

Horticulture Innovation Australia

Final Report

Maintaining and expanding the technical development of the Australian Walnut Industry

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Australian Walnut Industry Association Inc

Project Number: WN12000

WN12000

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ISBN 0 7341 3821 0

Published and distributed by:
Horticulture Innovation Australia Limited
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Sydney NSW 2000
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Summary

The aim of the project was to continue the development of the Australian Walnut Industry to achieve increased profitability through a multi-faceted approach to industry capacity building. The strategy was to undertake the employment of a part-time Technical Communications Officer to extend technical information to industry to assist growers in increasing yields and improving nut quality.

The project also assisted the industry and growers in the main growing regions in New South Wales, Victoria, Tasmania, South Australia and Western Australia to improve their productivity, sustainability and viability.

The first twelve months of this position (2013) resulted in regular communication of newsletters and e-bulletins to members, visits to growers in Vic and NSW, a field trip, winter symposium and visit by AWIA members to China to the International Walnut Symposium. Publication of a Blight facts sheet and a booklet on the China walnut visit was also completed.

It became apparent in 2013, which was an exceptional year for high production volumes, that understanding of the export/import market was essential to assist growers and producers to sell their produce.

Industry statistics and data to understand the Australian walnut industry and how it matched up with the international production and markets were also essential together with an Industry biosecurity plan.

The project scope was re-defined in January 2014 to provide a narrower but in depth focus with specific achievable outcomes.

FACILITATION: Facilitate interactions and networks between walnut growers and producers by interaction with the AWIA website member's forums.

TECHNOLOGY ADOPTION: Develop specific technologies, management practices or decision support systems; implement local activities.

TRAINING: Design specific training programs and workshops and deliver to targeted groups to increase understanding or skills in defined areas.

INFORMATION: Provide a broad range of information from a central location, (the AWIA website), such as up to date technologies, market information, world production trends.

A new Technical Communications Officer was employed in July 2014 and has undertaken the role through to the conclusion of the project on the 30th November 2015.

Some of the major outputs during this period have included:-

- a) Regular e-newsletters prepared and distributed.
- b) Review of the Pest and Disease list within the Nut Industry Biosecurity plan and the near completion of the Walnut On-farm Biosecurity Manual. (To be finalised once the Nut Industry Biosecurity Plan is released.)
- c) Finalisation of the Walnut Industry Communications and Engagement Strategy.
- d) Collection and collation of grower and industry issues that were then utilised as part of the AWIA Strategic Planning review.
- e) Development of the Australian Walnut Industry Strategic Plan – 2015 to 2020.
- f) Twice annual Symposiums/Farm Walks that have been well attended.

- g) Regular grower evaluation surveys at the completion of each event and the collation of the information for consideration in planning future events.
- h) Re-establishment of the Walnut Industry R&D Committee.
- i) Regular participation at and input into relevant national meetings/issues including biosecurity, trade and chemicals.
- J) Continual updating of the AWIA website and the use of this is a major communication tool for technology transfer.

This Report outlines in more detail the specific outputs and outcomes of the project.

Keywords

Walnuts, technical development, communications, farm walks, symposium, statistics, production, blight.

Introduction

The Australian Walnut Industry has been at the stage that there needed to be the resources to drive the research work and communicate to and with growers the benefits of changing production practices, in order to help the industry develop further. The need for the Walnut industry to build internal capacity for research, development and extension has become more important as the Government research services declined.

The previous Industry Development Officer enabled the Walnut industry to develop some momentum but with the demise of that position through the removal of State Government Department funds the industry found it difficult to undertake the required technology transfer and industry development. The position of Technical Communications Officer that commenced in 2012 has been essential to drive the Australian Walnut Industry forward.

The work undertaken through this project has built on the information gathered as part of the IDNA project conducted in 2011/12. Through project WN10000 AWIA undertook an Industry Development Needs Analysis and the major recommendation was ***“That the Australian Walnut Industry Association utilise the IDNA reports to implement the appropriate programs and projects to achieve the objectives of the Association.”***

At the IDNA Workshop held on the 14th August 2011 at the Victorian Department of Primary Industries facilities at Tatura the following strategies were discussed and proposed as the priorities for Walnut Research and Development.

- Define Quality and how to achieve it
- Blight research to manage the disease
 - Orchard hygiene
 - Virtual' Orchard – calculators
 - Physiology of Blight/tree – What drives the disease (2 year strategy)
 - 'Tool kit' for the future
 - Diagnostic Kit
 - Grower Fact Sheet
 - Literature Search on Blight
 - Weather based model – practical tool – trial in other regions of Australia (could be done now)
 - Knockdown inoculums
 - Retention of copper in rain events
 - Orchard/canopy styles to 'manage' blight
 - Flowering period/length
 - Model bud stages
- On-farm Biosecurity specific to the crop – orchard hygiene, signage/control
- Management of other pests and diseases.
- Post Harvest handling
- Raise profile of AWIA to higher levels – arrangements between Webster Limited (Walnuts Australia) and AWIA
- Training of members on chemicals and permits for Blight Control
- Capacity Building – training to come into industry

- Education/extension through to the consumer
- Water Use/managing the resources/training & education
- Marketing and Branding

The IDNA Project Management team agreed that many of the topics discussed were research and development and they would be dealt with through specific research activities.

The aim of this specific project was to continue the development of the Australian Walnut Industry to achieve increased profitability by ensuring the best technical information was available for all growers to access and utilise.

The strategy was to employ a Technical Communications Officer to investigate ways the industry could increase yields and improve nut quality.

As part of a Walnut IDNA process it was established as a high priority to employ a Technical Communications Officer to assist the industry and growers in the many regions of Australia in improving their productivity, sustainability and viability. Since the previous Industry Development Officer position was withdrawn the Walnut industry had struggled to adequately connect with the growers and implement aspects of the previous strategic plan.

While some research and development work was being undertaken by the industry technology transfer and extension work had been lacking.

This proposed position has allowed the industry to build capacity and undertake the following activities:-

FACILITATION: Organise Association and groups networks; Seek participants particularly in regional areas to increase their own capacity in seeking their own education and training needs.

TECHNOLOGY ADOPTION: Communicate specific technologies, management practices or decision support systems; implement local activities.

TRAINING: Design specific training programs and workshops and deliver to targeted groups to increase understanding or skills in defined areas.

INFORMATION: Provide a broad range of information from a central location, such as websites, workshops and newsletters

CONSULTANT: Work as a mentor or consultant with individuals and/or groups to improve their managerial, technology, social and environmental situation.

Methodology

The Australian Walnut Industry Association (AWIA) wished to develop the industry using multi-faceted strategic methods. AWIA identified continuing industry development across a wide range of areas such as identified in the Industry Strategic Plan. The Industry identified statistics, post harvest processing and storage, market expansion both domestic and export, specific research and development to support production growth, communications and technology transfer and pest and disease management as a few of those areas.

This project involved the employment (by AWIA) of a part-time Technical Communications Officer to continue and expand the industry development needs and implement the program for the Australian Walnut Industry for three years from December 2012. The position was advertised openly and transparently. The initial appointment was made by a selection panel including the HAL Portfolio Manager - Industry Development.

The Technical Communications Officer was overseen by a Steering Committee (the R&D Project team) which assessed the project on a six monthly basis and made minor adjustments to the project activities as was needed. The methodologies used on some of the components of the project are detailed below but they had the ability to be modified at a particular time to satisfy the project objectives.

The guiding principles for the project were as follows:-

STATISTICS:

Gather data collection on tree numbers, varieties and production through interaction with growers to build a picture of the industry.

Utilise grower information for the management of issues including chemical application management, biosecurity and production matters.

QUALITY AND MATURITY STANDARDS:

Assist with training growers in quality parameters utilising the methodology developed as part of project WN11001. Assist with the development of online material for use in an industry 'toolkit' that can be used by all Walnut growers. This was an activity to be implemented in the second and third year of the project.

Regularly update the information and the components within the 'toolkit'.

PEST AND DISEASE MANAGEMENT

Prepare and maintain information bulletins on Blight Management.

Prepare and maintain relevant pest and disease information leaflets as part of the broad industry 'toolkit'.

COMMUNICATIONS AND TECHNOLOGY TRANSFER:

Maintain regular communications with ALL Walnut growers through e-newsletters, website and technical manuals

Undertake two technical workshops each year to inform growers of current and developing technology.

Maintain links with Australian and International researchers to ensure the most current scientific information was available to Walnut growers.

NETWORKING:

Attend and participate in national and international Workshops and Symposiums.

Undertake a visit to each of the growing regions (across the life of the project) to visit growers and assist with regional programs.

PROCESSING AND VALUE ADDING:

Gather relevant information on processing and value adding from around Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products.

CHEMICALS:

Work with the AWIA chemical sub-committee to assess current and future chemical requirements.

The Walnut Industry Technical Communications Officer was to have a very 'hands on' approach to collecting and collating information and delivering the information in a very user friendly manner to ALL Australian Walnut growers and processors.

The following are the specific activities required of this position:-

- Undertake Walnut Industry Development as per the methodology.
- Prepare communication for industry – newsletters (quarterly), e-news (monthly), technical bulletins, website material, articles on a regular basis to add to the Walnut Industry 'toolkit'.
- Organise two grower workshops per year.
- Ensure communication with walnut growers in growing regions around Australia by meeting or video conferencing.
- Investigate and recommend potential R&D projects/programs to AWIA and HAL.
- Manage R&D projects/programs for which the AWIA is the service provider.
- Act as the secretariat for the Walnut R&D Committee

Ongoing monitoring and evaluation was to be undertaken particularly at the conclusion of each specific activity to ensure that the needs and requirements of both AWIA and the individual growers were achieved.

Variation for 2014 and 2015

The first thirteen months of this project (1/12/2012 to end of 2013) resulted in

- regular communication of newsletters and e-bulletins to members,
- visits to growers in Vic and NSW,
- a field trip, winter symposium,
- a visit by AWIA members to China to the International Walnut Symposium,
- Blight fact sheets, and
- A booklet on the China walnut visit.

However, a number of outputs and outcomes were not achieved despite extra hours being committed to the project.

There was a need for greater project focus so that activities, outputs and outcomes were realistically achievable.

For 2014 and 2015 the project had a narrower, but in depth focus with achievable outcomes. It has become apparent in the last year, which was an exceptional year for high production volumes, that understanding of the export/import market was essential to assist growers and producers to sell their produce.

Industry statistics and data to understand the Australian walnut industry and how it compared with international production and markets were also essential, together with an industry biosecurity plan.

With the resignation of the Technical Communications Officer (TCO) in December 2013, AWIA worked with HAL to appoint a new Technical Communications Officer. The project (and TCO) were overseen by

the Walnut R&D Committee, the AWIA President and the HAL Portfolio Manager – Industry Development.

Detailed work plans were produced with KPIs. The work plan prioritised activities and reflected the project plan. Activities not included in the work plan were not to be undertaken without approval by the Walnut R&D Committee, AWIA President and HAL.

Feedback was to be sought from industry on communications and workshops to enable continuous improvement and project monitoring.

The Technical Communications Officer was to be engaged as a sub-contractor for 7.5 hours per week. As the position has been vacant for the first half of 2014 additional hours will be worked in the second half of 2014.

Association business, agri-political and promotional activities were not to be undertaken by the Technical Communication Officer, as per HAL Policy.

The capacity building strategies for the remainder of the project were as follows:-

COMMUNICATIONS AND TECHNOLOGY TRANSFER

- Maintain regular communications with ALL walnut growers through the use of the AWIA website and interactive forums, e-newsletters, website and technical bulletins. Explore the potential for video conferencing between grower regions.
- Development of a communications plan based on industry consultation – this would be used to prioritise communication channels and would be used to establish key areas of interest and topics for technical communications and workshops.
- Use the AWIA website as a tool to communicate with growers and producers via video demonstrations and webinars.
- Undertake two technical workshops per year to inform growers of current and developing technology.
- Access international journals and industry websites to allow up-to-date trends and news to be conveyed to Australian growers and producers.
- Maximise the use of electronic technologies and social networking to gather and then disseminate information wherever possible.

STATISTICS

- Gather data on tree numbers, varieties and production through survey of growers and processors to build a picture of the industry.
- Use statistical information for development of a biosecurity plan for the walnut industry (to be undertaken by the AWIA committee).

EXPORT, PROCESSING AND VALUE ADDING

- Establish a database and direct contact details of export markets and produce a 'how to' sheet to assist growers interested in export (this will not include promotional information).
- Gather relevant information on processing and value adding from Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products.

Outputs

Project WN12000 commenced in December 2012 and has been undertaken through to the 30th November 2015.

Over the life of the project there has been

- Two appointments – John (Mac) McArthur (December 2012 to December 2013) and Trevor Ranford (August 2014 to November 2015)
- A revision of the project undertaken and approved on the 13th January 2014.
- Advertising of the new Job position through the Nut Industry and Horticultural Industry bodies on the 4th March 2014.
- Re-advertise the position to broaden the pool of applications on 15th May with applications closing on 29th May 2014 (as advised by HAL).
- A situation whereby the TCO position was vacant for the first five months of 2014.

A copy of the Tasks and Key Performance indicators for the Technical Communications Officer Project for the life of the project is tabled to this report as Appendix A.

Project WN12000 was effectively undertaken in the following two phases:-

a) PHASE 1: From the 1st December 2012 to 31st December 2013.

b) PHASE 1: From the 1st July 2014 to 30th November 2015.

The outputs are detailed across the two phases of the project.

PHASE 1: 1st December 2012 to 31st December 2013

COMMUNICATION/EXTENSION ACTIVITIES

- Newsletters were published in December 2012, January, March, May, June, September and December 2013 and circulated to all 100 members.
- Posted hard copies to 40 people that had not opened their issue 12 as emails.
- Bulletin promoting the China International Walnut Symposium was prepared and distributed in the March edition of the Australian Nutgrower and directly to members March 2013.
- Successfully lead group of 16 members to International Walnut Symposium and industry tour in China July 2013.
- Visited the following orchards in Vic/NSW: Colin Jack (Strathfieldsaye); Bryan Goble (Koondrook); Doug and Adam Trigg (Pyramid Hill); Lachie McKenzie (Koraleigh) and the QWP facility (Koraleigh). Held discussions with Colin Barry (Harston) at his walnut stall at the Echuca market.
- No further growers and orchards were visited since June 2013 due to budget constraints.

- Established connection with New Zealand nut grower association, who then accompanied AWIA members on China Visit.
- Blight fact sheet published and circulated to all members.

A copy of the Blight Fact Sheet is attached to this report as Appendix B.

- CD of data from Quality and maturity standards literature review to be printed and sent to all 2012 and 2013 Voluntary levy payers (December 2013).
- Grower survey drafted and awaiting committee approval.

PHASE 2: 1st July 2014 to 30th November 2015

- a) Development of a communications plan based on industry consultation – this will prioritise communication channels and will be used to establish key areas of interest and topics for technical communications and workshops.**

- (1) A grower survey has been prepared and distributed to all members seeking input into
- issues of relevance to individual walnut growers
 - issues of concern/relevance in relation to the future directions of the Australian Walnut Industry.

A copy of the results from the grower survey is attached to this report as Appendix C.

The information gathered was collated and tabled at the AWIA strategic planning session held on the 22nd June 2015.

- (2) A questionnaire, to determine what forms of member communication are preferred by growers, was tabled at the November 2015 meeting with growers and the responses have been collated and are being used to assist in the final stages of developing a broad Walnut Communication Plan.

The results were detailed in the 'AUSTRALIAN WALNUT INDUSTRY COMMUNICATION AND EXTENSION STRATEGY - 2015 to 2025'.

A copy of the 'AUSTRALIAN WALNUT INDUSTRY COMMUNICATION AND EXTENSION STRATEGY - 2015 to 2025' is attached to this report as Appendix D.

- (3) AWIA held a strategic planning session on the 22nd June 2015 in Melbourne. The Technical Communications Officer facilitated the session.

Utilising the information a draft Walnut strategic plan was prepared including an R&D strategic investment plan. These documents were circulated to the walnut growers for their comment/input.

The final DRAFT Walnut Strategic Plan was tabled at the August 2015 Symposium/AGM for adoption.

The AWIA Executive committee and the Walnut R&D Committee are utilising these documents to prepare annual investment and work plans.

A copy of the 'STRATEGIC PLAN – AUSTRALIAN WALNUT INDUSTRY ASSOCIATION (AWIA) -2015 – 2020' is attached to this report as Appendix E.

- (4) The Technical Communications Officer attended and participated in the growers meeting held on Sunday 22nd November 2015 in Mildura.

b) Maintain regular communications with ALL walnut growers through use of the AWIA website and interactive forums, e-newsletters, website and technical bulletins.

Regular communications have been maintained across the period of this milestone using the web site, e-newsletters and general e-mail bulletins.

The e-newsletters 'The Kernel' was prepared and distributed in September, November and December 2014 and March, April, May, August and December 2015.

A copy of the December 2015 newsletter is attached to this report as Appendix F

Through a meeting between Carol Kunert and Trevor Ranford in February 2015 modifications were made to the AWIA website with additional pages developed and new material added.

- The presentations from the January 2015 Symposium have been loaded onto the website and the growers informed by an e-mail bulletin.
- Relevant technical newsletters and articles have been e-mailed to walnut growers at various times across the period.
- The presentations from the January, August and November 2015 Symposium/Farm Walk have been loaded onto the website and the growers informed by an e-mail bulletin.

c) Use the AWIA website to communicate with growers and producers via video demonstrations, webinars and interactive forums. Website will need re-modelling.

- (1) Carol Kunert and the Technical Communications Officer have been working on the website and worked their way through the processes of updating it and adding new material.
- (2) The Technical Communications Officer e-mail address - tco@walnut.net.au - was made operational and the Technical Communications Officer has utilised this to communicate with the industry.
- (3) The following components have been undertaken or are in the planning:-
- AWIA website has been expanded by the addition of further storage capabilities which will have allowed the storage of larger reports and videos.
 - AWIA has and continues to look at the establishment of YouTube capability to store industry videos.

d) Explore the potential for video conferencing between grower regions.

While the concept of video conferencing between grower regions has been investigated the utilisation of this technology has some challenges including access to appropriate facilities in relevant grower regions and this has resulted in the technology not yet being utilised.

The August 2014 Seminar and the January 2015 Symposium and Field walk have been filmed and the videos are available to the membership.

e) Undertake two industry field days or seminars per year to inform growers of current and developing technology.

(1) August 2014 Winter Seminar

As part of the role the Technical Communications Officer participated in the Australian Walnut Industry Association August 2014 Winter Seminar and was able to assist the Committee in the planning of this event. 43 People attended.

Activities included:-

- a) Finalisation of the program,
- b) Preparation and distribution of a media release which achieved some media coverage leading up to the event,
- c) Acting as the MC/facilitator for the event on Saturday 23rd August,
- d) Assisting in the setup and pack up on the day,
- e) Assisting with arranging the videoing of the event,
- f) Preparation of recoding the event video onto a DVD which has/is being sent to those who attended,
- g) The DVD is being offered to members who could not attend - @\$20 – and to non-members @ \$60.
- h) The power point presentations have been loaded onto the website.

(2) January 2015 Symposium and Field Day

The Technical Communications Officer worked with Michael Lang and Sally Smith to organise the January 2015 Symposium and Farm Walk held in Swansea, Tasmania on the 16th to 18th January 2015.

The symposium program included the following presentations:-

- ***“Review of AWIA Quality Parameters program”*** by Dr Kathy Evans (TIA)
- ***“Description and management of premature fruit drop in walnuts”*** (outline of current Walnuts Australia HAL project) by Dr Mick Lang (Walnuts Australia)
- Presentation by TIA on current R&D
- ***“Developing harvest strategies to maximise walnut quality”*** (findings from Walnuts Australia’s HAL project by Dr Mick Lang
- ***“Walnut storage and innovation”*** by Peter Targett (2014 Honours walnut quality project)

The Field Walk included the following visits and topics:-

(i) Saturday Orchard visit – Walnuts Australia Swansea orchard

‘Where did we get it wrong and what have we done right’

Discussion and demonstrations on:

- Irrigation scheduling –‘soil moisture probes’ and ‘pressure bomb’ measurement of stem water potential
- Frost management– ‘frost fans’ and ‘cultural management’ techniques

- Pest and diseases – chemical and cultural methods to manage Phytophthora, walnut blight, frosted scale...
 - Light interception –mechanical hedging of mature trees
 - Cultivar selection –Hungarian, French and Californian cultivars
 - Vegetative and fruit growth - specific plot production, with reference to crop yield and nut quality
- (ii) Sunday Farm Walk
- Visit Kates Berry Farm including a presentation by Catherine (Kate) Bradley
 - Visit Milton Vineyard including a presentation by Michael and Kerry Dunbabin
 - Open Forum on Walnut issues.

Twenty five people participated in the weekend with growers from Western Australia, South Australia, Victoria, New South Wales and Tasmania.

The following associated activities were undertaken:

- A media release was prepared prior to the event resulting in some very good local (Tasmanian) and national coverage.

A copy of the Media Release is attached to this report as Appendix G.

- An evaluation process was conducted

A copy of the Evaluation Survey Results are attached to this report as Appendix H.

- An article was prepared and printed in the March 2015 edition of the Australian Nutgrower.

A copy of the Australian Nutgrower article is attached to this report as Appendix I.

(3) August 2015 Symposium and Annual General Meeting

A Symposium and Annual General Meeting was prepared and conducted on the 22nd August 2015 at Shepparton, Victoria. The symposium program included the following presentations:-

- **"Tapping the pool of knowledge: An informal Q and A roundtable where new growers can ask questions to those with older orchards"**. Facilitated by Carol Kunert, King Valley Walnuts.
- **"Managing Bird Problems"**, CSIRO Research presented by Dr Ashley Tews, Senior Researcher,
- **"Using Drape Netting"** – Hilary Jankelson, Boonderoo Walnuts
- **"Compost use in the Orchard"**. Peter Wadewitz - PEATS SOIL AND GARDEN PRODUCTS/COMPOST AUSTRALIA
- **Industry Overview**
 - a) Strategic Plan
 - b) Industry Statistics
- **AGM**
- **2014/15 Season overview:** Blight, Production, Export

- **“Export and FTA – importance to the Walnut Industry”** Presentation by Chaseley Ross, ANIC.
- **“Nutritional requirements for Walnuts”**. Representative of Haifa.
- **“What’s new in orchard Irrigation Systems?”** Representative of Netafim
- **“Phytophthora – an overview of the literature”**. Trevor Ranford, AWIA, Technical Officer.
- **“Walnuts – the future”**. Grower Panel

Forty people participated in the day with growers from Western Australia, South Australia, Victoria, New South Wales and Tasmania.

The following associated activities were undertaken:

- An evaluation process was conducted and the result collated.

A copy of the Evaluation Survey Results are attached to this report as Appendix J.

(4) November 2015 Symposium and Farm Walk.

A Symposium and Farm Walk was prepared and conducted on the 21st November 2015 at Mildura, Victoria. The symposium program included the following presentations:-

- ***“Report on Temperate Nut Project”***. Presented by Jacquelyn Simpson NSW DPI
- ***“Labour Hire and the National Harvest Trail”***.
- ***“Nut Centre of Excellence – opportunities for Walnuts”***. Presented by Ross Skinner, CEO, Almond Board of Australia.
- ***“Horticulture Innovation – the new RDC”***. Presented by Corrine Jasper, Industry Relations, HIAL
- ***“The Practical way to get wet: - Canopy Spraying”***. Presented by Geoff Furness, Consultant, Spray Application Technology

The farm walk program included the following:-

- Walnut Orchard Visit No 1
Including:
 - Demonstration of orchard soil moisture monitoring equipment, capacitance probes and loggers from both MEA and Aquacheck.
 - Discussions on the equipment, demonstration of the web applications and provision of information sheets etc.
- Walnut Orchard Visit No 2
Including:-
 - Explanation of walnut rootstocks and their use in Mallee soils (past, current and future)
 - Early look at a current 2015/16 rootstock comparison between Paradox and a native American Juglans species which is not NCB (*J. hindsii*)
 - Demonstration of the walnut budwood nursery – including heritage varieties
 - Field discussion on new walnut planting layouts with a view to enhancing pollination in common varieties such as Chandler and Tulare.

Thirty eight people participated in the weekend with growers from Western Australia, South Australia, Victoria, New South Wales and Tasmania.

The following associated activities were undertaken:

- A media release was prepared prior to the event resulting in some very good local (Victorian) and national coverage.

A copy of the Media Release is attached to this report as Appendix K.

- An evaluation process was conducted and the result collated.

A copy of the Evaluation Survey Results is attached to this report as Appendix L.

f) Access international journals and industry websites to allow up to date worldwide trends and news to be conveyed to Australian growers and producers.

The TCO continued to access a wide range of material from around Australia and internationally and this has been used in either the e-newsletters or in the preparation of future technical bulletins.

In addition the relevant technical papers will be loaded onto the industry website once the new Orchard Production Puzzle portal page is completed and established on the website.

A copy of the Walnut Orchard Production Puzzle is attached to this report as Appendix M.

g) Undertake annual data collection on tree numbers, varieties and production through survey of growers and processors to build a picture of the industry.

The Technical Communications Officer took over the management of the Australian Walnut Industry Association Grower Survey in August 2014.

Because the response from the members to the 2014 survey was very poor the original grower survey was modified and the new 2015 survey form was personally e-mailed to each Australian Walnut Industry Association members. Both a Privacy and Confidentiality Policy were developed as part of the process and were added to the Survey.

A copy of the 2015 Grower Production Survey is attached to this report as Appendix N.

Responses were collated and an initial report was presented at the August 2015 Symposium.

All the data collected was statistically analysed and a full report prepared and presented to the AWIA Executive committee at their committee meeting on the 21st September 2015.

The full report has been formatted for distribution to the industry and other relevant organisations. The report will be placed on the AWIA website.

This document is being used as the new industry baseline and will be up dated on an annual basis.

A copy of the 'Statistical analysis of 2015 Industry Survey' is attached to this report as Appendix O.

h) Explore mapping of all Australian walnut properties.

Information previously obtained through the work of a Victorian Department of Primary Industries representative has been made available to AWIA and is currently being reviewed and the gaps filled where possible.

In addition the Technical Communications Officer has recently undertaken

- (1) A visit to the Walnuts Australia nursery, orchards and processing facility on the 21st October 2015 as a part of reviewing walnut properties.
- (2) Visited grower properties in Mildura as part of the Farm Walk in November 2015.

Access was gained to a number of new growers for inclusion in the Walnut grower listing.

i) Use statistical information for development of a biosecurity plan for the walnut industry (to be undertaken by the AWIA committee).

- (1) The Technical Communications Officer participated in a number of Plant Health Australia meetings on the 25th and 26th November 2014 including:-
 - a) Joint Plant Health Australia and Animal Health Australia forum,
 - b) PHA Industry Member Forum
 - c) EPPRD Meeting
 - d) PHA Annual General Meeting
 - e) Torres Island Fruit Fly Forum.

His presence and participation was for and on behalf of the four industries – Walnuts, Pistachios, Chestnuts and Hazelnuts.

