better understanding of the US dried plum industry and most importantly, the improved outlook for dried plums as a result of the reasonable balance in world supply and demand.

The findings from the Study Tour will be outlined in summary articles to be published in The Vine publication (a joint Dried Fruits Australia, Australian Table Grape Association magazine) which is distributed to all prune growers on a quarterly basis. The first article was published in the July-Sept 2014 edition of The Vine and the second article was published in the Oct-Dec 2014 edition.

In addition, Peter Reynolds a private consultant, who was a member of the Study Tour group, has reported to an Annual Growers' Conference held 8 September 2014 in Griffith.

Implications for Australian Horticulture

The Study Tour has again confirmed that the US dried plum industry faces similar issues to those confronting growers in Australia.

Reduced availability and rising cost of labour, strong competition from other crops, reduced government funding for research, unpredictable weather conditions (drought) and reduced supply and high cost of water are just a few of these.

Californian dried plum acreage continues to decline. Currently it stands at around 45 000 acres, where in 2007 it was around 85 000 acres. This has meant the crop has reduced from around 200 000 Tons of dried plums to around 100 000 Tons. There has been a decrease in the amount of bearing prune trees in production plus the existing production has generally had fewer inputs, resulting in yields and lower quality fruit produced from those orchards.

The serious problems relating to security of water supply in California are similar to those experienced over recent years, in Australia. Major factors include drought and the strong competition for urban supply and environmental flows.

Higher cost of labour, although much lower cost than Australia, has resulted in increasing mechanisation in California - following the trend seen in Australia for some years.

The US industry continues to invest significant funds into health and nutrition research – providing results which benefit the global dried prune industry.

Dissemination of Information

Following the Study Tour, all members were required to provide input for a joint report on their observations and conclusions.

As a result, a summary article was published in *The Vine* (Oct-Dec 2014 edition Vol. 10 Issue 4).

Prior to the study tour an article was published in *The Vine* (July – Sept 2014 edition Vol. 10 Issue 3).

Two articles have featured in *The Area News* newspaper – "Prune Growers Off on US learning tour" 11 July 2014 and "Riverina growers offered a plum job" 25 July 2014.

Peter Reynolds (Reynolds Horticulture) wrote a travel blog while the study tour members were in California. The travel blogs were posted on APIA's social media pages. 10 blogs where shared via Facebook and Twitter.

Peter Reynolds has reported on the Study Tour to members at the organisation's AGM and Annual Conference on 8th September 2014.

ABC Local Radio, Bruce Gowrie-Smith was interviewed about the Californian Study Tour and the Sunsweet export experiment. 28th July 2014. http://www.abc.net.au/news/2014-07-28/californian-prune-exports/5628022

APIA Chairman, Grant Delves and Bruce Gowrie-Smith, member of the study tour, spoke to approximately 100 people at an Agriculture Options Workshop held in Griffith on 30th July 2014.

Itinerary

Final itinerary for Californian Prune Industry Study Tour 2014

Monday, 14th July 2014

- Arrive in Sacramento - free afternoon
- Overnight Sacramento - Hilton Sacramento Arden West, 2200 Harvard St, Sacramento

Tuesday, 15th July 2014
Sacramento

- 10.00am UC Davis, meeting with Ted De Jong and Sarah Castro, prune industry researchers/plant breeders.

- Location - Wolfskill Experimental Orchard (10miles West of Davis)
- Meet Ted at UCD, direction with Grant.

- 3.00pm Californian Dried Plum Board, meeting with CEO Donn Zea.

- Sacramento – 3840 Rosin Court, Suite 170, Sacramento, CA 95834

- 6.30pm Dinner hosted by Tom Rettagliata of Ashlock Company, a world leader in pitting machines.

- Restaurant – Season 52, 1689 Arden Way, suite 1065, Sacramento.
- Overnight Sacramento - Hilton Sacramento Arden West, 2200 Harvard St, Sacramento

Wednesday, 16th July 2014
Yuba City

- Travel to Yuba City approx. 45mins.

- 9.00am Taylor Brothers Farm – meet with John Taylor – organic prune grower and processor for a farm and processing plant tour.

- Address - 182 Wilkie Ave, Yuba City CA 95991

– 2.00pm Valley View Packing – meet with Jaswant Bains family owned grower and processor for a processing plant tour.

- Address - 833 Tudor Road, Yuba City, CA 95991

- Free evening
- Overnight Yuba City - Hampton Inn & Suites, 1375 Sunsweet Blvd, Yuba City

Thursday, 17th July 2014
Yuba City – Live Oak – Yuba City

- 9.00am Sunsweet prune processor plant tour, followed by a meeting with Gary Thiara, Chairman of the Board and Dane Lance, CEO. BBQ lunch will be provided by Sunsweet at approx. 11.30 or noon.

- Address - 901 N. Walton Avenue, Yuba City, CA 95993

- 3.00pm COE Machinery – meet with Dave Short - manufacturer of tree harvesters for a factory tour.

- Address - 3453 Riviera Road, Live Oak, CA 95953

- 6.30pm Dinner with California Prune Bargaining Association (CPBA) Greg Thompson – General Manager.

- Restaurant - Sutter Buttes Brewing, 421 Centre St, Yuba City, CA 95991

- Overnight Yuba City - Hampton Inn & Suites, 1375 Sunsweet Blvd, Yuba City

Friday, 18th July 2014
Yuba City – Red Bluff

- 8.00am Orchard Machinery Corporation (OMC) factory tour with Greg Kriss or Joe Martinez.

- Address: 2700 Colusa Highway, Yuba City, CA 95993

After OMC tour, travel approx. 2hrs north to Red Bluff and check into hotel.