- (2) The Technical Communications Officer had a further meeting with PHA Management on Thursday 4th December 2014 to have discussions about the On-farm Biosecurity Manual and the Emergency Plant Pest Levy process and use.
- (3) The Technical Communications Officer participation in national biosecurity programs on the 24th and 25th November 2015 including:
 - a) Meeting with the Department of Agriculture on the 24th November to discuss a range of issues including those relevant to the walnut industry
 - b) Attendance at the PHA/AHA joint industry forum held in Canberra on the 24th November 2015.
 - c) Attendance and acted as the AWIA proxy to the range of PHA meetings held in Canberra on the 25th November 2015.
- (4) AWIA has undertaken a range of biosecurity projects/programs which are being brought together as part of a broad biosecurity program. The projects/programs include:-
 - Review of the Walnut Owner Reimbursement Costings. (Ongoing)
 - Participation in an Australian Nut Industry Council/Plant Health Australia project to review the pest and disease lists in the Nut Industry Biosecurity Plan and then work to the release of the update Nut Industry Biosecurity Plan. The components of this activity included:-

- Review of the pest and disease list by members of the AWIA Executive committee, and
 - Attendance and participation by Carol Kunert and the Technical Communications Officer at a full day review session held on the 25th August 2015 in Sydney, and
 - Sign-off on the updated Nut Industry Biosecurity Plan.
- Access to the Plant Health Australia/Animal Health Australia Farm Biosecurity Action Planner. A copy of the planner was sent to each of the AWIA members.
 - Finalisation of the Walnut On-farm Biosecurity Manual. AWIA is still negotiating with PHA in relation to formatting and copyright issues.
 - Participation in national biosecurity programs including the Department of Agriculture Biosecurity roundtable and the review of the National Biosecurity R, D and E strategic plan.
 - Gained access to the Plant Health Australia/Animal Health Australia Farm Biosecurity videos. Links to the videos have been placed on the AWIA website.
 - Undertook a review of the Walnut On-farm Biosecurity Manual to include the new pest and disease list.
Once the Nut Industry Biosecurity Plan is finalised AWIA will finalise and release the Walnut On-farm Biosecurity Manual.
- (5) Through the Technical Communications Officer AWIA participated in national biosecurity programs including the Department of Agriculture Biosecurity roundtable and the review of the National Biosecurity R, D and E strategic plan.
- As part of this process AWIA submitted the following as biosecurity issues of concern:-
- a) National listing of ALL Australian Walnut growers.
 - b) National surveillance program including inputs from the growers assessing their orchards directly or through consultants.
 - c) Lack of chemicals available to smaller/emerging industries.
 - d) Lack of control of external contractors entering and working on properties eg., miners, electricity workers.
 - e) Management of Blight in Australia Walnut Orchards
 - f) Vertebrates – damage to trees and nuts as well as moving of other pests around orchards
 - g) Walnut Husk Fly (Exotic pests)
- (6) Through the Technical Communications Officer AWIA participated in the Department of Agriculture/Rural Industries Research and Development Corporation AgVet Chemical Forums.

Chemical availability has been considered a major production issues for the Australian Walnut Industry. Ensuring access to current and future chemicals through either minor use or full registration has been a major strategic priority. AWIA needs to continue to ensure that the needs of the Walnut industry are put in front of the appropriate regulators.

As a result the Technical Communications Officer developed an involvement with the AgVet Chemical Forum with the objective of ensuring the walnut industry chemical needs were a part of the first round of applications. Pest/disease and chemical priority lists were developed and submitted to the process.

The Technical Communications Officer participated in a further AgVet Chemical Forum held in Canberra on the 9th and 10th June 2015 where the prioritising of the walnut industry pests/diseases and chemicals was undertaken.

- (7) The Technical Communications Officer continued to monitor the Phytophthora disease in Walnuts with the aim of
 - Possibly collaborating in a multi-industry project.
 - Reviewing the Phytophthora literature search project undertaken by the Chestnut Industry to see what information might be relevant to Walnuts.
 - Preparing fact sheets on Phytophthora and Phytophthora management.
 - (8) Through the Technical Communications Officer AWIA participated in a full day training session, organised by the Victorian Horticulture Industry Network, on the roles and responsibilities of an biosecurity Industry Liaison Officer held in Melbourne on the 2nd July 2015.
 - (9) Through the Technical Communications Officer AWIA participated in a teleconference, organised by the Victorian Department of Agriculture, in relation to pest and disease surveillance programs and industry requirements that need to be implement by the Victorian Department. This teleconference was held on 29th October 2015.
- j) Develop list of future buyers and importers, and future AWIA exporters and their requirements.**
- (1) AWIA has and continues to gathering a list of enquiries for Australian Walnuts. This information has been distributed to growers through direct e-mail blasts, e-newsletters and then placed on the website.
 - (2) AWIA continues to gather a list of enquiries for Australian Walnuts. A list of farmers markets have been prepared, formatted and added to the AWIA website. The list will continue to be updated on the receipt of input from the growers.
- k) Investigate options for export for single and cooperative growers and processors.**
- AWIA has continued to gather information on funding opportunities to assist small to medium growers develop their export opportunities but to this stage no applications have been made.
- l) Establish a database and direct contact details of export markets and produce a 'how to' sheet to assist growers interested in export (this will not include promotional information)**
- Relevant information has being gathered on 'how to' export and has been added to the AWIA website.
- m) Maximise the use of electronic technologies and social networking to gather and then disseminate information wherever possible.**

- (1) AWIA promoted the Nuts for Life workshops on social media and food labelling to the growers. A number of growers attended these sessions which were held in a number of cities/regions across Australia.
- (2) A new AWIA Facebook page was established in November 2015 and is being managed by members of the AWIA Executive Committee.

n) Gather relevant information on processing and value adding from around Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products.

An ongoing process with relevant information being utilised in the e-newsletters, placed on the website and/or distributed to growers via e-mail.

o) Manage R&D projects/programs for which AWIA is the service provider

- (1) The Technical Communications Officer worked regularly with the Chair of the AWIA R&D committee, Colin Jack/Michael Lang to consider new opportunities in relation to Walnut R&D. As part of this process the Technical Communications Officer held discussions with Walnuts Australia in relation to their R&D projects and their future needs.
- (2) Part of the strategic planning process undertaken in June 2015 included details of future R&D requirements for the Australian Walnut Industry.
- (3) The Technical Communications Officer held discussions with representatives of the Department of Education and Training and AWIA continues to consider an application for training funds from the Industry Skills Fund to be used to train walnut growers in aspects of the new industry quality parameters.
- (4) AWIA conducted a review of the quality parameters program and manual on 15th June 2015 and update some components of this.

Version 2 of the document has been proceeding to final collation, formatting and reprinting.

- (5) After the August 2015 Annual General Meeting a new Walnut R&D Committee was established.
An initial meeting (via teleconference) was held on the 21st October 2015. At that meeting Dr Michael Lang was elected as the chairman.
The R&D Committee undertook to review the new Walnut Strategic Plan and develop a R&D Investment Plan and strategy.

p) Act as the secretariat for the Walnut R&D Committee

The TCO participated in the R&D Committee meeting held on the 21st October and prepared the agenda, relevant discussion papers. The TCO prepared and distributed the minutes after the meeting.

A copy of the R&D Committee Minutes of the meeting held on the 22nd October are attached to this report as Appendix P

As part of gathering relevant information to feed into the Walnut R&D strategy the TCO has

- (1) Held discussions with the Bayer Product Development Manager about possible new chemicals.
- (2) Attended a Victorian Horticulture Industry Network visit to the NSW facilities at Gosford and discussed relevant R&D opportunities and food safety programs.
- (3) Attended an Agribusiness Forum in Adelaide and had input into the future needs of the Walnut industry.
- (4) Attended a technical symposium at which Dr Patrick Brown, from the University of California, gave a presentation on walnut nutrition.
Dr Brown gave presentations in SA (Renmark), Sunraysia and Griffith (NSW) to which walnut growers were invited to attend.
The TCO endeavoured to access Dr Brown to attend the AWIA Symposium on the 22nd August but unfortunately his itinerary did not allow for his attendance.

q) Maintain communication with the Industry Development Manager at HIA in relation to time frames for new submission or industry improvement opportunities.

- (1) The Technical Communications Officer assisted AWIA in preparing
 - 1) an individual submission, and
 - 2) a joint submission with Chestnuts, Hazelnuts and Pistachiosto the HIA Consultation Paper: "Determining the Strategic Investment Priorities for the Australian Horticulture Industry".
- (2) The Technical Communications Officer assisted AWIA with
 - 1) input into a proposal to establish a Walnut Collective Industry Fund, and
 - 2) input into issues of concern as part of the HIAL transition process.
- (3) The Technical Communications Officer communicated with the new HIAL Walnut Industry Relationship Manager, Corrine Jasper and invited her to attend and present a paper at the November 2015 AWIA Symposium/Farm Walk.

r) Maintain communication with the Project Team and the AWIA Executive Committee in relation to time frames and project activities.

The TCO held meetings with and reported to both the project team and the AWIA Executive Committee on

- (1) 1st June 2015 (teleconference)
- (2) 22nd June 2015 (face-to-face meeting in Melbourne)
- (3) 21st September 2015 (face-to-face meeting in Melbourne)

- (4) 22nd November 2015 (face-to-face meeting in Mildura)

Written reports and/or relevant papers were presented at all meetings.

A copy of the most recent Technical Communications Officer Report is attached as Appendix Q.

s) Agriculture Competitiveness White Paper.

Through the Technical Communications Officer AWIA had technical input into the Agriculture Competitiveness White Paper to ensure that emerging industries like the Australian Walnut Industry progress.

It was essential that AWIA had input into national issues that may affect the ability of the industry to expand and develop to satisfy current and future domestic and international markets.

As part of the process the Technical Communications Officer attended a Horticulture Meeting organised by the Prime Minister and Cabinet and had input into the Agriculture Competitiveness process and the draft Green Paper. This meeting was held in Melbourne on the 27th November 2014.

Subsequent to that the Technical Communications Officer assisted AWIA in preparing and submitting a submission on the Green Paper on behalf of Walnuts, Pistachios, Chestnuts and Hazelnuts.

t) HAL IDO Workshop/International Horticulture Congress.

While not attending specifically as a representative of AWIA the Technical Communications Officer was in a position to at least offer a presence for Walnuts at a number of the events undertaken around the International Horticultural Congress held in Brisbane in August 2014.

- (1) The Technical Communications Officer attended and participated in the HAL Industry Development Forum/Workshop held on Saturday 16th and Sunday 17th August 2014. The forum acted as a training session for industry and agency people involved in industry development.
- (2) The Technical Communications Officer also attended the Nut Sessions of the International Horticulture Congress held on the 21st and 22nd August 2014 and had access to all the relevant papers and abstracts relevant to Walnuts.
- (3) While at the Congress the Technical Communications Officer participated, along with Michael Lang, in a meeting with other nut industries about Phytophthora with the aim of possibly collaborating in a multi-industry project.

Outcomes

While the project has had some challenges with changes in personal mid project and a variation to the project the desired outcomes of the project have been achieved.

a) Undertake Walnut Industry Development as per the methodology

The original project or Phase 1 of the project the methodology included:-

- STATISTICS:
- QUALITY AND MATURITY STANDARDS:
- PEST AND DISEASE MANAGEMENT:
- COMMUNICATIONS AND TECHNOLOGY TRANSFER:
- NETWORKING:
- PROCESSING AND VALUE ADDING:
- CHEMICALS:

Through the decision to vary the project the phase 2 methodology included:-

- COMMUNICATIONS AND TECHNOLOGY TRANSFER:
- STATISTICS:
- EXPORT, PROCESSING AND VALUE ADDING

Throughout the life of the projects each of the original and new components were covered to at least a minimal level.

- In relation to phase 2 of the project the outcomes relating to Communications and Technology Transfer are dealt with in b), c) and d) below.

But in addition to that AWIA has been able to undertake and complete a Walnut Industry Communication and Extension Strategy. This will become an important tool for AWIA as it moves forward.

- In relation to Statistics this outcome has been achieved through the completion of the 2015 Grower Production survey and the preparation of a comprehensive report.

This process has given the Walnut Industry a

- new and well defined statistical base line, and
- process that can be used on an annual basis to update and expand the data collected.

- In relation to Export, Processing and Value Adding some work commenced in this area but more needs to be undertaken to consolidate the process and information. Some of the outcomes have been:-
 - Preparation of a list of Farmers Markets,
 - Collection, collation and distribution of export enquires,
 - Commencement of collecting overseas and Australian data, and

- Circulation via e-mail and/or the e-newsletter relevant material relating to overseas markets and value adding.

b) Prepare communication for industry – newsletters/e-news, technical bulletins, website material and articles on a regular basis

- The continuation of the newsletter 'The Kernel' throughout the life of the project has given AWIA a mechanism to communicate a wide range of information to the growers.

No matter what the future arrangements might be this newsletter has been established as an important communication tool and can be maintained through paid staff, volunteer committee members or a subcontractor.

- Flowing from the project has been the production of a range of technical material including:-
 - the Draft On-Farm Biosecurity Manual,
 - the continual up-grading of the walnut Quality Parameters Manual,
 - 'MANAGEMENT OF WALNUT BLIGHT IN AUSTRALIA' bulletin.

Again, no matter what the future arrangements might be this newsletter has been established as an important communication tool and can be maintained through paid staff, volunteer committee members or a subcontractor.

- The AWIA website has continually been modified and expanded to add relevant technical and market information. Uploading of symposium and farm walk presentations, farmer's markets information and past and current research projects has resulted in new material being made available to members. The introduction of the 'Orchard Production Puzzle' will add a new dimension to the website through the storage of past, current and future reports.

Currently two AWIA Committee members have taken responsibility for maintaining the website.

c) Organise two grower workshops per year

- Throughout the life of this project the equivalent of two symposia and/or farm walks per year have been conducted. The farm walks in particular have been held in a range of production regions including Shepparton, Victoria; Bathurst, NSW; Mildura, Victoria; and Swansea, Tasmania so allowing growers the opportunity to visit new regions on a regular basis, meet new growers and visit new orchards and associated businesses. This in part has linked with outcome d) in that it has ensured communications between growers in different geographic regions.
- The 'grower workshops' have generally included a symposium and/or a farm walk as well as opportunity for growers to network. In addition there has always been a grower meeting/panel session so that more general walnut issues can be raised, discussed and actions undertaken.
- The symposiums have utilised a range of international, Australian and regional speakers covering a wide range of topics as requested by the growers. Unfortunately the list of grower topics is far greater than the time available but this is also an opportunity for the Association as it allows for new topics to be covered and keeping the format 'fresh'.

d) Ensure communication with members in growing regions around Australia by keeping AWIA website up-to-date with articles and through webinars/website interactive forums meeting or video conferencing.

- Communications between growers has been maintained and expanded through the following:-
 - Farm Walks and Regional meetings,
 - E-mail communications,
 - Articles and symposia presentations loaded onto the website, and
 - Interactive grower meetings, forums and panel sessions.

Areas that the outcomes have not been fully achieved include the conducting of webinars and the use of video conferencing. Both continue to be areas of consideration by AWIA as means to further communicate with growers who are distributed across Australia from Western Australia to northern New South Wales and eastern Tasmania.

e) Investigate and recommend potential R&D projects/programs to AWIA and HAL/HIAL.

- Through the grower evaluations surveys, after each symposium/farm walk, and the work before and during the strategic planning process AWIA has been able to gather a very comprehensive list of topics that can best be dealt with through R&D projects.

This information is currently being used by AWIA to establish a broad set of R&D strategies and then some very specific R&D actions and investments.

- The continuation of the R&D sub-committee throughout the life of the project has ensured that R&D is always being considered in the broad context of the Industry Strategic Plan.

The challenge for both the committee and the Walnut Industry is to prioritise the R&D needs to match the current available resources.

- Through the strong linkages between AWIA and Walnuts Australia the specific research undertaken by Walnuts Australia has been made available to all Walnut growers through technical fact sheets on the website.

f) Manage R&D projects/programs for which AWIA is the service provider.

- The Technical Communications Officer, in both phases was able to manage the R&D Projects/programs managed by AWIA including:-
 - China technical visit and ACACA project, and
 - WN11001 - Determining and establishing quality parameters for Australian walnuts.

g) Act as the secretariat for the Walnut R&D Committee.

- Particularly in the second phase of the Technical Communications Officer has been able to assist the Walnut R&D Committee to undertake its role and achieve the objectives set out in the sub-committee's terms of reference.

Evaluation and Discussion

The "Maintaining and expanding the technical development of the Australian Walnut Industry" project was a very important one for the Australian Walnut Industry because it brought some focus into the past, current and future needs and activities of the Australian Walnut Industry.

The aim of the project was to continue the development of the Australian Walnut Industry to achieve increased profitability through a multi-faceted approach to industry capacity building. The strategy was to undertake the employment of a part-time Technical Communications Officer to extend technical information to industry to assist growers in increasing yields and improving nut quality.

The first thirteen months of this project (1/12/2012 to end of 2013) resulted in

- regular communication of newsletters and e-bulletins to members,
- visits to growers in Vic and NSW,
- a field trip, winter symposium,
- a visit by AWIA members to China to the International Walnut Symposium,
- Blight fact sheets, and
- A booklet on the China walnut visit.

However, a number of outputs and outcomes were not achieved despite extra hours being committed to the project.

There was a need for greater project focus so that activities, outputs and outcomes were realistically achievable.

For 2014 and 2015 the project had a narrower, but in depth focus with achievable outcomes.

With the resignation of the Technical Communications Officer – Mac MacArthur in December 2013, AWIA worked with HAL to appoint a new Technical Communications Officer – Trevor Ranford.

One of the advantages of contracting Trevor Ranford as the Technical Communication Officer has been that he has also undertaken similar roles for the Pistachio, Chestnut and Hazelnut industries. This has resulted in the Walnut industry being able to expand the programs and share the costs across the four industries. Not only has this resulted in efficiencies it has brought new information and knowledge to the walnut industry.

Particularly through Phase 2 of the project regular input from growers has been an integral part of the process. While no specific evaluation was undertaken of the overall project the following forms of evaluation/input were undertaken:-

a) Grower input into issues of importance to their business and/or the broader industry.

This resulted in a list of topics that have been used by AWIA to develop strategic actions and specific projects and programs.

b) Grower involvement in the Strategic Planning process.

This resulted in a list of issues that were subsequently built into the AWIA Walnut Industry Strategic Plan.

c) Grower evaluation surveys at the conclusion on the symposiums/farm walks.

Through the evaluation of the past three symposium/farm walks AWIA has both an assessment of each activity and a list of issues/topics of further interest to the growers.

The collated responses for each of the activities are presented within the Appendices to this report but the following are the summaries.

2015 JANUARY FARM WALK - SUMMARY OF EVALUATION SURVEY

Qu: Did you find the length of the Farm Walk?

Rating out of 7 5.93

Qu: Did you find the content of the Farm Walk program?

Rating out of 7 6.00

Qu: I found the Farm Walk to be interesting & informative?

Rating out of 7 6.39

Qu: I found the Farm Walk to be well organized?

Rating out of 7 6.17

Qu: I found the Farm Walk relevant to my needs?

Rating out of 7 6.22

2015 AUGUST WINTER SYMPOSIUM - SUMMARY OF EVALUATION SURVEY

Qu: Did you find the length of the Conference?

Average rating out of 7: 5.53

Qu: Did you find the content of the Conference program?

Average rating out of 7: 5.89

Qu: I found the Conference to be interesting & informative?

Average rating out of 7: 6.3

Qu: I found the Conference to be well organized?

Average rating out of 7: 6.15

Qu: I found the Conference relevant to my needs?

Average rating out of 7: 6.00

2015 NOVEMBER FARM WALK - SUMMARY OF EVALUATION SURVEY

Qu: Did you find the length of the Farm Walk?

Rating out of 7 6.27

Qu: Did you find the content of the Farm Walk program?

Rating out of 7 6.00

Qu: I found the Farm Walk to be interesting & informative?

Rating out of 7 6.56

Qu: I found the Farm Walk to be well organized?

Rating out of 7 6.39

Qu: I found the Farm Walk relevant to my needs?

Rating out of 7 6.28

In analysing the results there is a strong indication that overall AWIA has good acceptance from the participants on the conferences/symposium/farm walk including the right content, interesting and informative and meeting grower's needs. In nearly every case the rating was 6.0 or above out of 7.

The area where there were some grower concerns was in relation to the length of events. At times one extra session is one too many. Given the large number of topics that growers are interested in and given that there are only two events each year there is often a tendency to try and cover too much.

The aspect that AWIA can take from this and the grower survey in section d) below is the need to develop additional ways to deliver information to growers. This in part is covered by the concepts detailed in the Communications and Extension Strategy.

Getting the balance right in preparing and presenting symposiums/farm walks is always a challenge given the varying needs of a large group of growers but AWIA appears to have achieved a good balance and base to build from.

d) Data collection.

While not a direct form of evaluation the collection of industry statistics through the 2015 Grower Production Survey was an integral part of the project.

AWIA had previously struggled with collecting grower data on production, tree numbers and other specific information. The collection of the data from the 2015 Grower Production Survey was extremely positive and the results have now given AWIA and the industry a strong baseline to utilise in the future. The overall process worked well and has given AWIA a methodology to utilise and expand on in 2016 and beyond.

The willingness of growers to present their information through a confidential survey highlights a new maturity within the industry.

e) **Grower survey on preferred technology transfer.**

The full results from this survey are detailed in the Communications and Extension Strategy and have been used to further develop the future strategy but the following is a brief summary of some of the results:-

Question: How would you prefer to learn about outcomes of walnut R&D, technology transfer and innovation relevant to the Australian walnut industry?

INITIATIVES/ACTIVITIES	Rating	% Response
Field days	1	100
Regional meetings and workshops	2	87
E-newsletter	3	80
Fact sheets/Technical Bulletins	3	80
Walnut industry website	4	74
Walnut Researchers	4	74
Via relevant international walnut R&D and marketing websites or publications	5	67
YouTube videos	6	54
Other growers	6	54
Rural Suppliers	7	47
Industry development/communications Personnel	8	40
Social Media	8	40
Private Consultants	9	34

The responses gave strong support to those methodologies currently being utilised by AWIA to communicate with growers:-

- Field Days,
- Regional meetings and Workshops,
- E-newsletters,

- Fact Sheets/Technical Bulletins, and
- Website.

The Communications and Extension Strategy will become a powerful 'tool' for AWIA in the coming years to focus on the best forms of communications with growers.

f) Project evaluation by the Project Team and AWIA Executive.

The Technical Communications Officer has communicated regularly with the Chair and members of the project team, as well as other members of AWIA Board of Management and Sub-Committee leaders and the individual grower members of the Australian Walnut Industry Association Inc.

Also as necessary the Technical Communications Officer has communicated with experts external to AWIA Board and membership.

As part of the process the Technical Communications Officer has reported on the project at each of the AWIA Executive Committee meetings and/or teleconferences and prepared reports for each of the meetings.

This has ensured that both the project team and the AWIA Executive were well informed of the activities and outcomes and were able to make regular evaluations of the project and then make adjustments and/or take appropriate actions throughout the life of the project.

The Australian Walnut Industry Association Inc (AWIA) as the peak body representing the interests of walnut growers in Australia is overseeing the rapidly expanding production as a result of increased plantings over the past five years. As a result the industry requires substantial continuing development to support this expansion and has received an immeasurable amount of support and technical information from the Technical Communications Officer and the Maintaining and expanding the technical development of the Australian Walnut Industry "project.

Recommendations

The project team recommends that:

“The Australia Walnut Industry Association Inc maintains the position of Technical Communications Officer/Industry Development Officer and utilises the resources to building on past programs/projects to continue to grow the Australian Walnut Industry.”

Scientific Refereed Publications

None to report.

Intellectual Property/Commercialisation

No commercial IP generated.

References

No References

Acknowledgements

The Australian Walnut Industry Association would like to acknowledge the

- Financial support by Horticultural Innovation Australia Ltd and the Australian Walnut Industry Association Inc.
- Mr Colin Jack and Dr Michael Lang, Chairs of the Australian Walnut Industry Association Research Committee.
- Australian Walnut Industry Association grower participants on the Project Team:
 - Carol, Kunert,
 - Colin Jack,
 - Sally Smith,
 - Hilary Jankelson
- Mr Mac MacArthur and Mr Trevor Ranford, Australian Walnut Industry Association project officers.
- Dr Michael Lang and Mr Derek Goulet, Walnuts Australia.
- All the Australian Walnut growers who have committed time, effort and information by completing surveys, attending symposia/farm walks and participating in other industry functions. Without the input of growers the ability for continuous improvement would not be possible.
- All the presenters and sponsors who have supported the raft of industry events.

Appendices

APPENDIX A:	Tasks and Key Performance indicators for the Technical Communications Officer Project – December 2012 to November 2015.
APPENDIX B:	Blight Fact Sheet.
APPENDIX C:	Results from the grower survey – June 2015.
APPENDIX D:	AUSTRALIAN WALNUT INDUSTRY COMMUNICATION AND EXTENSION STRATEGY - 2015 to 2025.
APPENDIX E:	STRATEGIC PLAN – AUSTRALIANWALNUT INDUSTRY ASSOCIATION (AWIA) - 2015 – 2020.
APPENDIX F:	December 2015 e-newsletter.
APPENDIX G:	2015 January Symposium/Farm Walk Media Release.
APPENDIX H:	A copy of the 2015 January Symposium/Farm Walk Evaluation Survey results.
APPENDIX I:	Australian Nutgrower article on 2015 January Symposium/Farm Walk.
APPENDIX J:	2015 August Symposium and Annual General Meeting Evaluation Survey results.
APPENDIX K:	2015 November Symposium/Farm Walk Media Release.
Appendix L:	2015 November Symposium/Farm Evaluation Survey results.
APPENDIX M:	DRAFT Walnut Orchard Production Puzzle.
APPENDIX N:	2015 Grower Production Survey form.
APPENDIX O:	Statistical analysis of 2015 Industry Survey report.
APPENDIX P:	R&D Committee Minutes of the meeting held on the 22 nd October.
APPENDIX Q:	Most recent Technical Communications Officer Report.

APPENDIX 1: Tasks and Key Performance indicators for Technical Communications Officer Project.

1st December 2012 to 1st June 2013

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013
1.	COMMUNICATIONS AND TECHNOLOGY TRANSFER:			
2.	Prepare communication for industry – newsletters (quarterly), e-news (monthly), technical bulletins, website material, articles on a regular basis	<ul style="list-style-type: none"> Prepare communication for industry – newsletters (quarterly), e-news (monthly), technical bulletins, website material, articles on a regular basis to add to the Walnut Industry 'toolkit'. 	<ul style="list-style-type: none"> Monthly e-news Quarterly printed and posted newsletter Jan, Mar, Jun, Dec Technical bulletins on differing subjects Articles published in Australian Nutgrower and international journals 	<ul style="list-style-type: none"> 4 Newsletters published Dec 12, Jan 13, Mar, 13 and May 13. Posted hard copies to 40 people that had not opened their issue 12 as emails.
3.	Expose growers to export culture and objectives that builds a whole of crop approach	<ul style="list-style-type: none"> AWIA Attendance at international Walnut Symposium (IWS) in China 	<ul style="list-style-type: none"> Successful arrangement of tour for HAL participants. 	<ul style="list-style-type: none"> Bulletin in Nutgrower and to members Mar 13. Liaison with IWS China and Tour Agency. 26 Member application for trip
4.	Establish and maintain linkages with Australian and International Walnut Researchers to ensure the most current scientific information is available to Walnut growers		Technical bulletins and news to members See ref 2.	<ul style="list-style-type: none"> Established contact with researchers HAdem DPI Tatura and K Evans and M Lang TIA Tas. Other resources include INC, N4Life. Met with Clive Marsh a researcher from the New Zealand Walnut Industry Growers Group to discuss NZ Blight Issues.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013
5.	Make contacts with current and future buyers and importers	Develop list of future buyers and importers, and future AWIA exporters and their requirements.	<ul style="list-style-type: none"> List of future buyers and importers and their requirements. List of future AWIA exporters and their requirements. 	<ul style="list-style-type: none"> Growing list of enquiries received by AWIA mail for buyers from overseas. Drafted Survey for growers for export interest together with Organic status, tree production etc see item 23 I have held discussions on ways to improve the accuracy of collection of data and develop a list of future buyers and importers and am working a survey questionnaire to collect this data from walnut growers, buyers and importers.
6.	Undertake two technical workshops each year to inform growers of current and developing technology	Plan and develop one farm walk and one technical workshop each year.	<ul style="list-style-type: none"> One farm walk in November combining technical info. One technical workshop in August. Include workshop evaluation sheets. 	<ul style="list-style-type: none"> Planned a walnut orchard farm walk and technical session at Bathurst, NSW in Jan 2013 postponed due to accurately forecasted extremely hot weather conditions and fires. This farm walk and technical sessions will now be held in November 2013. Technical Workshop planned for 23 August, Yering Meadows Vic.
7.	Prepare, implement and maintain a Walnut industry Quality Assurance and food safety program	Review HACCP and Fresh care Programs as a basis for Food Safety and Qual Assurance.	Undertake in 2014	
8.	Review and maintain the AWIA Production Guide to Establishing Walnut Orchards		Updated guide by May 2013	<ul style="list-style-type: none"> Initial contact with the author H Adem.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013
9.	Review and maintain the AWIA Quality Management Guide		Update in 2014	Already on website. Bring to attention of members.
10.	QUALITY AND MATURITY STANDARDS:			
11.	Continue the development of Australian Walnut Maturity and Quality Standards		Provide practical support to Growers in Project by collecting on farm data and forwarding to TIA.	<ul style="list-style-type: none"> • Circulated to all project participants the final version of David McNeil and Kathy Evan's paper review of the literature on the ability of growers to manage and improve walnut quality. • Held participant meetings in Feb, May 2013 • Gathered Bureau of Meteorology data for TIA. • Refer project WN11001
12.	Promote Capacity building through attendance at national and overseas workshops and symposiums	Notify members of national and overseas workshops and Symposiums.	AWIA members attended	<ul style="list-style-type: none"> • ANIC conference March 2013, China IWS promoted in news bulletins and Nutgrower. • 6 AWIA members attended ANIC Conference.
13.	Undertake a visit/video link to each of the growing regions (across the life of the project) to visit growers and assist with regional programs.		2 regions per year.	<ul style="list-style-type: none"> • Visited the following orchards in Vic/NSW: Colin Jack (Strathfieldsaye); Bryan Goble (Koondrook); Doug and Adam Trigg (Pyramid Hill); Lachie McKenzie (Koraleigh) and the QWP facility (Koraleigh). Held discussions with Colin Barry (Harston) at his walnut stall at the Echuca market.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013
14.	STATISTICS:			
15.	Develop appropriate statistical collection models to maintain up to date information on walnut production, areas, varieties and management issues	<ul style="list-style-type: none"> Utilising appropriate technologies plot the positions of each Australian Walnut Orchard and utilise grower information for the management of issues including chemical application management. Biosecurity and production matters 		<ul style="list-style-type: none"> Database of past and present AWIA members and farm addresses available.
16.		<ul style="list-style-type: none"> Undertake annual data collection on tree numbers, varieties and production through interaction with growers to build a complete picture of the industry. 		<ul style="list-style-type: none"> Reviewed existing data gathered from AWIA membership Secretary.
17.	PEST AND DISEASE MANAGEMENT			
18.	Prepare and maintain relevant pest and disease information leaflets as part of the broad industry 'toolkit'			
19.	Prepare and maintain a blight management manual		Blight Management manual tabled	<ul style="list-style-type: none"> Familiarisation with project and liaison with C Jack and M Lang.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013
20.	Ensure on-farm biosecurity training programs are maintained and made available to all growers		Completed Biosecurity Manual by 2014	<ul style="list-style-type: none"> Met AWIA Biosecurity reps H Jankelson, Reviewed existing information template for manual, ANIC nut industry manual. Organise Derek, Mike B and Hilary to look at reimbursement costs
21.	Prepare and maintain information bulletins on Blight Management.	Prepare a one page Blight Fact Sheet	Blight workshop printed copies distributed to growers and, loaded onto website. By March 2013	<ul style="list-style-type: none"> A blight management fact sheet has been drafted and is being reviewed and edited by M Lang. Using info from blight workshop in 2011/12, Blight workshop loaded onto AWIA website
22.	PROCESSING AND VALUE ADDING:			
23.	Gather relevant information on processing and value adding from around Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products.	Locate sources of up to date information on processing and value adding	Interim report available by March 2014	<ul style="list-style-type: none"> Visited one of the largest walnut orchards in New Zealand and developed ongoing technical liaison and communication with Heather North and Clive Marsh owners of Lightfoot Walnuts at Lincoln near Christchurch and also with Jeffrey and Marg Feint walnut growers at Wanaka near Queenstown.
24.	Professional Development	Undertake Professional Development related to Technical Communication with Horticulture Australia by attending one appropriate HAL work shop in consultation with AWIA President and Chair Research & Development.	Attendance at HAL workshop	Attended HAL Members forum in Melbourne May 2013.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013
25.	HAL communications	Maintain communication with the Industry Development Manager at HAL in relation to time frames for new submission or industry improvement opportunities.		

N4Life: Nuts for Life(AWIA is a member)
 ANIC Australian Nut Industry Council (AWIA is a member)
 INC International nuts and dried fruits Council
 TIA: Tasmanian Inst. Of Agriculture.

2nd June to 1st December 2013

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
26. COMMUNICATIONS AND TECHNOLOGY TRANSFER:					
27.	Prepare communication for industry – newsletters (quarterly), e-news (monthly), technical bulletins, website material, articles on a regular basis	<ul style="list-style-type: none"> Prepare communication for industry – newsletters (quarterly), e-news (monthly), technical bulletins, website material, articles on a regular basis to add to the Walnut Industry 'toolkit'. 	<ul style="list-style-type: none"> Monthly e-news Quarterly printed and posted newsletter Jan, Mar, Jun, Dec Technical bulletins on differing subjects Articles published in Australian Nutgrower and international journals 	<ul style="list-style-type: none"> 4 Newsletters published Dec 12, Jan 13, Mar, 13 and May 13. Posted hard copies to 40 people that had not opened their issue 12 as emails. 	<ul style="list-style-type: none"> 3 Newsletters published 24 June, 24 Sept, 3 Dec 2013 Posted hard copies of Sept. newsletter to 72 people. No Bulletins. Further specific bulletins required. No articles in Australian or international journals.
28.	Expose growers to export culture and objectives that builds a whole of crop approach	<ul style="list-style-type: none"> AWIA Attendance at international Walnut Symposium (IWS) in China 	<ul style="list-style-type: none"> Successful arrangement of tour for HAL participants. 	<ul style="list-style-type: none"> Bulletin in Nutgrower and to members Mar 13. Liaison with IWS China and Tour Agency. 26 Member application for trip 	<ul style="list-style-type: none"> 4 Bulletins to members re China trip and bulletin in Nutgrower. Liaison with IWS China and Tour Agency. Act as tour leader for AWIA delegation of 16 members to China. Successful completion of the tour.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
29.	Establish and maintain linkages with Australian and International Walnut Researchers to ensure the most current scientific information is available to Walnut growers		Technical bulletins and news to members See ref 2.	<ul style="list-style-type: none"> Established contact with researchers H Adem DPI Tatura and K Evans and M Lang TIA Tas. Other resources include INC, N4Life. Met with Clive Marsh a researcher from the New Zealand Walnut Industry Growers Group to discuss NZ Blight Issues. 	<ul style="list-style-type: none"> Ongoing working relationship with K Evans and M Lang. H Adem has now retired from DPI. Need greater emphasis on most current international scientific information. Published article from Clive Marsh in The Kernel.
30.	Make contacts with current and future buyers and importers	Develop list of future buyers and importers, and future AWIA exporters and their requirements.	<ul style="list-style-type: none"> List of future buyers and importers and their requirements. List of future AWIA exporters and their requirements. 	<ul style="list-style-type: none"> Growing list of enquiries received by AWIA mail for buyers from overseas. Drafted Survey for growers for export interest together with Organic status, tree production etc see item 23 Held discussions on ways to improve the accuracy of collection of data and develop a list of future buyers and importers. Development of a survey questionnaire to collect this data from walnut growers, buyers and importers. 	<ul style="list-style-type: none"> Grower survey waiting on committee approval. Advised AWIA members of a potential supermarket walnut promotion – no resultant sales Established file of future buyers/importers.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
31.	Undertake two technical workshops each year to inform growers of current and developing technology	Plan and develop one farm walk and one technical workshop each year.	<ul style="list-style-type: none"> One farm walk in November combining technical info. One technical workshop in August. Include workshop evaluation sheets. 	<ul style="list-style-type: none"> Planned a walnut orchard farm walk and technical session at Bathurst, NSW in Jan 2013 postponed due to accurately forecasted extremely hot weather conditions and fires. This farm walk and technical sessions will now be held in November 2013. Technical Workshop planned for 23 August, Yering Meadows Vic. 	<ul style="list-style-type: none"> Bathurst Farm walk on 23 and 24 November with 26 people attending. Assisted AWIA Committee with organisation. Obtained some fact sheet information on cockatoo control from Vic DPI and printed copies for the farm walk. Develop evaluation sheet for farmwalk feedback. Due to car accident, unable to organise or participate in technical workshop in August. Technical workshop focused on walnut taste testing and reports from China trip. Lisa Yates from Nuts 4Life addressed the group about health claims for walnuts.
32.	Prepare, implement and maintain a Walnut industry Quality Assurance and food safety program	Review HACCP and Fresh care Programs as a basis for Food Safety and Qual Assurance.	Undertake in 2014		
33.	Review and maintain the AWIA Production Guide to Establishing Walnut Orchards		Updated guide by May 2013	<ul style="list-style-type: none"> Initial contact with the author H Adem. 	<ul style="list-style-type: none"> Spoken with H. Adem twice re. this Guide. He has concerns as it was initially written by a number of authors and not all agree with the content. H Adem now retired.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
34.	Review and maintain the AWIA Quality Management Guide		Update in 2014	Already on website. Bring to attention of members.	<ul style="list-style-type: none"> No progress. Bring to notice of members that guide is available on the website..
35.	QUALITY AND MATURITY STANDARDS:				
36.	Continue the development of Australian Walnut Maturity and Quality Standards		Provide practical support to Growers in Project by collecting on farm data and forwarding to TIA.	<ul style="list-style-type: none"> Circulated to all project participants the final version of David McNeil and Kathy Evan's paper review of the literature on the ability of growers to manage and improve walnut quality. Held participant meetings in Feb, May 3013 Gathered Bureau of Meteorology data for TIA. Refer project WN11001 	<ul style="list-style-type: none"> CD of data to be printed and posted to all 2012, 2013 voluntary levy contributors. Held four participant taste testing and teleconference meetings 25 Feb, 20 June, 16 Sept. and 12 Dec, 2013

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
37.	Promote Capacity building through attendance at national and overseas workshops and symposiums	Notify members of national and overseas workshops and Symposiums.	AWIA members attended	<ul style="list-style-type: none"> ANIC conference March 2013, China IWS promoted in news bulletins and Nutgrower. 6 AWIA members attended ANIC Conference. 	<ul style="list-style-type: none"> 16 AWIA and 3NZ walnut industry members attended China International Walnut Symposium. 18 members and 8 non members attended Bathurst Farmwalk
38.	Undertake a visit/video link to each of the growing regions (across the life of the project) to visit growers and assist with regional programs.		2 regions per year.	<ul style="list-style-type: none"> Visited the following orchards in Vic/NSW: Colin Jack (Strathfieldsaye); Bryan Goble (Koondrook); Doug and Adam Trigg (Pyramid Hill); Lachie McKenzie (Koraleigh) and the QWP facility (Koraleigh). Held discussions with Colin Barry (Harston) at his walnut stall at the Echuca market. 	<ul style="list-style-type: none"> Postponed further visits in 2013 due to other AWIA commitments.

39. STATISTICS:

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
40.	Develop appropriate statistical collection models to maintain up to date information on walnut production, areas, varieties and management issues	<ul style="list-style-type: none"> Utilising appropriate technologies plot the positions of each Australian Walnut Orchard and utilise grower information for the management of issues including chemical application management. Biosecurity and production matters 		<ul style="list-style-type: none"> Database of past and present AWIA members and farm addresses available. 	<ul style="list-style-type: none"> Pending results of grower survey.
41.		<ul style="list-style-type: none"> Undertake annual data collection on tree numbers, varieties and production through interaction with growers to build a complete picture of the industry. 		<ul style="list-style-type: none"> Reviewed existing data gathered from AWIA membership Secretary. 	<ul style="list-style-type: none"> Pending results of grower survey.
42.	PEST AND DISEASE MANAGEMENT				
43.	Prepare and maintain relevant pest and disease information leaflets as part of the broad industry 'toolkit'				
44.	Prepare and maintain a blight management manual		Blight Management manual tabled	<ul style="list-style-type: none"> Familiarisation with project and liaison with C Jack and M Lang. 	<ul style="list-style-type: none"> No progress

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
45.	Ensure on-farm biosecurity training programs are maintained and made available to all growers		Completed Biosecurity Manual by 2014	<ul style="list-style-type: none"> Met AWIA Biosecurity reps H Jankelson, Reviewed existing information template for manual, ANIC nut industry manual. Organise Derek, Mike B and Hilary to look at reimbursement costs 	<ul style="list-style-type: none"> No progress
46.	Prepare and maintain information bulletins on Blight Management.	Prepare a one page Blight Fact Sheet	Blight workshop printed copies distributed to growers and, loaded onto website. By March 2013	<ul style="list-style-type: none"> A blight management fact sheet has been drafted and is being reviewed and edited by M Lang. Using info from blight workshop in 2011/12, Blight workshop loaded onto AWIA website 	<ul style="list-style-type: none"> Fact sheet published and mailed to all AWIA members
47.	PROCESSING AND VALUE ADDING:				

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
48.	Gather relevant information on processing and value adding from around Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products.	Locate sources of up to date information on processing and value adding	Interim report available by March 2014	<ul style="list-style-type: none"> Visited one of the largest walnut orchards in New Zealand and developed ongoing technical liaison and communication with Heather North and Clive Marsh owners of Lightfoot Walnuts at Lincoln near Christchurch and also with Jeffrey and Marg Feint walnut growers at Wanaka near Queenstown. 	<ul style="list-style-type: none"> Section on processing and value adding contained in china Trip report which will be sent to all AWIA members in Dec 2013.
49.	Professional Development	Undertake Professional Development related to Technical Communication with Horticulture Australia by attending one appropriate HAL work shop in consultation with AWIA President and Chair Research & Development.	Attendance at HAL workshop	Attended HAL Members forum in Melbourne May 2013.	No other HAL forums attended.

Ref	HAL Outcome	Task	Key Performance Indicator	Progress as at 1 June 2013	Progress at 1 Dec 2013
50.	HAL communications	Maintain communication with the Industry Development Manager at HAL in relation to time frames for new submission or industry improvement opportunities.			<ul style="list-style-type: none"> Attempted contact by TCO with Warwick Sherf, HAL Industry Service Manager for walnuts. Due to his unavailability, questions were answered by other HAL staff. Several discussions with Brad Wells, HAL Strategy Implementation Manager on a number of possible walnut industry improvement opportunities.

(Over 3 years from 2013 – 2016)

N4Life: Nuts for Life(AWIA is a member)

ANIC Australian Nut Industry Council (AWIA is a member)

INC International nuts and dried fruits Council

TIA: Tasmanian Inst. Of Agriculture

2nd December 2013 to 20 December, 2014

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 20 Dec, 2014
51.	COMMUNICATIONS AND TECHNOLOGY TRANSFER:			
52.	<p>Communication for industry – cutting edge newsletters (quarterly) and as per communications plan to be developed for final year of the project (2015) possibly including e-newsletters, website material, articles on a regular basis</p> <p>Communication with walnut growers in all growing regions around Australia by keeping AWIA website up-to-date with articles and through webinars/website interactive forums</p>	<ul style="list-style-type: none"> Development of a communications plan based on industry consultation – this will prioritise communication channels and will be used to establish key areas of interest and topics for technical communications and workshops. Maintain regular communications with ALL walnut growers through use of the AWIA website and interactive forums, e-newsletters, website and technical bulletins. Use the AWIA website to communicate with growers and producers via video demonstrations, webinars and interactive forums. Website will need re-modelling. Explore the potential for video conferencing between grower regions. Maximise the use of electronic technologies and social networking to gather and then disseminate information wherever possible. 	<ul style="list-style-type: none"> Communications plan completed June 2015 Quarterly printed and posted newsletter Jan, Mar, Jun, Dec 2 Technical bulletins on differing subjects per year 2 Articles published in Australian Nutgrower per year Web site: <ul style="list-style-type: none"> Fortnightly news updates Increased use of AWIA web interactive forum Established links to research publications Nuts for life links and updates 	<ul style="list-style-type: none"> On schedule for 2015 Newsletter produced in Set, Nov 2014 Walnut quality parameters booklet produced and distributed. Training for how to edit website underway. Focus for detailed web update in Feb 2015 to incorporate more information, links and commence discussion forum. Industry email address (TCO) and , web email blasts tested and functional .

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 20 Dec, 2014
53.	Two industry field days or seminars	<ul style="list-style-type: none"> Undertake two industry field days or seminars per year to inform growers of current and developing technology. 	<ul style="list-style-type: none"> One farm walk in November/Jan combining technical info. One technical workshop in August. Include workshop evaluation sheets. 	<ul style="list-style-type: none"> Technical workshop 23 August 2014 at Shepparton, VIC. 42 attended. Talks were video recorded for DVD distribution. Survey Monkey post event survey distributed. Planning underway for Jan 16 – 18 2014 farmwalk in Swansea TAS.
54.	Ensure the most current scientific information and trends are available to Walnut growers	<ul style="list-style-type: none"> Access international journals and industry websites to allow up to date worldwide trends and news to be conveyed to Australian growers and producers. 	<ul style="list-style-type: none"> List of relevant links to articles, Analysis of trends on 6 monthly basis. 	<ul style="list-style-type: none"> Attendance at HAL IDO workshop at International Horticulture Congress, 16 and 17 Aug. 2014. Attendance at AgVet Chemical Forum
55. INDUSTRY STATISTICS:				
56.	Up to date information on Australian walnut production, areas, varieties and management issues	<ul style="list-style-type: none"> Undertake annual data collection on tree numbers, varieties and production through survey of growers and processors to build a picture of the industry. Explore mapping of all Australian walnut properties. Use statistical information for development of a biosecurity plan for the walnut industry (to be undertaken by the AWIA committee). 	<ul style="list-style-type: none"> Grower survey report by end of March annually. Ongoing survey to new members who join throughout the year. 	<ul style="list-style-type: none"> Initial response to survey that was sent out in Aug 2014 was poor; TCO will follow up to achieve near 100% response by Mar, 2014. Privacy and Confidentiality Policy developed for AWIA Technical input into the Agriculture Competitiveness White Paper in relation to current and future domestic and international markets for walnut sales. Initial contact with H Adem to follow up on previous mapping undertaken. Needs more follow up. Draft of on farm Biosecurity Manual underway, due Jan 2015.

57. EXPORTING, PROCESSING AND VALUE ADDING:

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| 58. World walnut production and market trends researched and export opportunities communicated to growers and processors | <ul style="list-style-type: none">• Develop list of future buyers and importers, and future AWIA exporters and their requirements.• Investigate options for export for single and cooperative growers and processors.• Establish a database and direct contact details of export markets and produce a 'how to' sheet to assist growers interested in export (this will not include promotional information) | <ul style="list-style-type: none">• List of future buyers and importers and their requirements.• List of future AWIA exporters and their requirements. | <ul style="list-style-type: none">• Forum held at august Seminar about processor and exporting requirements with general agreement to change sizings to align better with European standards. Follow up with Committee underway. |
| 59. Processing and Value adding | <ul style="list-style-type: none">• Gather relevant information on processing and value adding from around Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products. | Interim report available by March 2014 | <ul style="list-style-type: none">• Forum held at august Seminar about processor and exporting requirements• Results of WN11001 (best practice for ensuring walnut quality) to be disseminated. |
| 60. Potential R&D projects/programs investigated and recommended to AWIA and HAL <ul style="list-style-type: none">• | <ul style="list-style-type: none">• Manage R&D projects/programs for which AWIA is the service provider• Act as the secretariat for the Walnut R&D Committee | | <ul style="list-style-type: none">• Managed WN 11001- walnut quality Parameters to its conclusion. The results will be brought over to TCO role for dissemination. |

61. HIA communications

- Maintain communication with the Industry Development Manager at HIA in relation to time frames for new submission or industry improvement opportunities.

21st December 2014 to 31st May 2015

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 31 st May 2015
COMMUNICATIONS AND TECHNOLOGY TRANSFER:				
62.	Communication for industry – cutting edge newsletters (quarterly) and as per communications plan to be developed for final year of the project (2015) possibly including e-newsletters, website material, articles on a regular basis Communication with walnut growers in all growing regions around Australia by keeping AWIA website up-to-date with articles and through webinars/website interactive forums	<ul style="list-style-type: none"> Development of a communications plan based on industry consultation – this will prioritise communication channels and will be used to establish key areas of interest and topics for technical communications and workshops. Maintain regular communications with ALL walnut growers through use of the AWIA website and interactive forums, e-newsletters, website and technical bulletins. Use the AWIA website to communicate with growers and producers via video demonstrations, webinars and interactive forums. Website will need re-modelling. Explore the potential for video conferencing between grower regions. Maximise the use of electronic technologies and social networking to gather and then disseminate information wherever possible. 	<ul style="list-style-type: none"> Communications plan completed June 2015 Quarterly printed and posted newsletter Jan, Mar, Jun, Dec 2 Technical bulletins on differing subjects per year 2 Articles published in Australian Nutgrower per year Web site: <ul style="list-style-type: none"> Fortnightly news updates Increased use of AWIA web interactive forum Established links to research publications Nuts for life links and updates 	<ul style="list-style-type: none"> On schedule for 2015 Grower survey on industry needs commenced Grower survey on communication preferences to be undertaken late June 2015 Newsletter produced in March, April and May 2015 Article on January Symposium/Farm Walk prepared and printed in March edition of Australian Nutgrower. Website capacity increased New pages and reports added to website Website used to communicate with members Investigating a YouTube component to be attached to website. Video taken of January Symposium for access by members.

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 31 st May 2015
63.	Two industry field days or seminars	<ul style="list-style-type: none"> Undertake two industry field days or seminars per year to inform growers of current and developing technology. 	<ul style="list-style-type: none"> One farm walk in November/Jan combining technical info. One technical workshop in August. Include workshop evaluation sheets. 	<ul style="list-style-type: none"> Symposium/Farm Walk organised and held on Jan 16 – 18 2015 in Swansea TAS. 25 growers attended Media release prepared and distributed Media interviews undertaken by President, Mick Lang and Kathy Evans. Evaluation conducted and collated Video of Symposium and Farm Walk completed. Article in March 2015 Australian Nutgrower Symposium being planned for August 2015 and Farm Walk in November 2015

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 31 st May 2015
64.	Ensure the most current scientific information and trends are available to Walnut growers	<ul style="list-style-type: none"> Access international journals and industry websites to allow up to date worldwide trends and news to be conveyed to Australian growers and producers. 	<ul style="list-style-type: none"> List of relevant links to articles, Analysis of trends on 6 monthly basis. 	<ul style="list-style-type: none"> Attendance at Horticulture Industry Day held in Canberra in February 2015 as organised by the Department of Agriculture Attended the ANIC Nut Conference and gather information in relation to marketing trends. Attendance at AgVet Chemical Forum in February 2015 and had input into the walnut pest/disease and chemical priorities. Attended an update meeting from the Bureau of Meteorology on climate expectations for 2015. Visited the Port of Melbourne in relation to export opportunities through the port.

65. INDUSTRY STATISTICS:

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 31 st May 2015
66.	Up to date information on Australian walnut production, areas, varieties and management issues	<ul style="list-style-type: none"> Undertake annual data collection on tree numbers, varieties and production through survey of growers and processors to build a picture of the industry. Explore mapping of all Australian walnut properties. Use statistical information for development of a biosecurity plan for the walnut industry (to be undertaken by the AWIA committee). 	<ul style="list-style-type: none"> Grower survey report by end of March annually. Ongoing survey to new members who join throughout the year. 	<ul style="list-style-type: none"> Revised grower survey and sent as individual e-mails to all growers in May 2015 (after harvest), Responses being collected and collated in June 2015. Mapping information been supplied to TCO and is being reviewed. Draft of on farm Biosecurity Manual is awaiting final approval from PHA. Information on Phytophthora has been collected and package of information sheets planned for July 2015. Participated in Biosecurity Roundtable as organised by the Department of Agriculture. Participated in the CRC for Plant Biosecurity planning session on the National Biosecurity R,D & E Strategy. This included supplying a list of major biosecurity priorities for the Walnut Industry

67. EXPORTING, PROCESSING AND VALUE ADDING:

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| <p>68. World walnut production and market trends researched and export opportunities communicated to growers and processors</p> | <ul style="list-style-type: none"> • Develop list of future buyers and importers, and future AWIA exporters and their requirements. • Investigate options for export for single and cooperative growers and processors. • Establish a database and direct contact details of export markets and produce a 'how to' sheet to assist growers interested in export (this will not include promotional information) | <ul style="list-style-type: none"> • List of future buyers and importers and their requirements. • List of future AWIA exporters and their requirements. | <ul style="list-style-type: none"> • Export page being planned for the AWIA website • Export enquiries are being collected and distributed to members via e-mail but ultimately will be placed on the website. • Linkage to MiCOR is to be undertaken via the website |
| <p>69. Processing and Value adding</p> | <ul style="list-style-type: none"> • Gather relevant information on processing and value adding from around Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products. | <p>Interim report available by March 2014</p> | <ul style="list-style-type: none"> • Aspects of processing/value adding discussed at the grower forum held as part of the January Farm Walk. • Presentation on PhD project on storage and innovation given at the January Symposium. Presentation on the AWIA website. |
| <p>70. Potential R&D projects/programs investigated and recommended to AWIA and HAL</p> <ul style="list-style-type: none"> • | <ul style="list-style-type: none"> • Manage R&D projects/programs for which AWIA is the service provider • Act as the secretariat for the Walnut R&D Committee | | <ul style="list-style-type: none"> • Modifications the Quality Parameters Manual including a review of grading sizes. • Application for training funds through the Federal Government Industry Skills Training Fund. • Ongoing communications with the Chair of the R&D Committee and Walnuts Australia. • Grower survey seeking identification of issues of concern to growers in relation to their individual businesses and the Australian Walnut Industry. To be used as part of the Strategic Plan Review. |

71. HIA communications

- Maintain communication with the Industry Development Manager at HIA in relation to time frames for new submission or industry improvement opportunities.

- Technical input into the HIAL Consultation paper in relation to board horticulture R&D requirements.

1st June 2015 to 30th November 2015

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 30th November 2015
COMMUNICATIONS AND TECHNOLOGY TRANSFER:				

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 30 th November 2015
72.	Communication for industry – cutting edge newsletters (quarterly) and as per communications plan to be developed for final year of the project (2015) possibly including e-newsletters, website material, articles on a regular basis	<ul style="list-style-type: none"> Development of a communications plan based on industry consultation – this will prioritise communication channels and will be used to establish key areas of interest and topics for technical communications and workshops. 	<ul style="list-style-type: none"> Communications plan completed June 2015 	<ul style="list-style-type: none"> On schedule for 2015 Grower survey on industry needs completed, information collated and incorporated into Strategic Plan Grower survey on communication preferences undertaken and information being built into relevant plan. Strategic planning workshop conducted in June 2015 at which aspects of communications were considered and built into the DRAFT Walnut Strategic Plan.
	Communication with walnut growers in all growing regions around Australia by keeping AWIA website up-to-date with articles and through webinars/website interactive forums	<ul style="list-style-type: none"> Maintain regular communications with ALL walnut growers through use of the AWIA website and interactive forums, e-newsletters, website and technical bulletins. Use the AWIA website to communicate with growers and producers via video demonstrations, webinars and interactive forums. Website will need re-modelling. Explore the potential for video conferencing between grower regions. Maximise the use of electronic technologies and social networking to gather and then disseminate information wherever possible. 	<ul style="list-style-type: none"> Quarterly printed and posted newsletter 2 Technical bulletins on differing subjects per year 2 Articles published in Australian Nutgrower per year Web site: <ul style="list-style-type: none"> Fortnightly news updates Increased use of AWIA web interactive forum Established links to research publications Nuts for life links and updates 	<ul style="list-style-type: none"> Newsletter produced in August and November/December 2015 Website capacity increased and new pages and reports added to website Website used to communicate with members Investigating a YouTube component to be attached to website. Relevant technical newsletters and/or articles distributed to the AWIA Executive committee and/or the growers. All presentations from both the August and November Symposium placed on website.