- 2.30pm Lindauer River Ranch – Meet with Michael Vasey, Ranch Manager to have a farm and drier tour. Richard Buchner, UC Davis Cooperative Extension Officer will join the tour of the Lindauer Ranch. Michael has also organised a tour to irrigation canal/fish screens close to their farm.

- Address: 11790 Tyler Rd, Red Bluff, CA 96080.

- Free evening
- Overnight Red Bluff - Holiday Inn Express Hotel & Suites, 2810 Main Street, Red Bluff

Saturday, 19th July 2014
Red Bluff – Orland – San Francisco

- Travel 45mins south to Orland

- 8.00am - Erick Nielsen Enterprises Inc. – meet with Erick Nielsen a grower and harvest contractor on Orland. Erick also works closely with researchers on projects such as Improving Pruning Techniques. Breakfast will be provided.

- Address - 4453 County Road O, Orland, CA 95963

- Travel to San Francisco approx. 2.5hrs.
- Free Evening in San Francisco
- Overnight San Francisco - Hotel Fusion, 140 Ellis Street, San Francisco

Sunday, 20th July 2014
San Francisco

- Free day in San Francisco
- Check your flight times for your return flight to Sydney. Allow yourself 3hrs prior to check-in.

Tuesday, 22nd July 2014

Return to Griffith

Recommendations

For the Industry:

•That the Australian Prune Industry Association continues to evaluate new and old varieties and include rootstocks at the variety trial sites.

•That the Australian Prune Industry Association encourages the next generation of prune growers by providing industry funds for a young grower to visit California. This will encourage early development and a better understanding of other industries.

•That the Australian Prune Industry Association should continue to maintain direct contact with relevant US dried plum industry members so as to keep Australian growers fully informed about market trends and new technologies that may be adapted for use by Australian growers.

•That the Australian Prune Industry suggests that when developing new plantings of prunes new plant density be considered. A closer tree density of 5.5m x 4.3m (18ft x 14ft) would be recommended going forward. This will produce smaller trees and potentially larger fruit.

•That the Australian Prune Industry Association encourages growers to improve their drying tunnels by increasing air movement to reduce humidity. It is recommended that growers do not adopt the Californian wooden drying trays as this poses a health risk with splitters.

•That the Australian Prune Industry Association continues to better educate consumers about the health benefits of prunes, changing the focus from just digestive health benefits.

For future study tours:

• A study tours for growers and industry representatives should be organised on a regular basis (every 3 to 5 years) to keep existing and new growers up to date with the overseas industries.

• 2 or 3 meetings per day was an ideal format as this allowed for flexibility to meet with growers or marketers that were not included in the itinerary.

• 10 to 14 days is sufficient time to investigate an area. If a wider area was to be investigated (visiting different growing regions) then a few extra days would be needed for the extra travel.

• If time permits the study tour should take place over a 2 week period, with a 1 or 2 day break (over the weekend) with 3 or 4 days of work either side of the weekend.

• As the study tour was a small group hiring the mini bus was ideal as provided flexibility to alter our travel plans as necessary.

• A pre-tour meeting between ALL participants is necessary (where practical) so that the itinerary can be explained and travel tips can be shared.

• An evaluation form or report template should be provided to each participant prior to the trip. This

would allow participates to contribute their comments/findings at the end of the trip making the final report easy to compile.

Acknowledgements

Project funding was provided by Voluntary Contributions and Horticulture Australia Ltd.

Australian Prune Industry Association thanks the US dried plum industry contacts listed later in this report for their valuable assistance and cooperation which contributed to the success of this project.

Contact List

US Contacts:

1 UC Davis

Contact: Ted De Jong
UC Davis Campus Pomology Field HQ Building
Office phone (530) 902-6430

tmdejong@ucdavis.edu

2 Californian Dried Plum Board

Contact: Don Zea, CEO
3840 Rosin Court, Suite 170, CA 95834
Office phone (916) 565-6232 Phone. (530) 906-0503

dzea@cdpb.org

3 Ashlock Company

Contact: Tom Rettagliata

Tom@ashlockco.com

4 Taylor Brothers Farm

Contact: John Taylor
182 Wilkie Ave, Yuba City CA
P: (530) 671-1505
jtaylor@succeed.net

5 Valley View Packing

Contact: Jaswant Bains
833 Tudor Road, Yuba City, CA
P: (530) 671-4488

jbains@sacramentopacking.com

6 Sunsweet Growers Inc.

Contact: Suzie Montoya
901 N. Walton Avenue, Yuba City, CA

P: (530) 751-5208

smontoya@sunsweet.com

7 COE Machinery

Contact: Dave Short
3453 Riviera Road, Live Oak, CA

P: (530) 695-5121

Dave.Short@coeshakers.com

8 California Prune Bargaining Association (CPBA)

Contact: Greg Thompson
Yuba City
P: (530)-713-9909
gregpba@gmail.com

9 Orchard Machinery Corporation (OMC)

Contact: Greg Kriss
2700 Colusa Highway, Yuba City, CA
(530) 300-8245

gk@shakermaker.com

10 Lindauer River Ranch

Contact: Michael Vasey
11790 Tyler Rd, Red Bluff, CA

michael.vasey@yahoo.com

11 Erick Nielsen Enterprises Inc.

Contact: Heather Nielsen-Reed
4453 County Road O, Orland, CA
P: (530) 865 9409

donny723@gmail.com

Appendices

Australia representatives in Gridley CA, 18th July 2014.

Wooden drying trays not recommended for use in Australia. Gridley CA, 18th July.

Lindauer River Ranch, Red Bluff CA, 18th July. Higher tree density 5.5m x 4.3m and smaller tree management.