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 30 th November 2015
73.	Two industry field days or seminars	<ul style="list-style-type: none"> Undertake two industry field days or seminars per year to inform growers of current and developing technology. 	<ul style="list-style-type: none"> One farm walk in November combining technical info. One technical workshop in August. Include workshop evaluation sheets. 	<ul style="list-style-type: none"> Symposium/AGM organised and held on the 22nd August 2015 in Shepparton, VIC. <ul style="list-style-type: none"> 40 growers attended Media release prepared and distributed Media interviews undertaken. Evaluation conducted and collated Symposium/Farm Walk organised and held on the 21st November 2015 at Mildura, VIC <ul style="list-style-type: none"> 38 growers attended Media release prepared and distributed Media interviews undertaken. Evaluation conducted and collated

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 30 th November 2015
74.	Ensure the most current scientific information and trends are available to Walnut growers	<ul style="list-style-type: none"> Access international journals and industry websites to allow up to date worldwide trends and news to be conveyed to Australian growers and producers. 	<ul style="list-style-type: none"> List of relevant links to articles, Analysis of trends on 6 monthly basis. 	<ul style="list-style-type: none"> Attendance at AgVet Chemical Forum in June 2015 and had input into the walnut pest/disease and chemical priorities. Participation in annual review of Quality Parameters manual in June 2015 and incorporating changes into an update of the manual. 2015 production data collected was statistically reviewed and the formal report is being currently being designed and once finalised will be made available to the industry as both a pdf file and on the website

Ref	HAL Output	Task	Key Performance Indicator	Progress as at 30 th November 2015
INDUSTRY STATISTICS:				
75.	Up to date information on Australian walnut production, areas, varieties and management issues	<ul style="list-style-type: none"> Undertake annual data collection on tree numbers, varieties and production through survey of growers and processors to build a picture of the industry. Explore mapping of all Australian walnut properties. Use statistical information for development of a biosecurity plan for the walnut industry (to be undertaken by the AWIA committee). 	<ul style="list-style-type: none"> Grower survey report by end of March annually. Ongoing survey to new members who join throughout the year. 	<ul style="list-style-type: none"> Revised grower survey and sent as individual e-mails to all growers in June 2015 (after harvest), Responses were collected and collated in July and August 2015. Mapping information been supplied to TCO and is being reviewed. New draft of on farm Biosecurity Manual completed including the revised pest and disease list from the Nut Industry Biosecurity plan. Information on Phytophthora continues to be collected and collated. Participated in meeting with the new Secretary of the Federal Department of Agriculture and discussed biosecurity issues. Participated in the PHA/AHA joint industry forum and presented relevant material from the Walnut Industry. Participated in the PHA members meetings for and on behalf of AWIA. Report from the meetings prepared and included in the November/December 2015 e-newsletter.

76. EXPORTING, PROCESSING AND VALUE ADDING:

World walnut production and market trends researched and export opportunities communicated to growers and processors	<ul style="list-style-type: none"> • Develop list of future buyers and importers, and future AWIA exporters and their requirements. • Investigate options for export for single and cooperative growers and processors. • Establish a database and direct contact details of export markets and produce a 'how to' sheet to assist growers interested in export (this will not include promotional information) 	<ul style="list-style-type: none"> • List of future buyers and importers and their requirements. • List of future AWIA exporters and their requirements. 	<ul style="list-style-type: none"> • Export page being planned for the AWIA website • Export enquiries are being collected and distributed to members via e-mail and the website. • Export data collected by Walnuts Australia and made available for inclusion on the web site • Worked with growers and ANIC to develop current and future export data.
77. Processing and Value adding	<ul style="list-style-type: none"> • Gather relevant information on processing and value adding from around Australia and overseas and make this available to growers with the aim of expanding opportunities for the use of walnuts, particularly second grade walnuts, in value-adding products. 	Interim report available by March 2014	<ul style="list-style-type: none"> • Aspects of processing/value adding discussed at the grower forums

78. Potential R&D projects/programs investigated and recommended to AWIA and HAL <ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Manage R&D projects/programs for which AWIA is the service provider • Act as the secretariat for the Walnut R&D Committee 	<ul style="list-style-type: none"> • Modifications the Quality Parameters Manual including a review of grading sizes. • Communications with the new Chair of the R&D Committee and Walnuts Australia. Participation in the R&D Committee meeting held in October 2015 • Grower survey seeking identification of issues of concern to growers in relation to their individual businesses and the Australian Walnut Industry was distributed, inputs collated and information built into the AWIA Strategic planning process.. • Held discussions with the Bayer Product Development Manager to discuss possible new chemicals. • Attendance at a Victorian Horticulture Industry Network visit to NSW DPI facilities at Gosford and discussed relevant R&D opportunities and food safety programs. • Attendance at an Agribusiness Forum in Adelaide. • Attendance at a technical presentation on Walnut nutrition presented by Dr Patrick Brown from the University of California.
79. HIA communications	<ul style="list-style-type: none"> • Maintain communication with the Industry Development Manager at HIA in relation to time frames for new submission or industry improvement opportunities. 	

- Technical input into the possible establishment of a Walnut Collective Industry Fund.
- Input into issues of concern to the Walnut industry as part of the ongoing HIAL transition process.
- Communications with the HIAL Walnut Industry Relations Manager including an invitation to attend and present at the November Symposium/Farm Walk.

APPENDIX B: Blight Fact Sheet.



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Introduction

Walnut blight, caused by the bacterial pathogen *Xanthomonas arboricola* pv. *juglandis* (*Xaj*), is present in all walnut growing regions in Australia. The pathogen attacks flowers, shoots, leaves, buds and fruit of all commercial cultivars grown in Australia.



Fruit infections can cause great economic loss through kernel rot (left) and shell staining (right)

Spread of bacterium

Xaj primarily overwinters in the outermost portion of walnut buds and catkins. Colonisation patterns occurring during bud and shoot development in spring, suggest that resident *Xaj* can invade and infest developing fruits.

Wind driven rain-splash may be important in the movement of *Xaj* onto developing fruits, given that bacteria are easily suspended into rain-splash and transported onto host tissue.

Protective spray programme

Active ingredients

The current management strategy is based on multiple copper-based sprays for protecting susceptible plant tissue.

Copper-based products are more effective than non copper products; the addition of mancozeb to copper increases control in comparison to applications of copper alone.

Copper rates

Copper-mancozeb sprays applied at label rates provide the most effective control of walnut blight. Sprays applied at rates lower than label rates may provide effective control in low disease years.

Spray volume

Spray volumes differ between, and are dependent upon leaf age, surfaces and cultivars. Increasing spray



volumes increases copper deposition; however, deposition and efficacy reduce after the point of run-off.

Spray timing

Sprays applied at 7 day intervals from budburst to three weeks after budburst may reduce pathogen inoculum, protect primary infection courts and reduce disease incidence.



Blight sprays commence when 5% of terminal buds are at Cf2 i.e., when the leaves begin to separate

Reducing the initial inoculum from budburst is a suitable strategy for control of walnut blight in low disease years.

In high disease years, inoculum can be multiplied many times during the growing season, thus requiring further sprays during the growing season. In years with high disease incidence, multiple copper-mancozeb sprays may be required to provide adequate control.

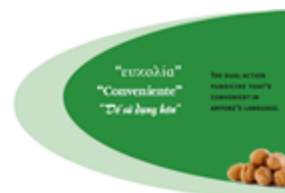
Sprays may be required from bud-burst to when nuts are half-grown to control the disease. Use half full-size diameter fruit size as an indicator for when nuts are half-grown.

Mixing sprays

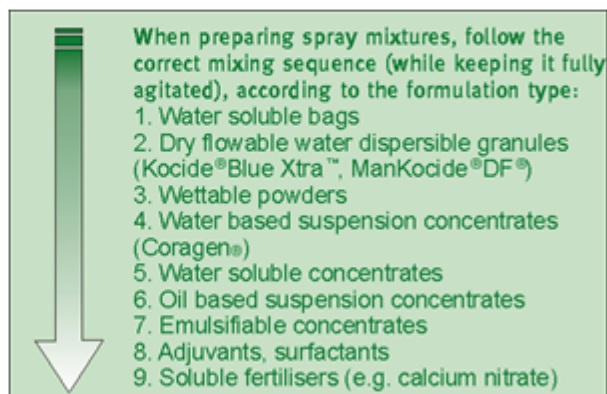
It is critical when preparing spray mixtures to follow the correct mixing sequence (while keeping the mixture fully agitated according to the formulation type) .See mixing order diagram prepared by DuPont.



Mixing Order



It is important that
products used in
tank mixes are added
in the correct
sequence according
to their
formulation type.



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fungicide

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Concluding remarks

The incidence of walnut blight can vary markedly between cultivars, locations and years in Australia, with the development of damaging epidemics when weather conditions are favourable.

Walnut blight has the potential to seriously reduce yield and under conditions conducive to disease development and a conservative protective spray approach is warranted.

The lack of viable control strategies, other than copper-based sprays, for managing the disease has focused research on optimising the timing of copper sprays. Sprays, timed according to pathogen activity, may adequately control walnut blight and limit unnecessary applications of copper.

Chemical Safety

Users of agricultural (or veterinary) chemical products must always read the label and any Permit before using the product, and strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the Permit by reason of any statement made or not made in this publication.

Material Safety Data Sheets (MSDS) which supplement product label information must always be accessible where orchard chemicals are stored. They are available from rural merchandisers and on manufacturer's websites and provide important information to help guard users against poisoning and crop damage.

Pesticide residues may occur in animals treated with pesticides, or fed any crop product, including crop waste that has been sprayed with pesticides. It is the responsibility of the person applying a pesticide to



do all things necessary to avoid spray drift onto adjoining land or waterways.

Recording of chemical treatments is important as it ensures market access through demonstrating that you are assessing the risk; you can evaluate how well or poorly a chemical worked and you may save time and money through working out exactly what amount of chemical is required for each spraying.

For further information visit the Australian Walnut Industry website www.walnut.net.au

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (September 2013). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer from a Department of Primary Industries or the user's independent adviser.

Acknowledgements

This project was facilitated by Horticulture Australia Limited (HAL) in partnership with the Australian Walnut Industry Association. The Australian Government provides matched funding for all HAL's research and development activities.

APPENDIX C: Results from the grower survey – June 2015.

STRATEGIC PLANNING – GROWER RESPONSES

WHAT ARE THE **SIX** MOST IMPORTANT ISSUES FACING **YOUR WALNUT BUSINESS**?

- Climatic events such as severe and untimely frosts and heat waves.
- Harvesting management is important for us because we are starting out and have difficulty in understanding the value of investing in different equipment.
- On site post-harvest processing. This will be expensive for us because we do not have other local farmers to share costs.
- Cockatoo and other bird management.
- Because we are a long way from other walnut farmers it is difficult to form cooperatives.
- Lack of local support from DPI. Although the government has promoted its interest in supporting small industries they have removed the AWIA's support from HAL and created HIAL which does not provide support for our industry. Clearly they mainly wish to support the mega industries. I believe AWIA has provided enormous support for the walnut industry. With the past support the walnut industry has grown very rapidly and the larger players are going to greatly influence nut availability and sales price. The smaller farmers need to have an organisation like AWIA to help lead and support the smaller farmers. This is also important as a means of maintaining healthy orchards and avoiding biosecurity issues.
- Yield - managing risks to yield (blight, PFA, pruning, environment heat and frost)
- Maximising Quality (colour, size, tip shrivel, kernel yield)
- Storage and transport conditions post harvest (cool rooms, Packaging, shipping conditions)
- Tree Nutrition
- Innovation (new technology, minimising high labour rates and NPD-walnut milk)
- Food safety (from orchard to consumer)
- Managing climate change impact
- Managing cockatoo incursions!
- Increasing tree productivity
- Capitalising on the changing nature of food distribution i.e. direct from grower to consumer
- Cost of Labour
- Growing the business into full production
- Pest Control major time and expense, loss of production- Cockatoos
- Marketing our walnuts.
- Health of walnut trees – productivity and survival of trees
- Climate – Water accessibility / rainfall / warming
- Organic certification – we are embarking on this in the coming year
- Finding appropriate market(s) to sell mature walnuts (when ready)
- Establishment costs
- Farm Biosecurity including pests and diseases / non organic contamination
- Assistance (funding for DPI/Government importation costs) with importing new low winter chill walnut varieties from overseas breeding programs.
- Availability of purported new low winter chill walnut varieties (Solano and Ivanhoe) to growers in the Murray-Mallee Region.
- Funding to assist with our current on-farm rootstock research which will benefit the whole Australian walnut industry.
- Funding assistance with genetic typing of walnut cultivars from the UC Davis DNA labs.
- How do we remain in the industry when the farm gate price is \$5.00/kg in-shell or less before hulling, drying, packaging and freight are deducted?
- Where are the profitable markets for the smaller sized in-shell walnuts?
- Access to disease resistant rootstock and varietal material

- Being part of a rapidly growing industry and remaining financially viable
- Small scale drying facilities
- Small scale shelling facilities
- Ongoing Blight management
- Access to an industry wide propagation facility/service
- Blight and disease in trees including Chestnuts.
- Sustainability of profits and cost reductions of operations.
- Upgrade of plant and equipment including irrigation items, plant and equipment, irrigation lines, fertigation items etc. Need to redesign and start again!
- Keeping fertiliser and soils, leaf and stem tests going to ensure increased fruit levels = production and harvest quantities and qualities.
- Maintaining Organic Certification status and free of chemicals. The previous owner did very well but chemical fertiliser inputs were negligible.
- Increasing yields and productivity. The efficiency of the current operation is constantly under review to keep costs down and profitability up. Many changes have been made to the way things are done including new product types where previously product was 'thrown away'....our costs are kept to a minimum to make profitability greater.
- Variety selection specific to area.
- Rootstock trials
- Information in relation to best practices orchard development
- Storage of product information
- Walnut nursery accreditation and tree description uniformity
- Variety breeding and improvement
- Market signals are the missing link
- Prices of Californian in-shell, kernel and availability
- Local prices
- How much local product is available at any one time
- Crop yield/hectare
- Pests and diseases
- Orderly and consistent marketing
- Natural disasters
- Getting good staff
- Urban encroachment\getting good workers (as we are in an isolated area)
- Keeping a good crop – need good storage conditions and pest control
- Being able to get a respectable price for good quality walnuts
- Keeping up with the latest technology and processing developments
- A desire to collaborate with other businesses for a common goal.
- Birds
- Harvesting machinery options
- Blight
- Fertilizer options

WHAT ARE THE SIX MOST IMPORTANT ISSUES FACING THE AUSTRALIAN WALNUT INDUSTRY?

- Biosecurity.
- Management of walnut blight.
- Creation and maintenance of the most suitable germ-plasm for our climatic zones.
- Development of a single desk for the export industry where walnuts which have been graded by the quality project guidelines can be confidently marketed.
- Maintaining the free flow of information that has been evident through the good relations between AWIA and its members and the powerful scientific information that Walnuts Australia has developed. An example of this is the work developing the best spraying protocol for blight control. An important issue is that the HAL funding of these projects has meant that the

information must be published for all to see. This may come under threat if the HIAL body is developed where by only those paying levies are able to participate in research. A very important aspect of this is the continuing funding of our technical communications officer.

- Developing peer reviewed health information about the value of walnuts as foods and as medicinal agents to expand our markets.
- Free Trade Agreements vs Chile i.e. Europe 4% for Aus, 0% Chile
- Marketing- Australian Grown, low pesticides, safe, reliable, we do produce Health Data, breakthrough the restrictions!
- Industry Wide Biosecurity Plan
- Lack of Research, Development and Extension
- Chemical Access – New chemistry, minor use permits
- Water security and availability
- Biosecurity
- Climate change and managing its impact – sunburn, frost, water etc
- Expanding domestic market though increased per capita consumption
- Current lop-sided nature of the industry and the future for smaller producers
- Access to ANIC and its advocacy
- Funding relevant research
- Efficient Production and affordable Processing costs.
- Disease control and management of incursions
- Marketing our superior products against cheaper imports.
- Ongoing leadership in Research & Development
- Funding R&D levy based system.
- Recognition and standing out from other agricultural related industries – point of differentiation
- Quality of research and findings – being up to date in tree related matters as well as food trends with walnuts
- Being a proactive marketer (PR and advertising) for Australian Walnuts
- Identification of new trends and emerging markets for walnuts
- Collaboration with other walnut organisations worldwide to encourage cross collaboration grower links and networks.
- Fostering innovation and change - bringing new people into walnut growing - resources / tools / tips / mentoring
- Universal availability to all Australian walnut growers of purported new low winter chill walnut varieties Solano and Ivanhoe.
- Cooperation with Iran (via Kourosh Vahdati) on screening naturally occurring low winter chill and low water use varieties from that country.
- Up to date information on walnut sales, prices, markets.
- The establishment of a secure varietal germ-plasm repository of all walnut cultivars.
- Access to overseas markets on a fair playing field.
- Rootstock research.
- How is AWIA responding to the Federal Governments Small Exporter grants program?
- Availability of Paradox of a known *Hindsii* parent stock that may give quality seed nuts (i.e. importation of budwood of *J. Hindsii* (var. Rawlins), for local proliferation and incorporation into orchards to harvest a proven paradox seed from. (personal conversation with Wes Hackett, UC Davis)
- Early availability in AU of improved varieties of Paradox as they are released (Vlatch, RX1, VX211)
- Early availability in AU of newer nut varieties to establish in variety block trials in all areas
- Closer relationship with AQIS to streamline importation of budwood materials. Can this be something done and funded through AWIA for everyone's benefit?
- Sustainability with mature walnut farmers....several have indicated that the wish to either retire or be bought out. This issue will be critical for the smaller farmers to survive and their orchards to continue. Several have already asked me if I wish to buy their farms.

- Overseas imports. The cost of Nut in Shell from overseas is critically too low for locals to compete. The profitability for Australian small farms is low and people in the industry are all middle to older age groups. This is partially because Walnut farms take so long to get established and working. If someone asked me about starting a Walnut farm (from my one year's limited experience so far) I'd say.. "you'd have to be a gambling person and want to have lots of money to throw at it only to see it possibly return in many years to come....try something else!.
- The Walnut harvesting machinery needed for small farms is too expensive and does not exist. We're lucky we bought large machines for a small farm...other farmers are not so lucky nor can afford large machines for smaller orchards. The industry needs smaller more affordable harvesting machines to reduce the "hand harvesting" that most small farmers use. We need small more "hobby size" machines...a cut-down version of the Tree Shaker OMC, Weiss McNaire Harvester and JD 50 Brooms. Our machines are difficult to operate in such smaller rows and small orchards.
- Industry marketing. Where do we see our market in several years time? Smaller Walnut farmers are selling at weekend markets etc with low margins (if any profit at all?) trying to off-load their stock to whoever can afford it. Time to have a larger consortium distributor who can market all VIC grown walnuts.
- Consumer education. The darker coloured walnuts are still edible and full of goodness but don't look appealing. The colour standard is good but consumers have been educated by the paler colour of Bleached and washed walnuts in shell....ours or Organic and much darker and dirtier...but the flavour and texture inside is most important. Need to ensure the consumers know that the light colour from overseas walnuts is bleached....not natural walnut colour.
- Increased farm incomes. We've diversified into packaged products in various forms and now sell our Walnut shell (milled shell) into a variety of applications. It's not a new product to the world but is new to many people who don't know of the magical properties of walnut shell.
- Market signals are the missing link
- Prices of Californian in-shell, kernel and availability
- Local prices
- How much local product is available at any one time
- Managing AWIA to truly represent members when all committee positions are voluntary
- Quality control on what goes out into the market for Australian walnuts.
- Lack of government funding at a federal level
- Disparity between needs of big grower versus small grower companies.
- Issue around levy paying being dysfunctional limits funds for the industry body to be able to function as a PIB.
- Inferior American product setting Australian price
- Lack of market information.

APPENDIX D: AUSTRALIAN WALNUT INDUSTRY COMMUNICATION AND EXTENSION STRATEGY - 2015 to 2025.

AUSTRALIAN WALNUT INDUSTRY

COMMUNICATION AND EXTENSION STRATEGY

2015 to 2025



PREPARED BY: AUSTRALIAN WALNUT INDUSTRY ASSOCIATION INC.

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GOALS, OBJECTIVES AND STRATEGY

SUMMARY

The Australian Walnut Industry, through the Industry Strategic Planning and Industry Development Needs Assessment process (Project WN10000 – “Australian Walnut Industry Development: Detailed Needs Assessment Process”) identified and mapped out for the Walnut Industry a range of projects/activities that needed to be included into a Walnut industry communication and extension plan. This involved reviewing past and current communication and extension activities, gathering input from the industry members, identifying gaps and developing a new plan for the 2015 to 2025 period.

PURPOSE OF THIS COMMUNICATION AND EXTENSION PLAN

The purpose of the plan is to provide timely strategic, effective and relevant methods of communication that will:-

- Inform industry of the details of industry projects and the related impacts on industry participants.
- Ensure growers are well informed about issues that will potentially impact their businesses –including industry performance (data), production and marketing issues and government policy.
- Promote industry unity.
- Raise the profile of the Australian Walnut industry with government and other key stakeholders.

BACKGROUND AND OBJECTIVES

The Australian Walnut Industry Association Inc requires regular and effective communications with its key stakeholders to ensure that growers are at the 'leading edge' of technology and information and can market the industry and its products effectively in both the domestic and export markets.

Key stakeholders are:

- Australian Walnut growers in all States and Territories;
- Retailers and wholesalers;
- Federal and State government agencies;
- Key research organisations;
- Commercial suppliers/other service providers;
- Consumers of walnut products.

An Industry Needs Assessment was conducted by The Australian Walnut Industry Association and it found that the following areas required action as part of an overall Communications and Extension Strategy:-

1. Encourage extension style activities by developing a schedule that identifies topics of interest, effective delivery methods and timelines for delivery.
2. Promote effective planning, communications, extension and adoption relating to research projects.
3. Create an evaluation feedback system for AWIA to better understand which communications influence growers most effectively.
4. Review the industry website and determine the best method of presenting important historical and new research information to growers, including links to related topics.
5. Refine the communications to growers to improve and optimise industry development needs.
6. Develop a Strategic Marketing and Promotions Plan for the period of 2015 - 2025.
7. Review AWIA's current marketing and promotions program to gauge its effectiveness.
8. Carry out some Consumer Research to build on previous work undertaken.
9. Survey growers on their needs for information and communication transfer.
10. Examine other models for effective communication to all stakeholders and people linked to the Walnut Industry in Australia and overseas.

STRATEGIC GOALS

- To develop an effective Communication and Extension Strategy that can be linked to the Walnut Industry Strategic Plan 2015 - 2020 and its other components such as:
 - Industry Research and Development Framework/Plan
 - Export Strategy
 - Marketing Strategy and Plan
 - Industry Data Strategy and Plan
 - Economic Investment Strategy for funds expended in Research and Development and Marketing and Promotions
- To ensure that the Australian Walnut Industry communicates with all key stakeholders, audiences and consumers to assist in the growth of the industry over the next 10 years and the increase in consumption of walnuts both domestically and overseas
- To obtain sufficient resources to effectively carry out the requirements of the communication and extension strategy in line with other plans and projects funded by the Walnut Industry.
- To provide ongoing evaluation of the Communication and Extension Strategy for its effectiveness and to then adjust the plan to suit changing circumstances and requirements

STRATEGY

The Strategy will be built around 4 key processes:

- An ongoing stakeholder communication plan, extension and education program that supports the goals of the Australian Walnut Industry at national and international levels.

(Note: Extension and education of research will also be a component of research and development projects undertaken on behalf of the industry.)

- Targeted marketing programs to increase domestic and export consumption of Australian Walnuts
- Utilising all communication tools available to provide advice and information to all stakeholders in the Australian walnut industry
- Studying other national and international models of successful communications programs in order to improve our own communication strategy.

SOLUTION AND MARKET OVERVIEW

There needs to be a holistic approach taken for communication and extension between the Australian Walnut Industry and its stakeholders who are both within and outside the Association. The Walnut Industry must ensure it is seen as a proactive industry catering for the needs of its growers and consumers both here in Australia and overseas.

Key factors for this to occur are:-

- The AWIA Website is to be continually upgraded and to be linked to relevant national and international sites.
The site:-
 - Contains key documents from AWIA, for example the Walnut Industry Plan 2015 to 2020, the national walnut marketing strategy, R, D & E strategies.
 - Needs to be easily accessible from outside Australia in English and other languages.
 - Needs to be regularly updated for general public usage and grower/member usage.
- Encourage more growers to connect to email and the web aiming for 100% connection rates by 2017.
- Ensure that all material is available in a number of media styles such as electronic, printed and in plain speak for consumer usage.
- Develop a national newsletter, a range of relevant publications, marketing and promotional material and technical notes to be available on the website and in printed form.
- To ensure all key stakeholders are listed and have their websites accessible from the AWIA Website for example:
 - State Government agencies;
 - Research bodies involved in walnut research both nationally and internationally;
 - Research and Development Corporations to access all Walnut Research projects carried out over the last 20 years as a reference and other relevant material;
 - Organisations who can provide information and products to the walnut industry, like a commercial database (for a fee).

- Look to provide the most suitable options for extension services to growers in the industry, including an 1800 call in number that could be monitored by one key body and use it as a referral process to other specific service providers and stakeholders.
- Set up feedback systems to ensure all stakeholders can provide information and ideas for new publications and ideas for the benefit of the industry into the future.
- Continue to provide traditional extension services such as field days and workshops and also ensure these can be accessed through new technologies available and through the NBN such as Video links, YouTube and Webinars.

TARGET STAKEHOLDERS AND CUSTOMERS

During the life of the Communication and Extension Strategy the concept and value of the Australian Walnut Industry needs to be understood by a wide variety of sectors, including industry and government stakeholders. All of these stakeholders will ultimately play a role in achieving a commercially sustainable walnut industry.

The key target customers and stakeholders for the Australian Walnut Industry are:-

Target Audience	Vehicle	Responsibility	Frequency
Growers and voluntary contribution Payers	Mail outs, emails, newsletter, SMS messages, 1800 contact number, website, meetings, workshops, field days	AWIA	Regularly
Other Nut Associations both Domestic and International	Emails, newsletter, website, meetings.	AWIA	Regularly
AWIA Executive Committee, Walnut R&D and any other AWIA subcommittees	Mail outs, emails, newsletter, website, meetings, SMS messages	AWIA Office	As required
Relevant RDC's including Horticulture Innovation Australia Limited and RIDIC	Emails, newsletter, meetings, working with key staff	AWIA Office	As required
Key Research Bodies	Emails, newsletter, meetings and working through National RD&E network, workshop, field days	AWIA	Regularly
Exporters/Importers	Emails, newsletter and relevant meetings	AWIA	As required
Retail Sector	Emails, newsletter and relevant meetings	AWIA, growers and processors	As required

Target Audience	Vehicle	Responsibility	Frequency
Federal Government Agencies	Emails, letters, newsletter and relevant meetings with agency staff	AWIA	As necessary
State Government Departments	Emails, letters, newsletter and relevant meetings with agency staff	AWIA	As necessary
Local Governments/Regional Bodies	Emails, letters, newsletter and relevant meetings with key staff	AWIA	As necessary
Industry stakeholders and Commercial Companies	Emails, letters, newsletter and relevant meetings with key staff	AWIA	As Required
Sponsors and Project Partners	Emails, letters, newsletter and relevant meetings with key staff	AWIA	As required
Employees and subcontractors of AWIA	Meetings, emails, website	Your own Organisation	As required

MESSAGES KEY COMMUNICATION

- A. Where will grower's voluntary contribution dollars be spent? Industry funding of new projects, expected benefits for industry in relation to funds invested and project outcomes.
- B. Changes that grower's should be adopting in their business as a result of project outcomes: Communicate key results from industry projects and related impacts on industry participants.
- C. Benefits of good industry data and industry initiatives to collect relevant industry data: Outline benefits to industry and mechanism that will be used to collect data
- D. Topical Industry Issues: Communicate major issues that are impacting on industry and consequences/actions required by industry participants.
- E. Communicate general industry information: Communicate issues such as industry events, industry statistics and information sources, environmental and natural resource management, biosecurity, consumer trends, market opportunities, food policy, Walnut Industry and AWIA activities/achievements and international industry issues.
- F. Promote the Australian Walnut industry and the credential of the industry with broader community/consumers and government.

Target Audience	Media Channels
<ol style="list-style-type: none"> 1. All Walnut growers 2. Exporters/Wholesalers (Brisbane, Sydney, Melbourne, Adelaide, Perth, and Hobart) 3. Local, State and Federal Government/HIAL/RIDIC/PHA, etc 4. Other Stakeholders (Researchers, consultants, service companies such as 	<ul style="list-style-type: none"> • Newsletter • Industry publications and Website • Industry field day/workshops • Study Groups/Tour • Grower meeting • Press Releases • Events both locally, nationally and internationally

SUGGESTED SCHEDULE FOR COMMUNICATION

Media Channel	Target Date	Target Audience	Messages	Responsibility	Rating
AWIA Annual General Meeting	August/September (annually)	1	A,B	AWIA	
Walnut National Newsletter – 'The Kernel'	From January 2015 bimonthly	1,2,3,4	A,B,C,D,E	AWIA/IDO	3
Industry field days/workshops	Two per year	1,2,4	B,C,D,E	AWIA/IDO	1
Study Tour	As required	1	A,B,C,D,E	AWIA	
Email/fax/SMS messages uploading website and Facebook	As required	1,5		AWIA/Web master/IDO	4, 8
R&D meeting	Every year	AWIA and Researchers	Update research issues	AWIA/Walnut R&D Committee	4
Website (growers section). Links with International Walnut websites/researcher/publications	Ongoing	1,2,3,4	A,B,C,D	AWIA/Webmaster/ IDO	4, 5
Website (consumer section)	Ongoing	5	E	AWIA/Marketing Committee	4
Press releases	As required	1	D,F	AWIA/IDO	
Fact Sheets/Technical Bulletins/YouTube	Bi---Monthly	1,2,3,4	B,D,E	AWIA/Walnut R&R Committee/IDO	3, 6
Events national and Regional based	As required	3,5	F	AWIA/Regional grower groups	2, 6
Program and media releases	Symposium Annually	1,2,3,4,5	A,D,F	AWIA	2

OTHER KEY ACTIONS

Website: Website to be maintained and continually upgraded including maintaining the login grower section. All newsletters, relevant reports and press releases will be uploaded to the grower section of the website at the time they are released.

Contact List: Continue to update the database and extended mailing/email lists for the Walnut newsletters and other key mail outs. Include other interested stakeholders e.g. government and key wholesalers and media.

Other Industry Magazine: Actively target industry magazines including the Australian Nutgrower and other key magazines, through press releases and feature articles (aim for one major feature per year)

Other News Media: Actively target the mainstream media where there are good project/industry outcomes in a both broad and specific geographic areas (e.g. Local newspapers, radio and television)

Public Relations Company: When required, utilise the resources of an appropriate communications business for public relations and creative marketing of Walnuts focussing from the national level downwards and from the grassroots upward, so to ensure that a similar message is disseminated both nationally and for international marketing

International Marketing: Use key international marketing magazines to promote Australian Walnuts. Attend Key National and International Events. Use key diplomatic and trade networks to promote product at key events

REVIEW

The Communication and Extension Strategy needs to be reviewed annually by AWIA and any other key organisations contracted to do work for AWIA and be modified to ensure feedback and change in policies and actions are included.

Therefore the Communication Strategy can be updated to suit changing circumstances due to seasonal variation and industry change and requirements from year to year and other activities.

PLEASE NOTE IN RELATION TO THIS DOCUMENT

Peak Industry Bodies (PIBs), such as AWIA have many important roles to perform. Some of these roles such as agri-political activity and/or PIB membership only activity (i.e. membership drives) should not be funded from Marketing and R&D voluntary contributions. As a result, AWIA will differentiate between general revenue and voluntary contribution funds able activities in any funding applications/programs in future years.

APPENDIX A: Results of the Survey question: Have you participated in or used any of the AWIA project initiatives?

INITIATIVES/ACTIVITIES	Rating	% Response
Industry field days	1	100
Individual farm visits	2	82
E-newsletter	3	69
Annual walnut industry statistics	4	63
Walnut industry website (technical and marketing components)	4	63
Regional growers meetings/workshops	4	63
Accessed information on the walnut R&D program	4	63
Accessed information on the walnut marketing program	5	57

Production material (marketing standards, quality, post harvest practices)	5	57
Provided information on walnut R&D priorities	6	50
Direct contact with Technical Communications Officer – phone/e-mail	5	50
Accessed information on biosecurity	7	44
I have not participated in or used any of the initiatives	No Responses	0

Other input (please specify): Collaborated with research and production data

APPENDIX B: Results of the Survey question:

How would you prefer to learn about outcomes of walnut R&D, technology transfer and innovation relevant to the Australian walnut industry?

INITIATIVES/ACTIVITIES	Rating	% Response
Field days	1	100
Regional meetings and workshops	2	87
E-newsletter	3	80
Fact sheets/Technical Bulletins	3	80
Walnut industry website	4	74
Walnut Researchers	4	74

Via relevant international walnut R&D and marketing websites or publications	5	67
YouTube videos	6	54
Other growers	6	54
Rural Suppliers	7	47
Industry development/communications Personnel	8	40
Social Media	8	40
Private Consultants	9	34

Other (input please specify): Australian Nutgrower Journal

ADDITIONAL INPUT: I need AWIA to be my 'ASSOCIATION' that oversees my farm accreditation program, farm biosecurity, registered chemical use, QA, WH&S, Environmental and Social ethical production methods and supply 'accredited Property Identification'

APPENDIX C: Potential Industry Development Activity Schedule (September 2012)

Employment of Industry Professionals (such as IDOs & IDMs)

PROJECT DETAILS						NEEDS ASSESSMENT TEAM RANKING			
Brief Description	Intended Outcomes	Possible Start	Possible Finish	Possible Budget	Managed By	Urgency (1–3)	Imp. (1–3))	Impact (1–3)	Success (1–3)
Activity National Industry Development Officer Employment of a full time IDO/IDM/RFO	<ul style="list-style-type: none"> ▪ Employment of a Walnut Industry Development Officer/Manager ▪ Supporting growers to reduce costs and environmental impact through improved practices on-farm ▪ Undertake relevant research, development and extension ▪ Facilitate R&D projects ▪ Facilitate training for growers ▪ Deliver improved technology transfer to all growers/levy payers ▪ Assist in the broad development of the Walnut Industry 	July 2012	June 2015	\$350,000 VC funds and matched	Australian Walnut Industry Association	1	1	1	2

Activity Walnut Industry Executive Officer HAL/AWIA partnership agreement (part payment)	<ul style="list-style-type: none"> Undertake relevant administration activities for AWIA Undertake relevant agri-political roles for AWIA Undertake communication roles with organisations including HAL, PHA and ANIC 	November 2011	Ongoing Annual contract	\$20,000 per annum General Revenue and partly through HAL/AWIA partnership agreement	Australian Walnut Industry Association	2	2	2	2
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Study tours – within Australia and overseas

PROJECT DETAILS						NEEDS ASSESSMENT TEAM RANKING			
Brief Description	Intended Outcomes	Possible Start	Possible Finish	Possible Budget	Managed By	Urgency (1–3)	Imp. (1–3))	Impact (1–3)	Success (1–3)
Activity Study Tour to China in 2013 Study Tour to China to participate in the International walnut Symposium	<ul style="list-style-type: none"> Attend the International Walnut Symposium Better informed growers of the international research being undertaken Develop an understanding of the Chinese Walnut production New export opportunities 	January 2013	November 2013	\$50,000 Voluntary Contribution funding through HAL	Australian Walnut Industry Association	3	2	2	2

Conferences and/or seminars

PROJECT DETAILS						NEEDS ASSESSMENT TEAM RANKING			
Brief Description	Intended Outcomes	Possible Start	Possible Finish	Possible Budget	Managed By	Urgency (1-3)	Imp. (1-3))	Impact (1-3)	Success (1-3)
Activity ANIC Conference Walnut Industry to participate in the Australian Nut Industry Conference	<ul style="list-style-type: none"> ▪ Presentation at Conference on the current status of the Australian Walnut Industry ▪ Walnut Industry delegates in attendance. ▪ Attendance by more Australian Walnut growers ▪ Network with the nut industry supply chain 	January 2013	June 2013	\$2,000 AWIA (for delegates including IDO and EO)	Australian Walnut Industry Association & Australian Nut Industry Council	3	2	2	1

Training programs, workshops and field days (Includes also field trips and field days)

PROJECT DETAILS						NEEDS ASSESSMENT TEAM RANKING			
Brief Description	Intended Outcomes	Possible Start	Possible Finish	Possible Budget	Managed By	Urgency (1-3)	Imp. (1-3))	Impact (1-3)	Success (1-3)
Activity Walnut Industry Field Day Annual Walnut Industry Field Day	<ul style="list-style-type: none"> ▪ Hold a Field Day in February 2012 for Walnut growers ▪ Update growers on current and future AWIA activities ▪ Networking of growers ▪ Update growers on recent research, development and 	February 2012	December 2012	\$5,000 Grower contribution and part funded through HAL/AWIA Partnership	Australian Walnut Industry Association	2	1	1	2

	extension programs.			Agreement					
Activity EPR Deed Training Undertake EPPR Deed Biosecurity Training	<ul style="list-style-type: none"> Inform industry representatives their responsibilities under the Emergency Plant Pest Response Deed 	June 2012	December 2012	Plant Health Australia responsibility	Australian Walnut Industry Association Plant Health Australia	1	2	2	2
Activity On-Farm Biosecurity Training Undertake On-farm Biosecurity Training Program	<ul style="list-style-type: none"> Prepare a Walnut Industry On-farm Biosecurity Training Document Implement a on-farm Biosecurity Training program for Australian Walnut growers 	June 2012	December 2012	\$10,000 Voluntary Contribution project through HAL	Australian Walnut Industry Association	2	2	2	2
Activity Fresh care Quality Assurance Training Implement a Quality Assurance/Food safety Training program	<ul style="list-style-type: none"> Implement a training program to bring all growers to a level of Quality Assurance/Food safety 	January 2012	June 2012	Grower contributions and Farm Ready Program	Australian Walnut Industry association IDO/IDM	2	2	2	2

Leadership development and scholarships

PROJECT DETAILS						NEEDS ASSESSMENT TEAM RANKING			
Brief Description	Intended Outcomes	Possible Start	Possible Finish	Possible Budget	Managed By	Urgency (1-3)	Imp. (1-3))	Impact (1-3)	Success (1-3)
Activity Young Leader Nomination HAL Awards Nominate a young walnut grower for the HAL Young leaders award	<ul style="list-style-type: none"> Promote a young person involved in the walnut industry for recognition of their contribution 	July 2012	December 2012	No cost	Australian Walnut Industry Association	2	2	2	2

Industry communications (newsletters, magazines, web sites, DVD's)

PROJECT DETAILS						NEEDS ASSESSMENT TEAM RANKING			
Brief Description	Intended Outcomes	Possible Start	Possible Finish	Possible Budget	Managed By	Urgency (1-3)	Imp. (1-3))	Impact (1-3)	Success (1-3)
Activity Monthly Newsletter Prepare and distribute a monthly e-newsletter	<ul style="list-style-type: none"> Preparation and distribution of monthly information by e-mail and/or hard copy Keep growers up-to-date with technical and general information 	December 2011	Ongoing	Funded through HAL/AWIA Partnership Agreement	Australian Walnut Industry Association EO IDO/IDM	1	2	1	2
Blight Management Manual	<ul style="list-style-type: none"> Present to growers the most current information on Blight management Development of a 'Tool Kit' to be utilised by growers 	December 2011	June 2012	Funded through IDO Project	Australian Walnut Industry Association EO IDO/IDM	1	1	1	1

Linkages with Overseas growers/researchers	<ul style="list-style-type: none"> Maintain a flow of information from overseas growers and/or researchers Endeavour to be 'in front' of issues and concepts before they occur in Australia 	December 2011	Ongoing	Funded through IDO Project	Australian Walnut Industry Association EO IDO/IDM	2	2	2	2
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Other

PROJECT DETAILS						NEEDS ASSESSMENT TEAM RANKING			
Brief Description	Intended Outcomes	Possible Start	Possible Finish	Possible Budget	Managed By	Urgency (1-3)	Imp. (1-3))	Impact (1-3)	Success (1-3)
Activity AWIA Guide to Establishing a Walnut Orchard in Australia Revise the Production Guide	<ul style="list-style-type: none"> Bring the current production guide into line with current technology Deliver a hard copy to all growers/levy payers Develop industry training package 	January 2012	December 2012	Role for new IDO/IDM	AWIA R&D Group IDO/IDM	3	2	3	2
Activity AWIA Quality Management Guide Revise the Quality Management Guide	<ul style="list-style-type: none"> Bring the current quality guide into line with current technology Deliver a hard copy to all growers/levy payers Develop industry training package 	January 2012	June 2012		AWIA R&D Group	2	1	1	2
Activity AWIA Trade Mark Establish and implement an Australian Walnut	<ul style="list-style-type: none"> Brand all Australian Walnuts that meet the Industry Quality requirements Promotion of Australian Walnuts to the general 	January 2013	December 2013	Commercial decision by AWIA Executive At the time	AWIA R&D Group	2	2	3	2

Industry Trade Mark	consumer								
Activity Walnut Maturity Standards Develop agreed Australian Walnut Maturity standards	<ul style="list-style-type: none"> Establish a new set of Australian Walnut Maturity Standards Training growers in the Quality Standards 	November 2011	October 2012	\$76,000 Voluntary Contribution application through HAL	AWIA R&D Group	1	1	1	2

Activity Walnut Industry Biosecurity Plan Establish and Implement a Walnut Industry Biosecurity Plan	<ul style="list-style-type: none"> Detailed plan for dealing with any new Exotic Pest Incursion Preparation of a list of exotic pests of concern to the Walnut Industry 	January 2012	December 2012	Australian Walnut Industry Association EO Plant Health Australia	Australian Walnut Industry Association	2	2	2	2
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PRIORITISATION RANKING GUIDE			
Urgency (in the context of the industry's national interest)	Ranked 1 to 3 with: <div> <div>1. Very Urgent Must be continued (existing projects) or addressed immediately</div> <div>2. Urgent Must be continued (existing projects) or addressed within the next three years</div> <div>3. Not so Urgent Must be continued (existing projects) or addressed within the next five years</div> </div>		
Importance (in the context of the industry's national interest)	Ranked 1 to 3 with: <div> <div>1. Very Important Critical to the survival of the industry</div> <div>2. Important Important for the industry's development and growth</div> <div>3. Not so Important Would be valuable to do, funds permitting</div> </div>		
Impact (in the context of the industry's national interest)	Ranked 1 to 3 with: <div> <div>1. Greatest Impact Very significant impact on the overall industry's profitability and or future viability</div> <div>2. High Impact Considerable beneficial impact, though not of the highest level</div> <div>3. Moderate Impact Impact is limited or restricted to a certain sector, region or group</div> </div>		
Success (in the context of the industry's national interest)	Ranked 1 to 3 with: <div> <div>1. High Very likely to achieve the outcomes</div> <div>2. Moderate Reasonably likely to achieve the outcomes</div> <div>3. Limited Only a limited chance of achieving the outcomes</div> </div>		

APPENDIX E: STRATEGIC PLAN – AUSTRALIAN WALNUT INDUSTRY ASSOCIATION (AWIA) -2015 – 2020.



STRATEGIC PLAN

**AUSTRALIAN
WALNUT INDUSTRY
ASSOCIATION
(AWIA)**

2015 - 2020

DRAFT

PREPARED BY: Australian Walnut Industry Association Inc

DATE: August 2015

VISION

“To ensure that sustainably produced Australian Walnuts are utilised within every Australian home resulting in maximal return to Australian Walnut producers.”

ASPIRATIONS

By 2020, the walnut industry will

- be an informed, innovative, profitable and environmentally sustainable industry
- produce and market quality walnuts that are enjoyable to eat to an educated consumer
- meet a strongly expanding market that reflects the recognition of the walnuts great flavour and health benefits

MISSION STATEMENT

The purpose of the Australian Walnut Industry Association is to represent a progressive and diversified Australian walnut industry, contribute to the industry sustainability and to ensure the production and marketing of high quality products to the consumer.

OBJECTIVES

1. Increase Profile of the Australian Walnut Industry and the Australian Walnut Products
2. Maximise Quality of Australian Products
3. Improving the quality of the distribution channels - Orchard to Consumer

KEY RESULT AREAS

1. Increased profitability for Australian producers.
2. Maximise quality of Australian Walnuts
3. Up to date production tools available
4. Transfer of industry research and development.
5. Well resourced industry structures
6. Vibrant and profitable walnut industry.

RATIONALE

The Australian Walnut Industry needs

- ✚ To develop the yield and quality of Australian walnuts equal to world standards and implement them throughout the supply chain
- ✚ To increase consumer awareness of the health benefits of walnuts,
- ✚ To adopt sustainable production systems;
- ✚ To maintain a strong industry association;
- ✚ To improve pest and disease management;
- ✚ To adopt and implement Best Practice Management in the Australian walnut industry;
- ✚ To develop and implement value adding and processing opportunities;
- ✚ To secure funding to support Australian Walnut Industry Association project investments.

OVERALL AUSTRALIAN WALNUT INDUSTRY KEY STRATEGIES AND ACTIONS

Strategy 1	MARKET OPPORTUNITIES
Actions	<ul style="list-style-type: none"> 1.1 Development of Domestic Markets 1.2 Expansion of International Markets 1.3 Expand the Value Adding opportunities 1.4 Quality Nuts to the Consumer 1.5 Accredited nuts in the market 1.6 Cooperative and Coordinated Marketing Strategy
Outputs	<ul style="list-style-type: none"> • Market strategy for prioritized markets based on ongoing market intelligence • Confidential information that supports the development of new market opportunities • Credible data packages for the industry to differentiate Australian walnuts • Consumer research data to guide product development • A range of new walnut products
Industry Outcomes	<ul style="list-style-type: none"> • Australia's share of the targeted export markets increases to accommodate the increase in walnut production. • Domestic consumption of Australian walnuts grows at 7% per annum • New and existing markets are developed for Australian walnuts • Customers have access to a range of new, high value products. • Customer confidence in Australian walnuts increased

Strategy 2	PRODUCT VALUE
Actions	2.1 Implement Industry Quality Parameters 2.2 Accredited Producers 2.3 Brand Recognition and Promotion 2.4 Quality Supply Chain Management
Outputs	<ul style="list-style-type: none"> • Information packages and educational materials • A quality certification program • Technologies to enable high moisture kernels (i.e. >7%) to be dried with no detriments to fruit quality • Technologies for measuring kernel moisture on-farm and prior to harvest
Industry Outcomes	<ul style="list-style-type: none"> • Health professionals and other key influencers promote walnuts as a part of a healthy diet. • Australian walnuts maintain their high quality reputation • Industry has adopted agreed minimum quality standards and consistent protocols for providing evidence that product meets specifications

Strategy 3.	EFFICIENT AND SUSTAINABLE PRODUCTION
Actions	3.1 Suitable Varieties and Rootstocks 3.2 Promoting Orchard Nutrition 3.3 Managing Climate Variability 3.4 Water Application and Availability 3.5 Pest and Disease Management 3.6 Nut harvesting and Storage 3.7 Efficient Production Costs 3.8 Best Practice Mechanisation
Outputs	<ul style="list-style-type: none"> • Best practice and technologies for: pollination, water use, pest and disease management and nutrition • Precision horticulture systems • One pass harvesting scoping study industry to assess feasibility • Processing review document and workshop • Best practice soil health management technologies • Report developed to assess walnut production in relation to potential climate variability and climate change scenarios • Review to evaluate alternate uses for processing waste, including financial assessment of alternatives • Alternative pollinators • Commercialisation plan developed for promising cultivars and rootstocks • Tree accreditation scheme developed • Rootstock and cultivar propagation protocols developed • A secure walnut germplasm repository
	<ul style="list-style-type: none"> • Australian walnut orchards remain highly productive:

Industry Outcomes	<ul style="list-style-type: none"> • Achieve industry average yield of 3.8 T/Ha (3 year rolling average) • Maintain costs of production at 2009/10 levels (i.e. \$3/kg) • Water use efficiency enhanced, as indicated by growers achieving a benchmark figure of at least 280 kg/ML. • Losses from pest and disease reduced • Pollination management becomes a minor risk to walnut production • Improved processing efficiency • Industry practices enhance promotion of soil biology • Australian walnut industry's carbon and environmental footprint reduced • The value of walnut husks and shells is increased to finance cracking costs • The walnut industry is provided with consistent supply of world leading virus-free rootstocks and varieties
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Strategy 4.	SUPPORTING OPERATING ENVIRONMENT
Actions	4.1 Effective Research and Development 4.2 Food Safety Programs 4.3 Effective relations with Government and Regulators 4.4 Strong Statistics Base 4.5 Industry Advocacy 4.6 Country of Origin Labelling 4.7 Effective Biosecurity
Outputs	<ul style="list-style-type: none"> • Strategic Plan for the Australian Walnut Industry • Project briefs for all priority strategies within each Objective • Evaluation Reviews of R & D Strategic Plan (Years 3 and 5) • A best practice management program illustrating the critical control points and guidelines for managing these risks across the entire supply chain for microbial contamination and management • Food safety simulation exercises with industry participation • Biosecurity manual for both the walnut industry and the pollination industry • Walnut industry biosecurity crises response management program encompassing both production and pollination • National beehive surveillance program (continued and enhanced) • National walnut exotic pest and disease surveillance and reporting network • Consistent, up-to-date protocols for testing imported prunus pollen, seed, budwood and trees for exotic and endemic pests and diseases • Simulation workshops for exotic beehive and diseases (enhanced and continued) • Industry statistics are up-to-date and readily available in a range of formats • Publications disseminating industry statistics

Industry Outcomes	<ul style="list-style-type: none">• The industry has a strong Strategic plan• The R & D projects commissioned achieve the Outputs• Food safety issues minimised• Australian walnuts maintain a positive food safety reputation• The walnut industry is protected from biosecurity threats.• If an incursion was to occur, damage is minimised
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Strategy 5.	TECHNOLOGY TRANSFER
Actions	5.1 Effective Extension and Technology Transfer 5.2 Best Practice Grower Groups 5.3 Effective Communication processes 5.4 Strong resource base – our members 5.5 Support to ALL growers – small and large
Outputs	<ul style="list-style-type: none"> • Extension publications, products and services, including fact sheets, field days, workshops and training sessions • Project updates included in newsletters • Final project reports available on the AWIA website • Regular survey of stakeholders to evaluate technology transfer • Analysis of technology transfer • Training programs for industry stakeholders • International study trips
Industry Outcomes	<ul style="list-style-type: none"> • High level uptake of. R & D outcomes by industry • Industry capacity is enhanced through increased skills development.

Strategy 6.	MANAGE THE INDUSTRY EFFECTIVELY
Actions	6.1 Strong and effective industry leadership 6.2 Well resourced Industry Organisation 6.3 Represent and Develop Biosecurity procedures for Industry 6.4 Strong Voice on Industry Issues 6.5 Collaboration with other like Industries 6.6 Legal and regulatory compliance
Outputs	<ul style="list-style-type: none"> • Communication initiatives including website updates and e-newsletters • Annual communication effectiveness survey • Decision making across all areas of the walnut supply chain are supported through access to timely and relevant information
Industry Outcomes	<ul style="list-style-type: none"> • Proportion of stakeholders accessing the AWIA's website increases • All stakeholders across the value chain are informed and engaged • The environment to pursue sustainable, profitable walnut farming in Australia • A well informed consumer willing to purchase high quality Australian walnuts.

APPENDIX A: RESULTS FROM AWIA STRATEGIC PLANNING

(Material developed from the industry planning session conducted on the 15th June 2015)

VISION:

To ensure that sustainably produced Australian Walnuts are utilised within every Australian home resulting in maximal return to Australian Walnut producers.

OBJECTIVES:

1. Increase Profile of the Australian Walnut Industry and the Australian Walnut Products
2. Maximise Quality of Australian Products
3. Improving the quality of the distribution channels - Orchard to Consumer

Brainstorming stage of strategic planning meeting

STRATEGIES:

1. MARKETS/MARKETING

The Australian Walnut industry will

- Develop and implement an orderly marketing plan
- Investigate and open new export markets
- Increase the consumption of Australian quality walnuts in the domestic market
- Ensure the industry marketing program is effective for the smallest producer to the largest producer
- Support the development of other methods of production including organic production.
- Investigate and detail current and potential value add opportunities including walnut oil and walnut milk.
- Develop and implement a program that builds consumer awareness of Walnuts
- Market the 'Australian Walnut Industry' as a total package
- Actively promote the 'Taste' of Australian Walnuts
- Implement a program to ensure that Australian walnuts are on the 'Must Buy list' for all consumers
- Maintain and expand the program that promotes the health benefits of Walnuts
- Ensure that there are appropriate programs to promote both 'In Shell' and Kernel
- Ensure each and every program returns appropriate financial benefit to ALL growers.
- Promote the appropriate labelling of Australian Walnuts
- Promote the utilisation of an effective Country of Origin labelling program to better identify imported walnuts.
- Develop and utilise an Australian Walnut Market Brand to promote high quality Australian Walnuts.
- Investigate and define each of the domestic channels for Australian Walnuts
 - Wholesale markets
 - Farmers Markets
 - Farm gate sales
 - Retailers
 - Food production – restaurants
 - Others
- Support the introduction of Free Trade Agreements that benefit the export of Australian Walnuts by reducing tariffs and other trade barriers.
- Review current and future varieties to ensure the best varieties are grown suited to climatic zones to maximise the high quality and taste of Australian Walnuts.
- Promote the right varieties at the right time of the consumption cycle.

2. **Pests& Diseases**

The Australian Walnut Industry will

- Establish the appropriate programs to ensure tree health and vigour.
- Maintain research programs to maximise the control and management of Walnut Blight and Black Spot
- Establish and promote the implementation of Crop Protection programs for each of the endemic and exotic Walnut pests and diseases
- Ensures a full suite of Chemicals are available for use by producers
- Prepare industry programs for the management of vertebrate pests including Birds and Deer
- Ensure the support of local Communities to assist in the management of pests and diseases
- Ensure access to appropriate control methods including the use of guns, drones, lasers and gas guns.
- Establish industry programs that can be utilised to manage frost.
- Investigate pest and disease warning systems for implantation by growers
- Undertake research on the trigger points eg., dew point, for pests and diseases

3. **INDUSTRY STRUCTURE**

The Australian Walnut Industry will

- Assist in the expansion of the industry and individual producers to increase production.
- Encourage cooperative programs to produce effective and viable larger scale Orchard developments
- Ensure the maintenance of a Peak Industry organisation that can undertake leadership for and on behalf of ALL producers.
- Implement structures, programs and processes that are balanced and accessible to ALL producers – small, medium and large.
- Undertake a proactive advocacy role to the benefit of all producers
- Ensure the maintenance of a Peak Industry organisation that has the capacity - financial and people resources to implement all required programs/projects.
- Maintain a process of access to all levels of Government both as a standalone organisation and/or in collaboration with other industries through organisations like ANIC and the Voice of Horticulture.
- Maintain a structure that can determine and fund appropriate industry research and development.
- Maintain a structure that can lead industry extension and technology transfer.
- Ensure the Peak Industry structure is inclusive across all growing regions within Australia

4. **QUALITY**

The Australian Walnut Industry will

- Develop and implement a Coordination program that promotes High Quality Australian Walnuts
- Establish the optimum storage regimes and implement these within ALL storage facilities
- Undertake the appropriate research and development programs to improve nut quality.
- Implement an effective extension (technology transfer) program to distribute quality parameter information to producers
- Implement a program to determine how the nut quality changes after leaving the farm gate
- Implement a program to determine the changes in the nut across the Supply Chain including the wholesale market, transport and retailers.
- Present industry data on Cool Storage and other storage solutions that reduce product deterioration to the industry and develop a process of industry implementation

- Investigate current and new forms of packaging, including vacuum packaging, to maintain the quality of the nuts during the supply chain.
- Investigate the effect of nut temperature on quality and water loss from within the kernel.

5. COSTS

The Australian Walnut Industry will

- Assist ALL producers to profitability and viability through a benchmarking program that details production costs.
- Investigate the value adding opportunities for walnuts including utilising the timber.

6. CLIMATE

The Australian Walnut Industry will

- Monitor the climate changes including any natural disasters to consider the need to modify any production procedures and/or programs
- Develop and maintain up to date management program to deal with Climate Change, natural disasters and other industry crises.

7. VARIETIES/ ROOTSTOCKS

The Australian Walnut Industry will

- Work with researchers to achieve an effective and cost efficient production of trees and/or rootstocks through tissue culture
- Establish a program for the production of Paradox rootstocks
- Investigate and trial new walnut varieties

8. R & D

The Australian Walnut Industry will

- Collaborate where appropriate in undertaking agreed research and development
- Maintain an effective program of industry based extension and technology transfer
- Undertake market research and development to assist in the facilitation and maintenance of Trade
- Establish appropriate funding programs to be used to initiate walnut industry research and development for ALL walnut producers.
- Maintain linkages with relevant RDC's including HIAL and RIRDC
- Ensure all industry research and development is available to those growers funding the programs/projects.
- Establish self help Best Practice grower groups – 'WIT – Walnut Information Technology Groups'.

9. PRODUCTION:

The Australian Walnut Industry will

- Ensure appropriate labour programs are accessible to producers and that the producers understand their obligations.
- Develop quality parameters as they relate to optimum crop harvesting
- Access information and equipment to assist the improvement of harvest
- **Develop information packages for producers to utilise to inform Neighbours of production programs that might occur at different times that might create an inconvenience.**
- Work to minimise regulatory restrictions that add unnecessary and burdensome cost to production, harvesting and marketing
- Establish industry benchmarks for the relevant production cost.
- Implement programs to ensure that the production of accredited nursery trees to meet industry needs.

- Develop new programs that assist in the implementation of orchard and harvest mechanisation
- Implement a program of reviewing tree structure and designing new tree structures that improve yield and reduce growing inputs and improves harvest.
- Define the stages of nut development and how orchard management practices effect the development. Utilising that develop a program for implementation by growers.
- Implement a program of tree training, pruning and maintenance including consideration of tree heading and mechanical pruning.
- Establish an industry based germplasm repository that includes walnut rootstocks and varieties
- Implement a review of walnut varieties in relation to quality, taste and visual appearance of the nut and the kernel
- Establish and implement a program of accredited Australian walnut producers
- Implement the Quality Parameters Manual through industry training and the utilisation of the parameters as part of an accredited grower/quality program
- Implement a program that seeks to ensure Uniformity of production and quality of high quality Australian Walnuts
- Implement a technical advisor program that ensures producers harvest nuts at the optimum times

IRRIGATION

- Develop the optimum crop requirements of water at the appropriate times of tree growth and nut development to maximise yield
- Detail the necessary water monitoring systems available to producers and encourage the utilisation of such systems.
- Promote the utilisation of Stem Water Potential as a tool to assist appropriate irrigation

WATER AVAILABILITY

- Determine the appropriate and optimum Water requirements for Walnut production
- Monitor regional water restrictions and assist producers to achieve maximum entitlements
- Lobby for permanent plantings have ongoing water security
- Lobby for ALL producers to have access to the required amount of water to take annual production through to harvest.
- Maintain an understanding of national, state and regional water plans/programs to advise growers.

NUTRITION

- Develop the optimum nutritional crop requirements at the appropriate times of tree growth and nut development to maximise yield.

CHEMICALS

- Establish a program of working with chemical companies and the regulators to ensure the appropriate chemicals are accessible to all producers.
- Maintain and fund the necessary requirements to maintain the current Minor Use permits and/or working towards full label inclusion
- Ensure that the Australian Walnut Industry is represented at the annual AgVet Collaborative Forum to ensure the industry's chemical needs are prioritised.
- Ensure the most cost effective chemicals are available to ALL producers.

10. EXPORT

The Australian Walnut Industry will

- Support the ongoing maintenance and development of FTA to benefit Australian Walnut production
- Coordinate the export of high quality Australian Walnuts
- Maintain information on all potential export Markets
- Make available relevant export market information to the Australian Walnut producers.

11. IMPORTS

The Australian Walnut Industry will

- Support the implementation of practical and truthful Country of Origin Labelling

12. BIOSECURITY

The Australian Walnut Industry will

- Maintain membership with Plant Health Australia
- Continue to be a signatory to the Emergency Plant Pest Response Deed
- Review implementation of an EPPR Levy to fund industry biosecurity programs.
- Maintain appropriate biosecurity 'tools' including an on-farm biosecurity program and owner reimbursement cost figures.

13. STATISTICS

The Australian Walnut Industry will

- Collect and supply data to producers on the production and sale of walnuts across the supply chain
- Collect and supply data on the potential (or not) for industry growth through consumer demand.
- Collect and maintain industry information and data and present to industry at appropriate times.
- Undertake a program of market sampling to monitor the nut quality available to the consumer

APPENDIX F: **December 2015 e-newsletter.**

The Kernel



Australian Walnut Industry Newsletter

PLANT HEALTH AUSTRALIA MEETINGS

The following is a report from the round of Plant Health Australia meetings held on the 24th and 25th November 2015.

Trevor Ranford, Technical Communications Officer with the Australian Walnut Industry Association attended and represented the Walnut Industry at the meetings.

Trevor Ranford, as a member of the PHA Industry Members forum executive committee, also attended a meeting with the new Secretary of the Department of Agriculture and Water Resources, Daryl Quinlivan and other senior staff members involved with components of biosecurity. The DAWR representatives showed a strong desire to develop an open, transparent consultation process with industry.

Discussions we held in relation to the implementation of the Chestnut EPPR levy and there is an expectation that the levy will be in place by the 1st January 2016.

Joint Industry Forum: 24th November

The third Plant Health Australia-Animal Health Australia Joint Industry Forum was held on 24 November at Eastlake Football Club, Canberra.

The audience was briefed by the joint chairs, Kevin Shiell and Matt Kealley, on meetings held early in the day with the Secretary of the Department of Agriculture and Water Resources (DAWR), Daryl Quinlivan. They were also updated on the Biosecurity Act 2015, activities of the National Biosecurity Committee Weeds Taskforce, progress on plant and animal biosecurity RD&E strategies, and recent changes to the EPPR levy arrangements for industries to meet deed requirements. The latest two videos produced by the Farm Biosecurity Program were also launched at the forum (see article below).

PHA members meetings: 25th November

On 25 November, PHA held a series of meetings for members: the Plant Industry Forum, an Emergency Plant Pest Response Deed (EPPRD) signatories meeting, and the 15th Annual General Meeting.

Plant Industry Forum

Led by the chair Matt Kealley, industry members discussed the PHA-AHA Joint Industry Forum held on the previous day, PHA's engagement with non-signatories and non-signatory attendance at meetings.

Greg Fraser, Executive Director and CEO of PHA, gave an overview of activities in the area of fruit flies, and an update on the selection process used to identify new PHA directors.

Sarah Hilton from DAWR, on behalf of Plant Health Committee, discussed the process of prioritising pests, including criteria that could be used to prioritise pests; projects (by CSIRO and CEBRA) underway to develop a detailed prioritisation model; identification of 30 interim national priority pests until a model(s) is finalised and endorsed; and seeking advice from the industry members present about how they would like to participate in the process.

Tony Callan, also from DAWR, talked about the current Rapid Response Team purpose, funding, and governance, going on to say that there was an opportunity to review its purpose and structure to generate a cross-sectoral Rapid Response Team. A proposal for such a team could be put before the National Biosecurity Committee for consideration.

EPPRD signatories meeting

Dr Susanna Driessen, General Manager Emergency Response and Preparedness at PHA, guided discussions on EPPRD related matters, including proposed changes to PLANTPLAN and supporting documentation.

Members voted to admit the Australian Melon Association as a new signatory to the EPPRD, and Sallianne Faulkner signed the Emergency Plant Pest Response Deed on behalf of Hazelnut Growers of Australia.

Fiona Macbeth from Blackwood and Kemp Pty Ltd, an independent contractor undertaking the 5-year review of the EPPRD, facilitated a workshop on the purpose, methodology and key findings from the EPPRD review, which commenced in August 2015. The workshop highlighted areas of concern related to the Consultative Committee on Emergency Plant Pests and the National Management Group, maintaining corporate knowledge of the EPPRD within their organisations, the development of a response plan and its management, cost-benefit analysis, the principles of cost-sharing and funding a response, and financial management and accounting.

Members were reminded about Biosecurity Online Training (BOLT) modules on the PHA site, including a new module about the Consultative Committee for Emergency Plant Pests and the National Management Group.

15th Annual General Meeting

The gathering ended with the 15th Annual General Meeting of members, which included the presentation of the Plant Health Australia Annual Report 2015; progress towards meeting objectives in the 2015-16 Annual Operational Plan; the budget forecast for 2015-16; the Chairman's Address; and the appointment of new directors.

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December 2015

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AWIA UPDATES:

APPOINTMENT OF INDUSTRY DEVELOPMENT OFFICER

I am pleased to announce that Trevor Ranford commenced as AWIA's Industry Development Officer (IDO) on the 1st December 2015 and will continue in this role until 31st December 2016.

Trevor has worked tirelessly for AWIA over many years, most recently as the Technical Communications Officer. He brings a wealth of experience and energy to the Australian walnut industry and AWIA is fortunate that he remains committed to the industry.

Trevor will be kept busy over the next 13 months finalising AWIA's strategic plan, developing and implementing a R&D strategy and producing technical fact sheets on walnut pests and diseases and best practice walnut production and storage methods. Trevor will also help develop farm walks and seminars, and on behalf of the AWIA continue to liaise with government departments and industry associations and groups.

Please take time to congratulate Trevor on his new role and to thank him for his continued support to the walnut industry.

Michael Lang
Acting AWIA President,
4 December 2015

LOCUST BULLETIN

The Locust Bulletin for December 2015 is available on the Department of Agriculture website at:

<http://www.agriculture.gov.au/pests-diseases-weeds/locusts/bulletins>

LAUNCH OF NEW FARM BIOSECURITY VIDEOS

The latest two videos produced by the Farm Biosecurity Program in the 'biosecurity essentials' series were launched at the PHA-AHA Joint Industry Forum on 24 November.

One of the videos is on the importance of training staff, biosecurity planning and keeping records. The other is about the biosecurity risks associated with feral or wild animals and weeds. They feature crop and livestock producers who use simple steps to improve biosecurity in their day-to-day activities. The most recent videos add to the information included in four earlier ones that highlighted the importance of managing the biosecurity risks associated with people, vehicles and equipment, and moving anything on or off a property.

PHA's National Manager, Horticultural Cropping, Alison Saunders, talked about ways in which the resources produced by the program can be used by industry groups to assist their members to implement biosecurity on-farm. She encouraged industries to use both the videos and the Farm Biosecurity Action Planner during training sessions with their members to create tailored plans to implement biosecurity on-farm.

The activities of the Farm Biosecurity Program for the next few months were previewed, including advertising the availability of the videos, filming footage for the final video in the series, and the release of an app.

The Farm Biosecurity Program is run by Plant Health Australia and Animal Health Australia. Practical advice and information to assist producers to implement biosecurity on-farm - including a monthly e-newsletter, videos, biosecurity manuals and templates for records - is available through the program website.

To view the videos go to www.farmbiosecurity.com.au/ videos or the [FarmBiosecurity YouTube channel](#).

FOOD SAFETY REMINDER

Is that a bearded dragon in your pocket or are you just happy to see me?

Inspectors and investigators have the best stories and FDAs move over the past few years to post warning letters is a goldmine for food safety stories. Like the one Gregory Banes of Gold State Nut LLC received earlier this month. According to the letter, Banes was tugging the skin of a bearded dragon in his office during an FDA visit. And then he went to touch some nuts.

Three of 100 environmental swabs we collected from your facility yielded Salmonella. One of the swabs was taken from a cross-beam directly above the belt where all shelled walnuts exit the shell cracker. Our investigators observed debris falling from this cross-beam directly onto the belt below where walnuts exit the cracker during operation. All cracked walnuts pass under this cross-beam.

Two swabs collected from the inside of the reptile enclosure in your office yielded Salmonella. During an interview in your office located within the packing facility, our investigators observed you holding a bearded dragon reptile and peeling off its skin with your bare hands. Following this interview, you were seen touching shelled walnut meats with your bare hands, without first washing your hands. Reptiles are known reservoirs for Salmonella.



Beyond the dragon handling, the company had lots of risk issues including a lack of hand washing tools, and cross-contamination potential.

ACKNOWLEDGEMENT:

Blog posted on December 1, 2015 by Ben Chapman

OVERSEAS NEWS:

Chile edges closer to exporting nectarines and in-shell walnuts to China



Chilean agriculture industry representatives recently carried out a successful trade mission to China, advancing the negotiations to allow exports of nectarines and in-shell walnuts.

On the trip were Chilean Agricultural Attaché in China, Carlos Parra, and Chilean Fruit Exporters' Association (Asoex) general manager, Miguel Canala-Echeverría.

The delegates held various meetings with representatives of China's General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ).

"The tour in China was very productive, and in the first week of January next year we will receive three AQSIQ inspectors to continue progress with the nectarine negotiations," Chile's National Agriculture and Livestock Service (SAG) director Ángel Sartori said.

"We hope that after this visit we can agree on protocols to open to Chinese market for Chilean nectarines as soon as possible."

He added a preliminary pest risk analysis (PRA) had already been concluded for the stonefruit.

Canala-Echeverría also said China would soon expand the protocols for walnut imports to allow shipments of in-shell walnuts. He said this would likely happen 'within the coming weeks'.

"This is very big and positive news for the tree nut sector," Sartori said.

"In-shell walnuts are going to be incorporated into the same protocol already in place for shelled walnuts."

Photo: www.shutterstock.com
www.freshfruitportal.com

Walnuts and prunes from Chile have UK niches in sight

Chile is getting in on the worldwide snacking boom with increasing supplies of walnuts and prunes to satisfy health-conscious consumers. Produce Business UK catches up with Andrés Rodríguez, chairman of both the Chilean Walnut Commission and the Chile Prunes Association to learn about the outlook for the UK market.

No doubt about it, prospects for Chile's walnut growers are bright. The country is the third-largest exporter of walnuts behind the giants of the US and Turkey, but production is growing exponentially and now tops 60,000 tonnes a year.

Produced mainly in central Chile, in the Metropolitan, 5th and 6th regions, output is also on the rise further south. "This year we have reached close to 40,000ha of walnuts," says Rodríguez. "We have been growing close to 3,000 new hectares every year."



Andrés Rodríguez

Global market scenario

The harvest in the South American country runs from March to April and the product is processed and exported year-round in-shell, hand-cracked and machine-cracked. And as with other sendings from Chile, although the Asian markets are growing, other destinations such as the Middle East and the UK, plus the wider European continent are also important.

"The walnut market in the UK is continuously growing," says Rodríguez. "Exports of Chilean walnuts to the UK are very small, but the UK is a big market and Chile is constantly increasing production, so for Chile diversifying markets is always an opportunity."



Snack supplies: walnuts and prunes from Chile

UK buyer appeal

India, China, France and the US all supply the UK and compete with Chilean product, but Rodríguez feels there is a clear advantage for UK buyers in sourcing the Latin American nuts, which benefit from their own [quality standard](#).

"Chilean walnuts have a light colour, a great flavour and long shelf life. I think Chile can supply a niche market that is seeking the highest quality walnuts. Chile is the country that is growing fastest in walnut production, so every day it is becoming more important in the world scenario. Today, Chile is the third-largest exporter and soon it will be the second-largest exporter of walnuts. We are in counter season to the northern hemisphere so that also makes Chile a great opportunity for the UK market."

As a healthy product that's high in antioxidants and Omega 3 there are great opportunities for Chilean walnuts to compete in the UK - a marketplace well-known for being keen on snacking.

ACKNOWLEDGEMENT: by Kathy Hammond

A WALNUT PRODUCTION RECORD THIS YEAR IN CALIFORNIA?



Depending on the walnut-growing region of the state, California walnut growers this year have reported either an early or average start of the harvest season.

Despite the drought and low chill hours, the U.S. Department of Agriculture is forecasting a record California walnut harvest of 575,000 tons statewide, up 1 percent from last year's estimated 570,000-ton harvest.

Although most growers have completed the bulk of their harvest, it may be awhile before the industry knows whether a new record was achieved. Some growers point to the variability among orchards and varieties as reasons why the crop may come up short of a record.

Jake Wenger grows walnuts near Modesto, Calif. He says once the trees lose the leaves that he'll have a better idea how many nuts remain on the trees and whether he needs to re-shake. So far, he believes the crop size looks similar to last years.

"I think most growers are close to where they were last year," Wenger said. "For us, we're just a hair off."

Although blight was not much of an issue this season, Wenger says Navel orangeworm (NOW) caused significant damage to the Vina walnut variety.

"For whatever reason, it seems like Vina had a lot of Navel orangeworm."

Brent Barton, a walnut grower involved with the family-owned GoldRiver Orchards processing facility in Escalon, believes his yields will be down slightly.

"We're seeing a crop a little bit below normal quality with higher than normal mold," Barton said.

"The kernel and color are variable. There's been some with good color and nuts which are darker. It has varied by the variety, harvest date, and the field."

Farming near Merced is Bert Crane who says it's too early to determine the statewide yield. He is waiting for scale tickets from his handlers to determine his yield. Crane sees a trend toward fewer jumbo-sized nuts.

On one ranch with mature trees, for example, Crane says the second pick yielded 71 percent jumbo, 11 percent large, 4 percent medium, and 8 percent 'babies'. Historically, the orchard has yielded jumbos in the 80 percent range.

Walnut grower Dan Cummings located near Chico is more optimistic.

"Generally, I think walnut yields are better than last year. The edible meat yields and color are better. The nut sizes are smaller and the jumbo count is not as great as the last several years."

During most years, Cummings says bloom toward the end of pollination does not set a crop. But this year favorable conditions occurred throughout the entire blossom period. Even the later blooms set nuts.

Cummings, who also grows almonds, says almond growers have reported wide yield variations across California based on orchard locations. He does not believe walnut yields experienced as wide of swings.

Cummings believes the USDA walnut estimate is close to accurate.

As of the last day of the 2014-15 marketing season (Aug. 31), walnut handlers reported receipts totaling about 562.5 million pounds, just short of last year's USDA objective estimate (570 million pounds)

U.S. exports of shelled walnuts for the 2014-2015 season (Sept. 1, 2014 -Aug. 31, 2015) was 31 percent higher, compared to the 2013-2014 season - reaching 529 million inshell equivalent pounds, according to the California Walnut Board.

Of the total shipments, about 333 million inshell equivalent pounds were exported while nearly 200 million pounds were sold domestically.

Although the 2015-2016 marketing year has just begun, many growers expect walnut prices to fall.

Wenger said, "What I've been hearing suggests that walnut prices could be lower - perhaps around \$1.25 per pound for Chandlers which is down significantly from last year."

He added, "It's still early to say but I think everyone can expect a pretty big drop off from last year. Last year's prices were astronomical."

Barton agrees, and sees long-term opportunities for walnuts. He points to increasing walnut demand by consumers. Research suggests that walnuts are a 'super food.'

On the price side, Barton said, "There's a new reality beginning to set in with grower prices. Prices are down now compared to two months ago so we expect the farm gate value to drop considerably.

"We're no doubt in a correction right now," he concluded.

India Sees Increase in Importation of California Walnuts



In 2013-14, India imported 42,000 pounds of walnut kernels from California. This number increased to 84,500 pounds of kernels in the 2014-15 crop year. (Morguefile.com photo)

MODESTO - Kashmiri and Californian walnuts can co-exist in the booming Indian market with American growers of the healthy dry fruit eyeing it in a big way after exports to the traditionally strong Chinese market dropped amid a slowdown in the world's second-largest economy.

"We are excited about the Indian market and feel it holds great potential for our industry," Dennis A. Balint, CEO of California Walnut Commission, said.

"What is most encouraging is that India has a tradition of walnut consumption," Balint, also the executive director of the California Walnut Board, told PTI here.

"Shipments of California walnuts to India for the 2013-14 crop year, our first year with market access, was about 310,000 in-shell pounds and 42,000 pounds of kernels," Jennifer Williams, CWC's international assistant marketing director, said.

Last year, the 2014-15 crop year saw shipments increase quite a bit with 5.2 million pounds of in-shell walnuts going to India and 84,500 pounds of kernels.

"We feel the India market will continue to grow as the message of California quality spreads and the health messages continue to gain popularity," she said.

"In-shell exports of walnuts to India have been significant," CWC's international senior marketing director Michelle McNeil said. At the same time, she said the export of shelled walnuts to India was still small but had long term potential.

Asked about concerns expressed by Indian walnut growers on the entry of American walnuts into the domestic market, McNeil said: "There is scope for both as the market is huge."

She said CWC's efforts are to make available to Indian consumers high-quality California walnuts all year round.

McNeil said the CWC was confident that the Indian bakery, confectionery and ice cream industries would readily accept Californian walnuts that are produced, processed and packed in state-of-the-art facilities in California.

"We know that the Indian consumer wants walnuts from California," she said. "We will promote the California brand, along with our reputation for food safety and reliability," she said, adding that the CWC is currently working with doctors and nutritionists on the health benefits of consuming walnuts.

The California walnut industry is made up of over 4,000 walnut growers and 93 walnut handlers/processors.

In 2013, India allowed the import of walnuts from the United States, provided that American shippers provide additional declarations and meet special fumigation conditions. Walnuts are imported into India without quantitative restrictions under the Open General License program. Imports are subject to an effective import duty of 30.9 percent.

Jammu and Kashmir Horticulture Minister A.R. Veeri recently told PTI that the walnut sector in the state, the main producer in India, was facing problems because of the arrival of American kernels in the market.

"There is less import duty on those kernels, so they are available in the market abundantly, and people buy them, as their rates are low. Those kernels are being packaged in such a way that they look of good quality; otherwise they do not taste like Kashmiri walnuts, which are the best," he said.

"We are hopeful of some change at the central level. There should be an increase in the import duty of the American kernels. I have taken the matter up with the Chief Minister, and he has also raised the issue with the Union Finance Minister."

In India, major processing facilities for shelling and packing walnuts are located in the state of Jammu and Kashmir.

"We are hopeful of some steps being taken to save the Kashmiri walnut," Veeri said.

Meanwhile, walnut exports to China, the largest producer and consumer of walnuts in the world, has dipped slightly. Tree nut imports are expected to fall in the wake of China's economic slowdown, the U.S. Department of Agriculture said.

According to CWC statistics, shipments of California walnuts to China did see a slight dip in the 2014-15 crop year compared to the previous crop year. The Chinese crop, according to the International Nut and Dried Fruit Council, saw an increase and may be a contributing factor. It has predicted that the 2015-16 Chinese crop will be at about 540,000 metric tons, an increase of less than 2 percent.

According to the USDA, Indian walnut production is forecasted at 38,000 MT (in-shell basis), a 12 percent decrease from the previous year. Walnut imports could increase given lower local production and increasing consumption.

Indian walnut production is expected to reach 38,000 MT (in-shell basis) in the marketing year 2014-15, down 12 percent from the previous year. Typically, the walnut harvest runs from the end of August through September, with market arrivals peaking in late October.

Indian walnuts are cyclical in terms of production, with yields varying from 5 to 20 percent depending on the prevailing weather.

The production estimate for the marketing year 2013-14 has been revised up to 8 percent to reflect the latest estimates. Long gestation periods, poor orchard management, and uneven yields (estimated at 18-50 kg/tree/year with nut sizes varying from 24-32 mm) keep walnut production relatively stagnant, the latest USDA report said.

Indian walnut consumption in the marketing year 2014-15 is expected to grow 8 percent to 28,000 MT due to stable supplies and strong domestic demand. Presently, an estimated 50 to 60 percent of Indian walnut supplies are consumed domestically, of which nearly half are consumed during the festive season.

Industry sources quoted in the USDA report estimate that upwards of 10 percent of domestic consumption is by the bakery, confectionery and ice cream industries.

A growing awareness of the health benefits associated with eating walnuts (like reducing cholesterol) has encouraged higher consumption, particularly in the form of snacking in India, Carol Berg Sloan, CWC's registered dietitian and consultant, said.

Walnuts are an excellent source of anti-inflammatory omega-3 essential fatty acids, in the form of alpha-linolenic acid. Walnuts are also rich in antioxidants, including being a very good source of manganese and copper, she said.

The wider usage of attractive consumer packaging (vacuum packs) is improving the shelf life and quality of walnuts and has also encouraged year-round consumption, as ready-to-eat snacks are more broadly available.

The increased usage of walnuts as an ingredient for bakery and confectionery products is also supporting consumption growth.

Meanwhile, India exported 2,665.87 MT of walnuts worth Rs. 136.45 crores during the year 2014-15, according to figures from the Agricultural and Processed Food Products Export Development Authority.

Major export destinations during 2014-15 included Vietnam, the U.K., U.S., Egypt and the Netherlands.

NEWS SNIPPETS FROM AROUND THE WORLD

SECURITY OF YOUR NUTS?

[Sophisticated robbery ring alarms California nut brokers, handlers](#)

SecurityInfoWatch

He noted that tree nuts are extremely valuable - a single truckload of walnuts, for example, might be worth anywhere from \$80,000 to \$140,000.

WALNUT LIQUEUR

[Walnut Liqueur: Introducing Nocino, The Delicious Italian Drink](#)

NDTV

Walnut Liqueur: Introducing Nocino, The Delicious Italian Drink The holidays are shot through with nuts. We stuff them inside our turkeys, cookies and...

HEALTH BENEFITS

Walnuts Have Fewer Calories than the Label Suggests, ARS Researcher Discovers



U.S. Department of Agriculture (USDA) scientists have found that walnuts have fewer calories than previously thought. Studies also show that eating tree nuts, as part of a healthy diet, can lead to improved cardiovascular health and a reduced risk of obesity.

USDA scientists have found that walnuts have 21 percent fewer calories than previously thought, which is good news for the weight-conscious nut lover!

Researchers with USDA's Agricultural Research Service fed volunteers a controlled diet consisting of walnut halves and pieces (45 grams) for three weeks. After measuring the calories in the walnuts consumed, they found that a typical 28-gram serving actually contains 146 calories, 21 percent fewer than the 185 calories currently assigned by the USDA. The study, published this month in *The Journal of Nutrition*, was partially funded by the California Walnut Commission.

"The results show that when you can tease out the calories, or the amount of energy, actually absorbed from eating walnuts, the nut is delivering significantly fewer calories than thought," said David Baer, the research physiologist with the ARS Beltsville

Human Nutrition Laboratory who led the study. He added that the findings are consistent with recent studies showing that eating walnuts and other types of tree nuts, as part of a healthy diet, can lead to improved cardiovascular health and a reduced risk of obesity.

The discrepancy found by the researchers could be attributed to evolving methods for calculating calories in foods. Calorie levels listed on labels for walnuts and other tree nuts are based on methods developed in the early 1900s. Scientists in the 1950s grouped walnuts and other tree nuts with other plant-based foods, such as dry beans, legumes and peas, and estimated that each gram of protein or carbohydrate in those foods contained an average of 4 calories of energy, while each gram of fat contained an average of 9 calories.

Baer said the system can work well for estimating calories in mixed diets involving several foods, but not so well for estimating specific calories for certain foods individually, such as tree nuts. Few studies over the years have focused on how individual foods are absorbed by the body, and little scientific data has been collected on tree nuts, he said.

During the past decade, Baer and other researchers have shown that with certain tree nuts, fewer calories are absorbed by the body than the calories contained in other foods. Baer found previously that the number of calories in almonds was 20% less than the standard used for labeling. For pistachios, it was 5% less.

Further studies are needed, but the differences between the calorie levels found in those study results and what appears on the labels could indicate that people don't completely chew nuts before swallowing them or that it is difficult to fully digest the nut's cell walls, Baer said.

"We're just beginning to understand how many foods are absorbed by the body, and nuts are one of the foods now attracting increasing interest," he said.

ACKNOWLEDGEMENT: Posted by Dennis O'Brien, ARS Public Affairs Specialist, on December 3, 2015

PMA A-NZ PRODUCE EXECUTIVE PROGRAM

April 17th - 22nd

JOIN US AT:

Mt Eliza Executive Education Campus, Victoria

The 2016 PMA A-NZ Produce Executive Program is now available. PEP is a personal and professional development opportunity for top leaders and key decision makers in the Australian and New Zealand produce industry.

A mix of skill enhancement, industry forum and practical application of learning, PEP provides a rare opportunity to access knowledge and insights across the supply chain by networking with industry peers and through interactive discussions with industry leaders.

This year's guest speakers come from Coles, Woolworths, Harris Farm Markets, Bidvest, Monsanto, Costa Group, Fresh Select and Perfection Fresh.

Early Bird Offer:

Register by the 30th of December to receive 10% off the registration fee.



TECHNICAL REPORT

Free UC drought advice for managing almonds, walnuts, other crops



Drought strategies for managing almonds, walnuts, and other crops are available free from University of California (UC) Agriculture and Natural Resources (UC ANR).

The new and updated tips were developed by UC ANR scientists and funded by the California Department of Water Resources.

"The information in these tips will be of practical use for growers and other water-related stakeholders now and into the future as our agricultural community continues to adapt to climate variability and to a changing water supply situation," said Daniele Zaccaria, UC ANR Cooperative Extension agricultural water management specialist.

Doug Parker director of UC ANR's California Institute for Water Resources says even if El Nino brings rain this fall that water scarcity will continue to impact California farmers.

"As climate change continues to reduce the average annual snowpack, it is likely that droughts in California will become more frequent and severe in the years to come," Parker said.

The online drought tips currently available for free download are located at <http://ucanr.edu/drought-tips>. The tips focus on almonds and walnuts, management strategies for alfalfa, use of shallow groundwater for crop production, fog contribution to crop water use, and reclaiming saline, sodic, and saline-sodic soils.

Several more drought tips for dozens of commodities and situations will be published and posted online soon.

Should those El Nino storms arrive, users of computers and mobile devices can also come in out of the rain or snow to watch a series of videos featuring water experts from UC and other agencies and institutions.

They can be accessed [here](#).

The tips on drought management for California almonds came from David Doll, UC Cooperative Extension farm advisor for Merced County, and Kenneth Shackel, professor with the Department of Plant Sciences at UC Davis.

Those on strategies for walnut production are from Alan Fulton, UC Cooperative Extension irrigation and water resources farm advisor for Tehama, Glenn, Colusa, and Shasta Counties; and Richard Buchner, UC Cooperative Extension orchard farm advisor for Tehama County.

The tips on drought strategies for walnut production include the observation that precision irrigation technology has allowed planting at locations previously thought to be unsuitable for walnut production and that successful California walnut production depends on irrigation.

Walnut trees that produce economical yields with good kernel quality require about 40 to 42 inches of water annually. Most of the water is transpired through the leaves, while some is lost through evaporation from the soil surface.

Fulton and Buchner say that leaves trade water for carbon under full sun to make carbohydrates, the raw material for tree growth and fruit development. Maximum carbohydrate production occurs in leaves exposed to full sunlight with an adequate water supply.

If transpiration is limited by the lack of water, then photosynthesis declines which compromises tree growth, walnut yield, and nut quality.

Regulated deficit irrigation strategies, which withhold water at specific growth stages, have not proven to be as effective in walnuts as in other perennial crops such as almonds, pistachios, prunes, wine grapes, or olives for oil.

In walnuts, water curtailments at any growth stage can affect crop production and quality.

A new experiment is ongoing in a Chandler orchard in Tehama County. This experiment is designed to evaluate withholding irrigation water from pollination through the spring period of rapid shoot growth and external nut sizing.

In the first season, the initial irrigation was delayed as much as 50 days and total applied water was reduced to 24 inches. Yield was not immediately affected, but the nut size was reduced by 10 percent in the most extreme cutbacks.

If water is applied to satisfy 100 percent of evapotranspiration demands, irrigation should be managed to prevent the measured plant available soil moisture from dropping below 50 percent in a root zone of approximately five feet.

A 10 to 20 percent reduction in irrigation water supply to walnuts equals to a shortfall of 4 to 8 inches. To minimize impacts on walnut production, Fulton and Buchner recommend gradually withholding water and allowing slightly more crop stress during kernel development, nut maturity, harvest, and postharvest.

The researchers say the production history of each orchard should be evaluated, along with the cost of production. The goal is to identify orchards that consistently produce higher yields of large, sound walnuts per acre foot of water, and other production inputs.

Decisions would then be made to prioritize limited water supplies to the more efficient orchards to sustain production.

Research has shown that almond trees are able to survive on as little as 7.6 inches of water, but produce best with 54 to 58 inches in California.

Doll and Shackel say that moderate levels of plant stress often occur within orchards and may be beneficial, particularly at the onset of hull split, when it may help to reduce the fungal disease hull rot and synchronize hull split.

They add that one year of reduced spur growth resulting from irrigation deficits will not necessarily lead to a dramatic decrease in next year's yield, but the effect can be cumulative if consecutive years of deficit irrigation occur and the number of fruiting spurs decrease.

The researchers say it is critical to maintain irrigation through the post-hull-split-postharvest period, since a water stress level that is too high reduces kernel weight and quality.

Severe stress from deprivation of postharvest irrigation has been found to decrease the next year's crop yield more than a preharvest water deficit.

Doll and Shackel say growers get the most out of water use when they irrigate just before water stress is low enough to cause a significant reduction in yield. This method of applying water during critical almond development periods and limiting water application during less-critical periods is called strategic deficit irrigation.

A pressure chamber can be used to measure plant stress.

Due to the negative impacts of severe drought, it may be beneficial to redirect water from older orchards to younger or higher producing blocks, with the intent of removing the older block.

Doll and Shackel recommend removing vegetation on the orchard floor or managing it to eliminate water loss through transpiration. They also say nitrogen applications should be reduced during periods of drought.

ACKNOWLEDGEMENT: *Western Farm Press*: Dennis Pollock, Contributing Writer

EDITOR'S COMMENT: Given the dry conditions being faced by many Australian growers considering the points discussed above may be most useful.

APPENDIX G: 2015 January Symposium/Farm Walk Media Release.

MEDIA RELEASE.

DATE: 13th JANUARY 2015

IMMEDIATE RELEASE

"AUSTRALIAN WALNUT GROWERS GAINING PRACTICAL KNOWLEDGE"

As the Walnut Industry expands in Australia, a need to build capacity within the industry arises. Technology transfer is an integral part of the strategic plan of the Australian Walnut Industry Association Inc as a way of building the grower knowledge base.

"Growers learning from other growers, and linking that with practical presentations 'in the field' from researchers ensures that the Australian Walnut Industry can expand the production of high quality walnuts for both the domestic and international markets" said Ms Carol Kunert, President, Australian Walnut Industry Association Inc.

Current growers are seeking additional information to assist in improving nut yields and quality, and new growers are seeking support as they look to develop new orchards and walnut businesses. Many of these growers will be descending on Swansea, Tasmania to participate in a comprehensive technical program and orchard visit on Saturday 17th and Sunday 18th January 2015.

"The Walnut orchard at Swansea is one of the older orchards in Tasmania, and is located in a cooler and wetter environment than most other walnut growing regions in Australia" said Dr Michael Lang, Principal Scientist, Walnuts Australia.

Technical presentations will be given by Dr Kathy Evans (Tasmanian Institute of Agriculture), Dr Michael Lang (Walnuts Australia) and Peter Targett (2014 Honours student).

"The opportunity to visit Walnuts Australia's orchard in Tasmania, and look at and discuss practical topics like Irrigation scheduling, Frost management, Pest and diseases, Light interception, Cultivar selection and Vegetative and fruit growth is an important part of the technology transfer program being undertaken by the Australian Walnut Industry Association" said Ms Kunert.

Growers interested in attending the Field Days and Seminar can register by going to the Australian Walnut Industry Association website www.walnut.net.au or contacting Trevor Ranford on 0417 809 172 or tco@walnut.net.au

For more information contact:

Carol Kunert, President, Australian Walnut Industry Association Inc
Mobile: 03 5729 7527

Dr Michael Lang, Principal Scientist, Walnuts Australia
Mobile: 0419 154 017

Trevor Ranford, Technical Communications Officer, Australian Walnut Industry Association Inc
Mobile: 0417 809 172.

For interviews and photo opportunities contact Trevor Ranford.

APPENDIX H: A copy of the 2015 January Symposium/Farm Walk Evaluation Survey results.

AUSTRALIAN WALNUT INDUSTRY ASSOCIATION INC

2015 JANUARY FARM WALK - SUMMARY OF EVALUATION SURVEY

Our aim is to continually improve the Australia Walnut Industry Association Inc Farm Walk program. To help us best meet your future needs, we appreciated you taking a few minutes to give us some feedback on your experiences with this event.

Q1: Type of Business / Organisation:

o Grower	16
o Marketer	3
o Researcher	1
o Sponsor	
o Speaker	
o Government Representative	
o Other (please specify)	1
Irrigation Equipment Manufacturer	

Q2: How did you hear about this event?

o AWIA e-mail	14
o Other Industry E-mail	
o AWIA Website	3
o Newspaper/Radio	
o Word of Mouth	2
o Another AWIA Member	3
o Other (please specify)Organising Committee	1

Q3: Did you find the length of the Farm Walk:

o Just right	14
o Too long and drawn out	1
o Too short to cover all topics	3

Rating out of 7 5.93

Q4: Did you find the content of the Farm Walk program:

- o Just right 17
- o Not relevant to my needs
- o A little too technical
- o Far too technical
- o Not technical enough 1

Rating out of 7 6.00

Q5: Which topics did you find most relevant to your needs?

- All very interesting but quality evaluation was very goof
- Practical farm walk was very good
- Pruning
- Phytophthora
- New pruning and frost protection regimes
- Disease research and quality parameters
- Quality parameters/control
- Visit to Walnuts Australia
- All topics interesting 2
- Storage issues/methods 5
- Spraying
- Farm Management
- Packaging
- Kathy & Mick's presentations
- Machinery
- All of it
- Machinery/harvesting
- Blight Control 3
- Frost Control 3
- Stem water potential – pressure 'bomb' 3
- Member forum especially the introduction to new members
- Actually all topics were relevant to me
- Seeing 8 tonnes/hectare blocks.
- Being given Walnut Australia advice and experience
- Quality control post storage
- Storage walnuts for quality – Vacuum seal, temperature and light
- Well done Peter on providing 'quantifiable evidence' for what we had worked out but had no hard 'facts'.

Q6: What are the most important or useful things you will take away from the Farm Walk and implement on your Orchard?

- Networking with the growers and their specific requirements
- Seeing Blight free crops
- Water logging damage
- High yield plantings
- Have different varieties of nuts
- Systematise data recording
- Use of SWP monitoring
- Information about different varieties will influence our 'bud' selection

- Water requirements of trees and irrigation scheduling through SWP analysis.
- Seeing how a 'commercial' enterprise is established, running and controlled.
- Networking – a great source of information.
- Blight control until shell hardens
- Vacuum packing for kernel freshness and freezing doesn't work
- Frost fan
- Stem water measurement
- Air flow in the orchard
- Machinery suitability to orchard.
- Keeping as much of the trees as possible and not keeping them neat and tidy
- Too early to tell!!!
- Hedging
- Spray program
- Leaf testing to inform our fertiliser program
- Parameters information – validation of that which we are practicing
- Interfacing with the number of AWIA members.
- Storage, spoilage (quality).
- Confidence in continuing some of our quality practices
- Improved techniques for moisture management.

Q7: What did you least like about this Farm Walk or its organisation?

- Wind
- Would have liked to ask more questions – felt rushed.
- Lack of more technical 'numbers to support the farming of walnuts.
- Lunches – would like more food especially at winery.
- Set up of the website for registration and payment. That's all.
- Nil
- 'Booties'

2

Q8: Please rate the presentations on a scale of 1 to 7 (please circle number 1 if you strongly disagree, or number 4 if you neither agree or disagree, or number 7 if you strongly agree)

Dr Kathy Evans	Rating out of 7	6.12
Dr Mick Lang	Rating out of 7	6.35
TIA R&D activities	Rating out of 7	5.81
Dr Mick Lang (session 2)	Rating out of 7	6.39
Peter Targett	Rating out of 7	6.44
Orchard Visit	Rating out of 7	6.39
Berry Farm Tour	Rating out of 7	6.00
Winery Tour	Rating out of 7	4.85

- Too verbose – dragged on
- For other information only – not relevant to my farm though

Q9: Please rate the following statements on a scale of 1 to 7 (please circle number 1 if you strongly disagree, or number 4 if you neither agree or disagree, or number 7 if you strongly agree)

I found the Farm Walk to be interesting & informative

Rating out of 7 6.39

I found the Farm Walk to be well organised

Rating out of 7 6.17

- **Web registration not set up properly**

I found the Farm Walk relevant to my needs

Rating out of 7 6.22

- **Biosecurity could have been explained in more detail and other practices eg., washing down, sterilising machinery entering farm etc.**

Q10: Where would you like the next Farm Walk to be held?

- | | |
|---|---|
| • Tasmania | 2 |
| • South Australia | 4 |
| • No preference | |
| • Victoria | 2 |
| • NSW – Walnuts Australia | 3 |
| • Western Australia | 2 |
| • Riverland – 2015 | 2 |
| • 2016 – BOONDEROO – Somerset Park | |
| • Processing plant(s) e.g., Violet Town or other on how to process/clean/grade walnuts. | |

Q11: What topics would you like to be presented at the next Farm Walk?

- | | |
|---|---|
| • Harvesting | 2 |
| • Processing (hulling, sizing, drying) | 2 |
| • Nutrition | 2 |
| • Marketing | 2 |
| • Sunburn and heat mitigation | |
| • Vermin bird control | |
| • No preference – depends on what the 'hot' topics are at the time. | |
| • Water use/requirements for the plants | 2 |
| • Fertiliser use | |
| • Pest/weed control | |
| • Maximising harvest/yield | |
| • Farm Management | |
| • Spray Programs | |
| • Storage | |
| • Blight | |
| • AWIA Member forum – update and introduction to/of new members. | |
| • Update on Walnuts Australia research and other members projects. | |
| • What's new on the website – get people to use it. | |
| • Marketing ideas for small growers. | |

- Summary of OHS/worker pay requirements (I know it varies from State to State but a checklist would be good).
- Biosecurity in practice
- Organic certification methods and practices.
- Mulching farm wastes, natural fertilisers, use of walnut by-products, etc.
- Fertigation program
- Use of herbicides, pesticides and fertilisers.
- Protection against animals and birds

Q12. Any other comments about the 2015 Farm Walk and the Program

- Topics well integrated and presented from different perspectives
- Well organised
- Good location – lots to learn @ Swansea Walnut Orchard
- Good opportunity for networking, meeting other members and sharing knowledge and experience
- Very positive experience.
- Outstanding weekend – very informative – very good presentations.
- Well done to the organisers.
- Thoroughly enjoyed the weekend.
- Would have been great to have experienced Tasmania's gourmet food.
- Very informative and welcoming – good atmosphere.
- It's important to consolidate the group's collegiality each time.
- Frost and sunburn control update i.e. dealing with climate change.
- Excellent organisation – good variety.
- Nice to see other horticultural enterprises.
- Good to meet people, exchange ideas and hear others experiences.
- Please send 'CD' containing presentation footing as soon as possible to AWIA participants and members so the information can be used.
- Thanks.
- Was unfortunately a 'bit too costly' to bring the whole family (wife and 2 children) who too are our family business partners who would have also enjoyed and learned heaps. (I have an effective family unit all heavily involved in the farm opportunities – cost was forecasted at ≥ \$2,000 for the trip to Tasmania – sorry to have left them at home.
- Didn't find all the answers to my questions on – irrigation, fertilizers, grass/weed control mechanisms, organics and further product opportunities, Quality Assurance and quality control techniques, environmental management, safety management and Carbon farming initiativesI'll continue to search.

APPENDIX I: Australian Nutgrower article on 2015 January Symposium/Farm Walk.

Networking by Australian Walnut Growers at Swansea, Tasmania resulted in new learning's

Some thirty Australian Walnuts growers descended on Swansea, Tasmania over the weekend of the 17th and 18th January 2015 to network, receive technical presentations, participate in a comprehensive orchard walk through the Walnuts Australia plantation and visit new and interesting horticultural/wine grape businesses.

Through the assistance of Dr Michael Lang, Principal Scientist with Walnuts Australia and the staff at the Swansea orchard an enjoyable but highly informative weekend symposium and farm walk was held.

The Saturday morning symposium gave growers insight into a range of AWIA and Walnut Australia research activities.

Dr Kathy Evans gave a further update on the Quality Parameters project that had been undertaken by AWIA. As part of the presentation Dr Evans worked through the new Quality Parameters work document that has been prepared as the end result of the project.

Other topics covered included:-

- 'Developing strategies to maximise walnut quality at harvest' – Dr Michael Lang
- 'Description and management of premature fruit drop in walnuts' – Dr Michael Lang
- 'Walnut Storage And Innovation - A Student honours project' – Peter Targett
- 'Viticulture project - relevance to walnuts' – Dr Kathy Evans.

The presentation by Peter Targett resonated with the growers and the important points that came from his presentation included:

- Walnut colour can be used as a proxy test for palatability and peroxide values.
- Light kernel colour already fetches price premiums with certain distributors.
- Distributors, supermarkets and consumers can use kernel darkness to evaluate quality and identify their best purpose for use.
- Putting emphasis on kernel colour by the industry as a whole could help us differentiate our product between inferior nuts from other countries, which could eventually lead to price premiums for Australian growers.

All the presentations were recorded and the DVD is available to Walnut growers at a small postage and handling fee. In addition the presentations have been downloaded onto the AWIA website.

The challenge now for AWIA is to transfer the information into practical 'tools' for growers to continue to build on the recognition of the high quality nuts produced by Australian growers.

After lunch the growers visited the expansive Walnut Australia orchard just outside of Swansea. The theme of the visit was ***'Where did we get it wrong and what have we done right'***.

Discussion and demonstrations during the visit included:

- Irrigation scheduling – 'soil moisture probes' and 'pressure bomb' measurement of stem water potential
- Frost management – 'frost fans' and 'cultural management' techniques
- Pest and diseases – chemical and cultural methods to manage Phytophthora, walnut blight, frosted scale...
- Light interception – mechanical hedging of mature trees
- Cultivar selection – Hungarian, French and Californian cultivars
- Vegetative and fruit growth - specific plot production, with reference to crop yield and nut quality.

The visit was very practical with growers having the opportunity to look at each application in the orchard and discuss the pros and cons of each component.

Growers were extremely appreciative of the open and frank nature in which the staff from Walnuts Australia discussed each topic and this led to a great exchange between all participants.

Sunday saw the group visit Kates Berry Farm and be entertained and enthralled by Catherine (Kate) Bradley and her story. While the Berry Farm is small the overall business is built around the use of local produce to attract and service the requirements of a very strong tourist trade. Growers took away some very strong messages on how to prepare and supply premium quality product to a very discerning customer.

Growers returned to the Walnut Orchard to participate in an open forum. This resulted in some very useful information being made available to the AWIA executive committee to be developed into the next round of activities.

The weekend concluded with a visit to Milton Vineyard, a presentation by Michael and Kerry Dunbabin and then lunch. The venue is again set-up to attract the lucrative tourist trade but also service the needs of Tasmanian and Australian customers with high quality wines.

Some of the evaluation after the event by the growers included:-

- Topics well integrated and presented from different perspectives.
- Good opportunity for networking, meeting other members and sharing technology and experience.
- Didn't find all the answers to my questions – I'll continue searching.

From all those who attended the weekend was a very positive experience and a sound base for AWIA to work from in developing the next Farm Walk/Symposium in the second half of 2015.

Publicity of the event led to a range of media interviews with the ABC and the Country Hour and a story in the Hobart Mercury.

Again thanks to Michael Lang and the staff at the Walnuts Australia Swansea orchard and Sally Smith for her overall organisation of this event.

Trevor M Ranford
Technical Communications Officer
Australian Walnut Industry Association.

**APPENDIX J: 2015 August Symposium and Annual General Meeting Evaluation
Survey results.**

AUSTRALIAN WALNUT INDUSTRY ASSOCIATION INC

2015 AUGUST WINTER SYMPOSIUM - SUMMARY OF EVALUATION SURVEY

Our aim is to continually improve the Australia Walnut Industry Association Inc Conference program. To help us best meet your future needs, we would appreciate you taking a few minutes to give us some feedback on your experiences with these events.

Q1: Type of Business / Organisation:

o Grower	16
o Marketer	3
o Researcher	1
o Sponsor	
o Speaker	1
o Government Representative	
o Other (please specify)	
o Not yet growing	1
o Consultant	1
o Manufacturer/Oil pressing	1
o Processor	1

Q2: How did you hear about this event?

o AWIA e-mail	15
o Other Industry E-mail	
o AWIA Website	1
o Newspaper/Radio	
o Word of Mouth	1
o Another AWIA Member	2
o Other (please specify)	
• Family	1
• AWIA Committee Member/organiser	1
• Trevor Ranford	1

Q3: Did you find the length of the Conference:

- o Just right 17
- o Too long and drawn out
- o Too short to cover all topics 2
 - Maybe 1 presentation too many
 - 30 minutes too long

Rating:	1	2	3	4	5	6	7
Scores			2		4	9	2

Average rating out of 7: **5.53**

Q4: Did you find the content of the Conference program:

- o Just right 19
- o Not relevant to my needs
- o A little too technical
- o Far too technical

Rating:	1	2	3	4	5	6	7
Scores				1	3	11	3

Average rating out of 7: **5.89**

Q5: Which topics did you find most relevant to your needs?

- Fertigation 5
- Phytophthora 2
- Compost 5
- Irrigation 8
- Drape Nets 3
- Initial Q&A
- Nutrition 2
- Bird Control and robotics
- Irrigation design
- ALL 2
- Industry statistics
- All very useful
- Market sharing from our new Chairman
- Tapping pool of knowledge
- Grower panel
- Export and FTA

- ANIC representative
 - Composting qualities
- Q6: What are the most important or useful things you will take away from the Conference and implement on your Orchard?**
- We are already doing most of what was advised, but some of this was reinforced (e.g., SWP and water needs) and we also learned more details (e.g., fertigation, phytophthora)
 - Phytophthora control
 - Cattle tags in control boxes
 - Fertigation, EC monitoring and nutrient uptake
 - N/A but will pass on compost and irrigation
 - Fertigation and Irrigation information
 - New contacts
 - Topics discussed in round table as well as issues brought up during presentations
 - Irrigation design, latest techniques and design
 - Soil management
 - Fertigation 2
 - Phytophthora control
 - Irrigation management
 - Keeping ants out of control boxes
 - Methods of irrigation
 - Irrigation 2
 - Drape netting
 - Peats Soil
 - Composting
 - Roundtable was useful
 - Robotics and their implementation
 - The size of the industry and the Nut Industry
- Q7: What did you least like about this Conference?**
- Not nutgating (not a natural process)
 - The CSIRO presentation and what was relevant could have been said in five minutes and time saved on the other more useful topics.
 - CSIRO Bird control
 - Congestion at meal breaks
 - I would have like to have a walk or at least a stretch
 - Short lunch break meant little time for discussion.
 - Graphs and numbers
 - Would like to ask more questions on some points
 - Could have longer time to network during the coffee breaks/lunch breaks
 - **All good** 2
 - Birds
 - Managing bird problems
 - AV Equipment
 - Need two coffee stations
 - The squeaky door
 - Phytophthora (more so it being at the end of the day)
 - The projector was not set-up properly – couldn't easily adjust and couldn't see slides clearly

Q8: Please rate the presentations on a scale of 1 to 7 (please circle number 1 (low rating) or number 7 (high rating)).

	Low Rating					High Rating	
Q & A Panel	1	2	3	4	5	6	7
Scores					6	6	8
	Average rating out of 7:					6.10	
Dr Ashley Tews	1	2	3	4	5	6	7
Scores		1	1	2	4	9	2
	Average rating out of 7:					5.32	
Drape Netting	1	2	3	4	5	6	7
Scores		1	1	2	7	7	2
	Average rating out of 7:					5.20	
Peter Wadewitz	1	2	3	4	5	6	7
Scores				1	3	7	6
	Average rating out of 7:					6.06	
Chaseley Ross	1	2	3	4	5	6	7
Scores					6	9	5
	Average rating out of 7:					5.95	
Shaul Gilan	1	2	3	4	5	6	7
Scores	1			2	9	5	3
	Average rating out of 7:					5.25	
Andrew Pollard	1	2	3	4	5	6	7
Scores					7	9	3
	Average rating out of 7:					5.79	
Trevor Ranford	1	2	3	4	5	6	7
Scores				1	8	8	3
	Average rating out of 7:					5.65	

Grower Panel	1	2	3	4	5	6	7
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Scores					4	4	2
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Average rating out of 7: 5.80

Q9: Please rate the following statements on a scale of 1 to 7 (please circle number 1 if you strongly disagree, or number 4 if you neither agree or disagree, or number 7 if you strongly agree)

strongly disagree strongly agree

I found the Conference to be interesting &

informative			1	2	3	4	5	6	7
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Scores							3	8	9
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Average rating out of 7: 6.3

I found the Conference to be well

organised			1	2	3	4	5	6	7
-----------	--	--	---	---	---	---	---	---	---

Scores							3	11	6
--------	--	--	--	--	--	--	---	----	---

Average rating out of 7: 6.15

I found the Conference relevant to

my needs			1	2	3	4	5	6	7
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Scores						1	4	9	6
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Average rating out of 7: 6.00

Q10: Where would you like the next Conference to be held?

- For a one day meeting with no on-site activity, time and cost of travel are the main considerations – so within driving distance of Shepparton (Selfishly).
- For a longer meeting – where some interesting practical visits are possible (like Swansea).
- Melbourne or Shepparton.
- Shepparton with a field visit to Delta Tree Nursery (Bienbartha) and a high density orchard that incorporates tree training (Congupna).
- Same place in Shepparton – Great place to stay, people are nice, very nice meeting room.
- South Australia
- Shepparton easy for me to get to and find accommodation. Also a place to fly into (Shepparton airport) 3
- Nagambie
- Melbourne – Vibe Hotel in Carlton worth investigating for conference packages.
- Victoria
- Shepparton is fine 2

- Tasmania
- Griffith

Q11: What topics would you like to be presented at the next Conference?

- Weed control – herbicides and machinery (much information relates to broad acres or mature orchards, not the intricate negotiation around small trees.
- Continuous transmission of SWP
- Pruning
- Nutrition
- Choosing a suitable location and site for a new orchard given the change in climate and future water constraints expected.
- Tree training, light interception and yield development
- Irrigation scheduling and monitoring
- DK
- Types of electronic systems connected with irrigation
- Update on Cockatoo control.
- Storage of dried nuts
- Sizing in shell
- Harvesting methods
- Cleaning and sorting methods and machinery
- Product labelling for Australian made/Australian grown
- Harvesting and post harvesting issues
- Blight
- Increase yields
- Propagation of walnuts
- Intercropping and grazing
- Viability of pop-up sprays versus drips.
- Orchard establishment
- Global markets
- Setting up a facility to dry and clean and possibly process nuts.
- Soil structure

Q12. Any other comments about the 2015 Conference and the Program

- It's good to try to keep to time. If there had been 2 fewer scheduled sessions, the day would have still been full.
- The Q&A session was good but perhaps would have been better at the end of the morning. Thou it could also have 'soaked up' outstanding questions from the morning sessions. Logistics were simple. Very comfortable.
- Interesting variety of talks which brought people in – members and non-members – this is the key.
- Plenty of time to talk is important
- Good food
- Well organised with machines etc working properly.
- Very enjoyable – thank you.
- Very well organised
- 'Publications table' on which we can get information from.
- Walnut tree generation and propagation
- Would like more information on 'organic certification' and the main differences in production methods and techniques.
- Machinery available – more machinery demonstrations/videos.
- Lunch very good. Morning and afternoon tea a bit inadequate.
- Thanks again Carol
- A chance to talk to other growers/presenters.

- Excellent programme – thank you Trevor

APPENDIX K: 2015 November Symposium/Farm Walk Media Release.



MEDIA RELEASE.

DATE: 13th NOVEMBER 2015

IMMEDIATE RELEASE

“NEW PRESIDENT FOR AUSTRALIAN WALNUT INDUSTRY ASSOCIATION”

The current President of the Australian Walnut Industry Association (AWIA), Mr John Hosken, has decided to retire from his AWIA position effective 17th November 2015 due to his resignation from Walnuts Australia.

Dr Michael Lang, Principal Scientist at Walnuts Australia, has accepted the position as the new AWIA's President. Dr Lang's work for his PhD on management of walnut blight has been widely adopted in Australian walnut orchards. AWIA looks forward to a long and productive period with Dr Lang as President and thanks Mr Hosken for his enthusiastic contribution as President. Dr Lang will start in the new role on 17th November after a handover during the next two weeks.

“The Australian Walnut Industry is going through some exciting times with plantings increasing and production reaching new heights” said Dr Lang, President elect, Australian Walnut Industry Association.

The 2015 production was in excess of 8,000 tonnes with a Farm Gate Value of \$60 million. By 2020 the industry expects to have a production of 13,000 tonnes.

Growers are establishing orchards in new regions like the Riverland and Sunraysia that will lead to further production capacity.

“Some of these new orchards will be featured at the upcoming Symposium/Farm Walk being organised for Saturday 21st November 2015” said Mr Trevor Ranford, Technical Communications Officer, AWIA.

A full program will commence with a symposium at the Mercure Motel, Mildura and then move out into the orchard where growers will be able to see both the orchards and orchard equipment.

“Current and prospective growers are encouraged to attend this last event for 2015” said Mrs Sally Smith, Secretary, AWIA.

Growers interested in attending the Field Days and Seminar can register by going to the Australian Walnut Industry Association website www.walnut.net.au or contacting Trevor Ranford on 0417 809 172 or tco@walnut.net.au

This Symposium/Farm Walk has been funded by Horticulture Innovation Australia Limited with co-investment from the Australian Walnut Industry Association Inc and funds from the Australian Government.

For more information contact:

Dr Michael Lang, Principal Scientist, Walnuts Australia
Mobile: 0419 154 017

Sally Smith, Secretary, Australian Walnut Industry Association.
Mobile: 0418 664 672

Trevor Ranford, Technical Communications Officer, Australian Walnut Industry Association Inc
Mobile: 0417 809 172.

For interviews and photo opportunities contact Trevor Ranford.

Appendix L: 2015 November Symposium/Farm Evaluation Survey results.

AUSTRALIAN WALNUT INDUSTRY ASSOCIATION INC

2015 NOVEMBER FARM WALK - SUMMARY OF EVALUATION SURVEY

Our aim is to continually improve the Australia Walnut Industry Association Inc Farm Walk program. To help us best meet your future needs, we appreciated you taking a few minutes to give us some feedback on your experiences with this event.

Q1: Type of Business / Organisation:

o Grower	15
o Marketer	1
o Researcher	2
o Sponsor	
o Speaker	1
o Government Representative	
o Other (please specify)	
Corporate	2

Q2: How did you hear about this event?

o AWIA e-mail	12
o Other Industry E-mail	1
o AWIA Website	1
o Newspaper/Radio	
o Word of Mouth	1
o Another AWIA Member	4
o Other (please specify)	

Q3: Did you find the length of the Farm Walk:

o Just right	17
o Too long and drawn out	
o Too short to cover all topics	

Rating:	1	2	3	4	5	6	7
---------	---	---	---	---	---	---	---

RESULTS:				1		5	5
----------	--	--	--	---	--	---	---

Rating out of 7	6.27
-----------------	------

Q4: Did you find the content of the Farm Walk program:

- ☐ Just right 15
- ☐ Not relevant to my needs
- ☐ A little too technical
- ☐ Far too technical
- ☐ Not technical enough

Rating: 1 2 3 4 5 6 7

RESULTS:

Rating out of 7 6.00

Q5: Which topics did you find most relevant to your needs?

- Labour
- Spray coverage, techniques, calibration, etc 6
- Varietal
- R&D future forum
- All were good 2
- Nut Centre of Excellence 3
- AWIA membership discussion
- Farm fruit losses due to weather effects
- Canopy spraying
- Orchard Walks
- Potential growing regions
- HIAL structure
- R&D funding

Q6: What are the most important or useful things you will take away from the Farm Walk and implement on your Orchard?

- Crop spraying/calibration 4
- Networking
- Future planting areas

- Pollination timing/temperatures
- Most useful items of information from other participants
- Planting space for walnuts
- Spray methods/information 3
- Social networks to make separate from visits on a social basis
- Rootstock differences
- Temperature influences on nut set
- No field machinery display
- Labour
- Nut retention issues widespread
- Interaction with other growers

Q7: What did you least like about this Farm Walk or its organisation?

- Nothing 2
- Round table discussions but no action taken to recruit the outstanding walnut farmers.
- Long drive to get there
- Sunday forum good but needs to be better facilitated

Q8: Please rate the presentations on a scale of 1 to 7 (please circle number 1 if you strongly disagree, or number 4 if you neither agree or disagree, or number 7 if you strongly agree)

Jacquelyn Simpson

Rating:	1	2	3	4	5	6	7
---------	---	---	---	---	---	---	---

RESULTS:		1	1	3	7	2	3
-----------------	--	---	---	---	---	---	---

Rating out of 7 5.0

Labour Solutions

Rating:	1	2	3	4	5	6	7
---------	---	---	---	---	---	---	---

RESULTS:				5	6	3	3
-----------------	--	--	--	---	---	---	---

Rating out of 7 5.24

Ross Skinner (ABA)

Rating:	1	2	3	4	5	6	7
---------	---	---	---	---	---	---	---

RESULTS: 2 10 5

Rating out of 7 6.18

Corrine Jasper (HIAL)

Rating: 1 2 3 4 5 6 7

RESULTS: 4 5 5 2

Rating out of 7 5.31

Geoff Furness

Rating: 1 2 3 4 5 6 7

RESULTS: 3 1 6 7

Rating out of 7 6.00

Orchard Visit - 1

Rating: 1 2 3 4 5 6 7

RESULTS: 1 9 7

Rating out of 7 6.35

Orchard Visit - 2

Rating: 1 2 3 4 5 6 7

RESULTS: 2 7 6

Rating out of 7 6.27

Grower meeting (Sunday)

Rating: 1 2 3 4 5 6 7

RESULTS: 1 3 4 6 3

Rating out of 7 5.29

Q9: Please rate the following statements on a scale of 1 to 7 (please circle number 1 if you strongly disagree, or number 4 if you neither agree or disagree, or number 7 if you strongly agree)

I found the Farm Walk to be interesting & informative

Rating: 1 2 3 4 5 6 7

RESULTS: 8 10

Rating out of 7 6.56

I found the Farm Walk to be well organised

Rating: 1 2 3 4 5 6 7

RESULTS: 1 9 8

Rating out of 7 6.39

I found the Farm Walk relevant to my needs

Rating: 1 2 3 4 5 6 7

RESULTS: 3 7 8

Rating out of 7 6.28

Q10: Where would you like the next Farm Walk to be held?

- Tasmania 4
- Central Victoria 2
- Western Australia 4
- SE Australia
- NSW
- SA
- Anywhere – I'll travel anywhere but I'd like more information on 'Accredited Grower AWIA' concepts
- Anywhere
- Bendigo 2
- Leeton
- Ballarat
- Like the NW Tasmania idea too
- Gippsland
- Riverina

Q11: What topics would you like to be presented at the next Farm Walk?

- Irrigation – detailed requirements for conversion from sprinklers to drip irrigation
- Results of fruit drop project
- Varieties
- Harvesting techniques
- More on harvesting machines and techniques
- Organic farming/composting

- Machine types and harvesting techniques
- Composting farm wastes
- Profitability from Walnuts – how to make more profits
- Happy with everything
- Blight
- Water Use
- Pollination
- Fruit drop
- Processing
- Growing 'tips'
- Propagation
- Presentation on AWIA. Are we getting the most of your membership?
- Tour of website capabilities and interaction
- Current findings on research by Walnuts Australia

Q12. Any other comments about the 2015 Farm Walk and the Program

- Excellent
- Found the farm walk informative and a great opportunity to speak with members with a wealth of knowledge within the industry
- An introduction to QA, OH&S, Environmental Management Practices, Social responsibility and ethical sourcing of inputs.
- A plastic membership card as an accredited grower that I can show my customers that my farm and farm produce meets or exceeds the AWIA 'Best Practices' and has been 'endorsed'.
- Levy? No worries if I get same value for money by being a member.
- Very enjoyable
- The levy is proving difficult to resolve. Maybe we find another research model independent of universities, departments, NGO's, etc.
- For car conveys – have a flag/coloured tape for each car. Better maps – was a bit confusing. BUT these are minor improvements on an excellent weekend.
- Well done Trevor

APPENDIX M: DRAFT Walnut Orchard Production Puzzle.

The Walnut Industry Puzzle

**Cost of
Production**

**Skills
Needed**

**Nutrition
Management**

Processing

**Site
Selection**

**Soil
Management**

**Record
Keeping**

Irrigation

**Weed
Control**

**Harvest
Preparation**

Spraying

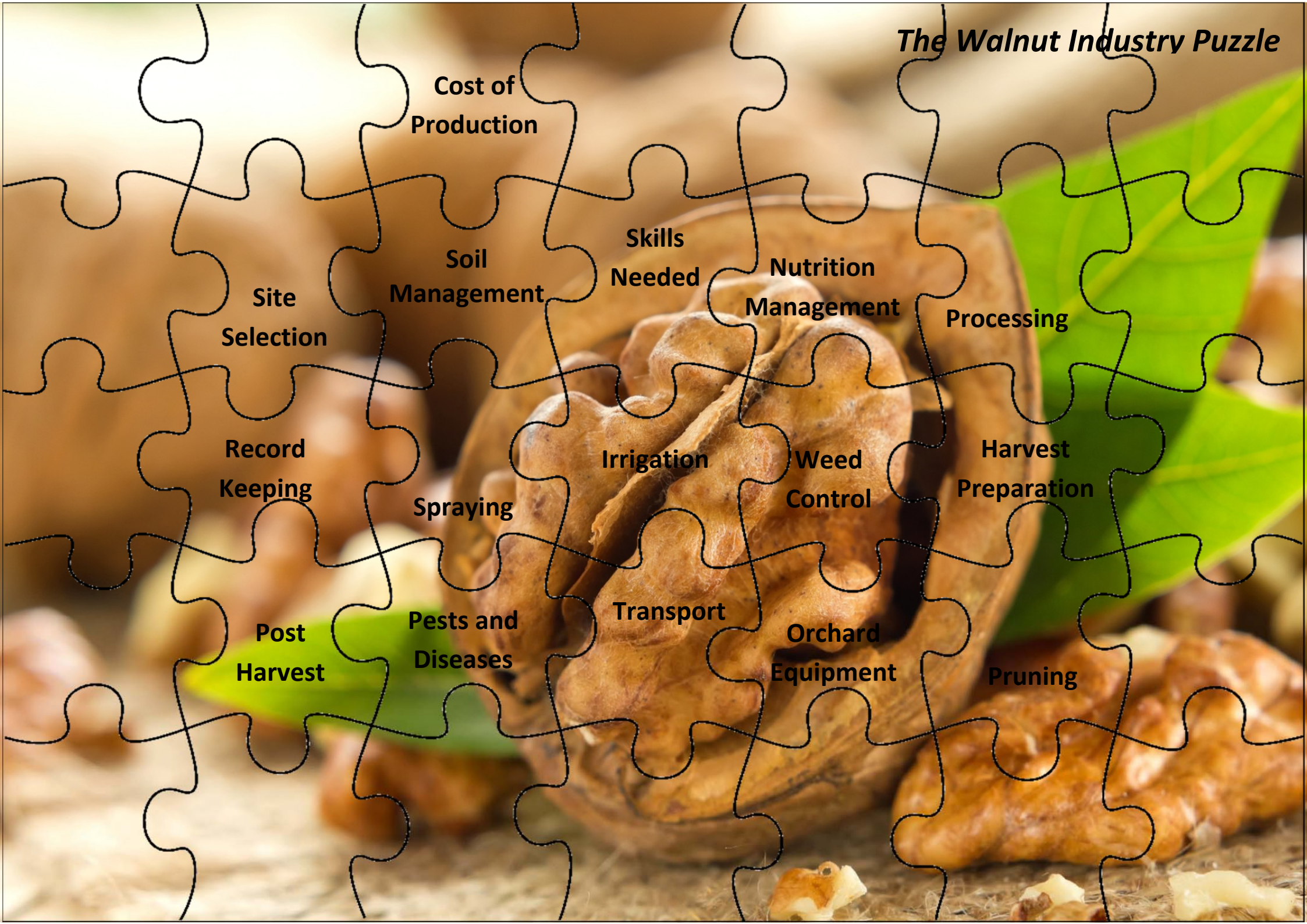
**Post
Harvest**

**Pests and
Diseases**

Transport

**Orchard
Equipment**

Pruning



APPENDIX N: 2015 Grower Production Survey form.

CONFIDENTIAL

Australian Walnut Industry Association - 2015 Industry Survey

Statistical Information Request

How Can AWIA help you? What happens if a disease affects my orchard? Why don't walnuts get more publicity? Why didn't I hear about it? Is there someone who I can ask for advice? Where's my nearest processor? What varieties are grown in my area? Can I get more nuts from my orchard? Should I plant more walnuts?

The Australian Walnut Industry is developing at a rapid rate.....is it? This simple question should be easy to answer but a lack of accurate industry statistics makes it impossible for this statement to be made definitively.

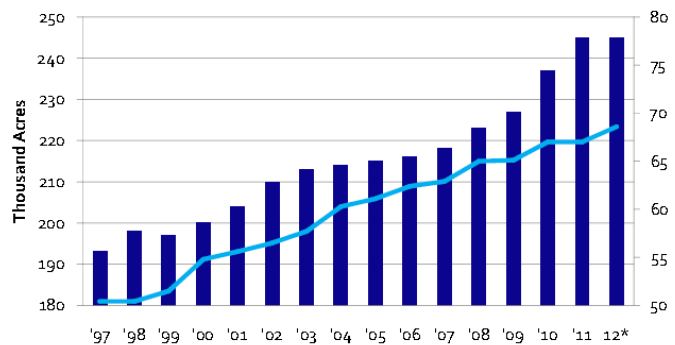
AWIA needs your co-operation to compile industry data that can be used to assist the walnut industry. Knowledge of the industry we represent is critical for walnuts to have a voice in organisations such as ANIC, Nuts for Life, Plant Health Australia, Horticulture Innovation Australia not to mention all levels of government.

The attached survey has been developed to assist the compilation of data on the Australia walnut Industry that will be used to accurately report and represent AWIA members. This information will be used to protect the Walnut Industry particularly focused on disease and biosecurity but also on chemical permits and registrations.

AWIA will be surveying all walnut growers and processors and thank you in advance for your input into helping the Walnut Industry grow and protect its members.

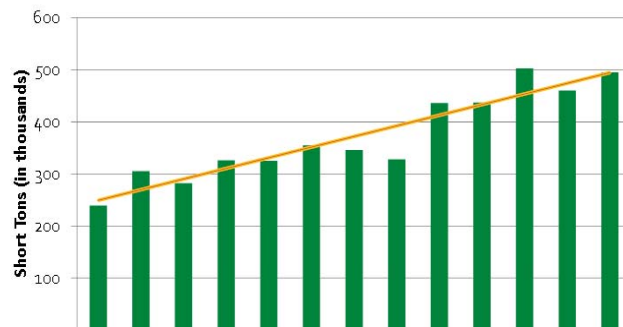
Industry data will be only ever be presented as industry data, never individual properties and examples of how this data can be utilised are presented here from the Californian Walnut Commission.

BEARING ACREAGE VS. BEARING TREES PER ACRE



Source 2013 Californian Walnut -State of the Industry

PRODUCTION



Source 2013 Californian Walnut -State of the Industry

CONFIDENTIAL

Australian Walnut Industry Association - 2015 Industry Survey

The Australian Walnut Industry Association Inc collects and administers a range of personal information for the purposes of managing the affairs of the organisation and promoting the Australian Walnut Industry. The organisation is committed to protecting the privacy of personal information it collects, holds and administers.

The Australian Walnut Industry Association Inc recognises the essential right of individuals to have their information administered in ways which they would reasonably expect – protected on one hand, and made accessible to them on the other. These privacy values are reflected in and supported by our core values and philosophies.

The Australian Walnut Industry Association Inc is bound by laws which impose specific obligations when it comes to handling information. The organisation has adopted the principles as minimum standards in relation to handling personal information.

Participants with multiple properties please use one survey sheet per property.

1. GROWER IDENTIFICATION

Grower Name	
Orchard Address	
Town	
State	
Contact Number	
E-mail	

2. ORCHARD AREA

Orchard Name	Hectares Planted or Acres Planted

3. VARIETIES

Variety Planted	Trees Planted	Area Planted
Chandlers		
Treyve mayette		
Franquette		
Howard		
Serr		
Vina		
Lara		
Ashley		
Tulare		
Other -		
Other -		

4. AGE DISTRIBUTION

Average tree age (circle)

0-4 4-8 8-12 12-20 20-30 30+ years

5. PRODUCTION

	2015	2014	2013	2012	2011	2010
Orchard Production (tonnes)						

6. SALES

	YES	NO	PERCENTAGE
FARM GATE			
FARMERS MARKETS			
PROCESSOR			
WHOLESALE MARKET			
DIRECT TO RETAILER			
EXPORT MARKET			

7. PROCESSING

Do you undertake post-harvest activities such?

	Y/N	Capacity per day
Hull removal		
Washing		
Drying		
Sizing		

Packaging		
Shelling		
Value adding (further processing)		

8. QUALITY ASSURANCE

Does the property run a quality assurance program (circle)?

FRESHCARE YES NO

SGF 1000/2000 YES NO

HACCP YES NO

GLOBAL GAP YES NO

BRC

YES

NO

OTHER:

.....

9. ON-FARM BIOSECURITY PLAN/PROGRAM

Does the property run an On-Farm Biosecurity program (circle)?

YES

NO

Please return survey to AWIA by any of the following methods:

Email: tco@walnut.net.au

Post: 27 Ludgate Hill Road, ALDGATE. SA. 5154

APPENDIX O: Statistical analysis of 2015 Industry Survey report.



Australian Walnut Industry Association

STATISTICAL ANALYSIS OF 2015 INDUSTRY SURVEY

**Prepared by Rho Environmetrics Pty Ltd
PO 366, Highgate, South Australia 5064**



August 2015

SUMMARY

A survey of the Australian Walnut Industry has shown that production of walnuts has increased from 1350 tonnes in 2010 to 6950 tonnes in 2015. The increase in production is not reflected in new plantings so it must be attributed to tree maturity or better orchard management.

Currently a total of 2580 ha is planted to walnuts across Australia, with 1730 ha in NSW, 10 in SA 395 in Tasmania, 386 in Victoria and 60 in WA. The very limited new plantings will prevent a rapid expansion of walnut production in Australia

The walnut industry in Australia is dominated by a few large enterprises. This is apparent from Figure 6 1 which shows over half the production is from a single enterprise. Similarly, the ability to process walnuts is also dominated by a few enterprises - in fact most enterprises did not report any processing facilities. Although forms were not received from all enterprises, the dominance of a few enterprises ensures that assessments based on volume or area will be sufficiently reliable to be used as a basis for decision making.

Although there were 25 varieties recorded in the survey, 66% of the area was planted to Chandler, Howard or Vina. There is therefore genetic diversity within the industry.

There was a diversity of outlets used in selling walnuts, but on a volume basis export was the most important (68%), followed by wholesale and retail. Only one enterprise attempted to value-add.

There was a quality assurance program and biosecurity controls on approximately 90% of the area planted to walnuts.

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AWIA Survey Report

INTRODUCTION

Australian Walnut Industry Australia Inc (AWIA) has commissioned a survey of the Australian Walnut Industry to give general information on the industry. The request from the industry was to focus on:

- a) Volume of product;
- b) Number of trees;
- c) Major varieties and
- d) Any future trends - new plantings and their effect on production.

A survey of walnut enterprises was undertaken, and a copy of the questionnaire is given in Appendix A.

The material has been obtained under a confidential arrangement - that limited reporting to some extent so that individual enterprises are not too readily identifiable. There had to be a compromise with this as the industry is dominated by a few key players.

DATA RECEIVED

Data were supplied as an Excel® spreadsheet. Data were analysed using the R package (R Development Team, 2014).

This survey, as is all such surveys, is limited by problems of incomplete data and non-response (with the associated non-response bias). There were 33 returns (2 very incomplete) making tests for non-response bias impractical (Moser, et al., 1973). However the major players have been included and as can be seen from Figure 6 1 the survey will have covered much of the industry.

AREA PLANTED TO WALNUTS

The overall area planted to walnuts as recorded in the grower survey was 2582 ha. Approximately 70% (1700 ha) of the area was contributed by a single grower, while another grower contributed 16% (391 ha). The dominance of these two enterprises is illustrated in Figure 6 1.

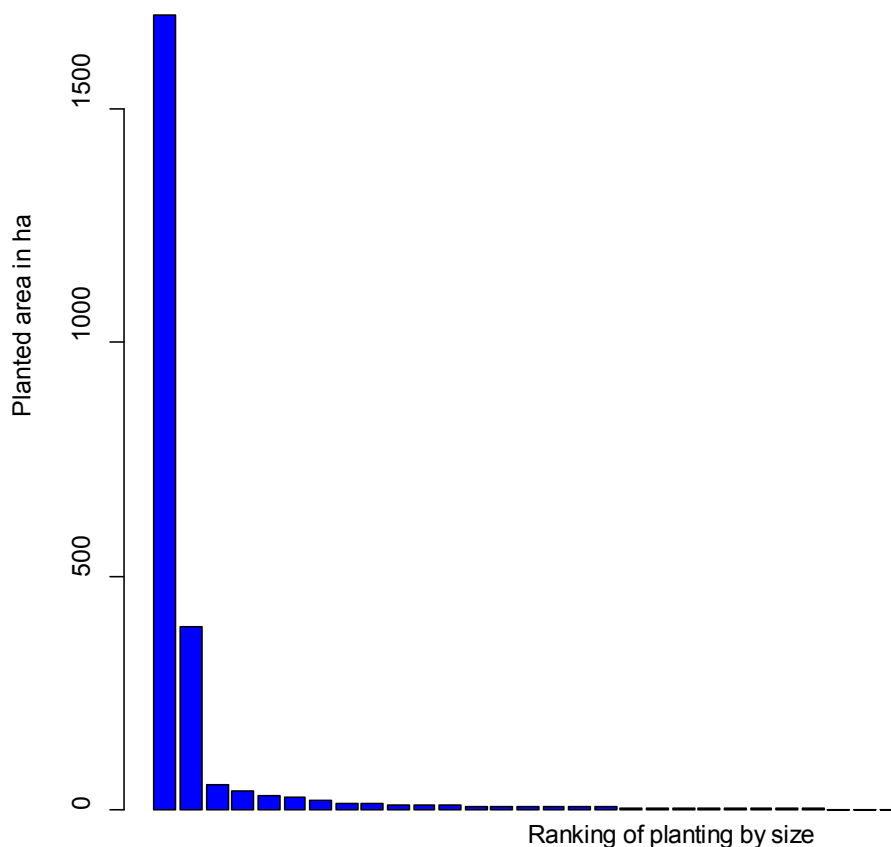


Figure 6 1 Area planted to walnuts sorted by size of enterprise

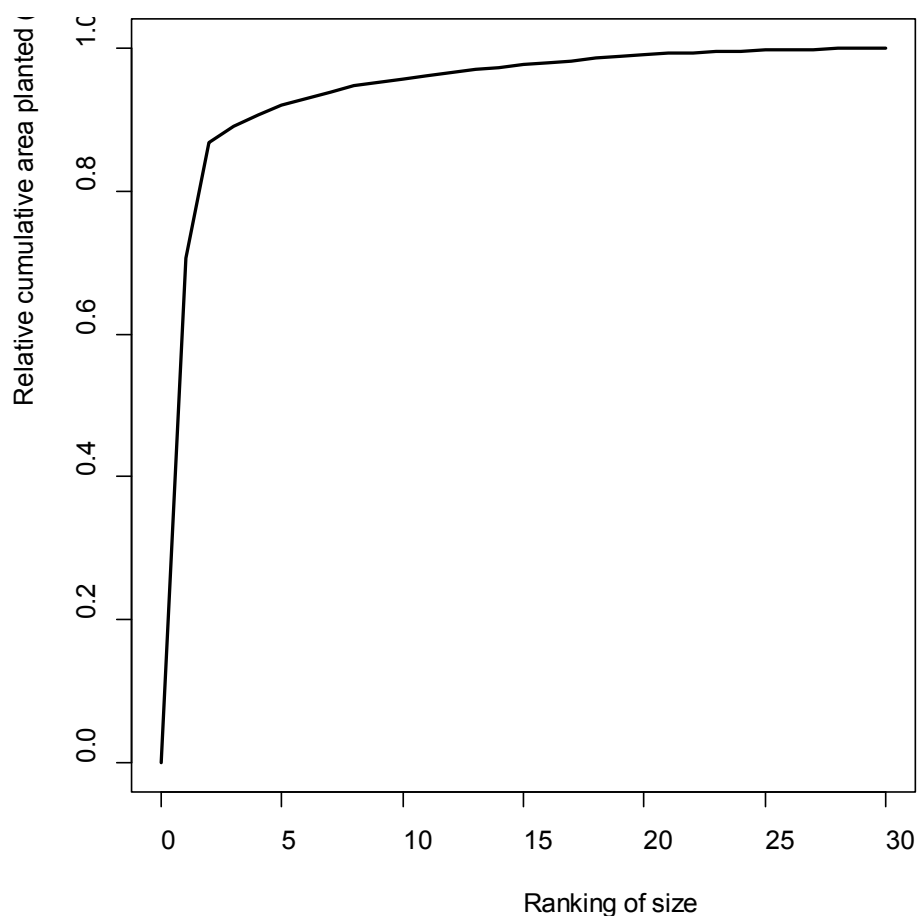


Figure 6 2 Relative cumulative plot of areas of walnut against rank of size of enterprise

The area of walnuts in each state is shown in Table 6 1. The largest area is in NSW followed by Tasmania and then WA. The median areas were similar to the means for all states except for NSW which was dominated by a single enterprise of 1700 ha.

State	NSW	SA	TAS	VIC	WA	Total
Number of returns	6	2	2	21	2	33
Total area	1731	10	395	386	60	2582
Mean area	288	5	198	18	30	78
Median area	7.5	5	198	10	30	8

Table 6 1 Area reported planted to walnuts (ha) classified by state

VARIETIES OF WALNUTS PLANTED IN AUSTRALIA

The reported numbers of trees of each variety of walnuts are listed in Table 7 1 and also classified by state. The importance of the varieties Chandler, Howard, Vina and Lara is illustrated in Figure 3.

The big disparity between enterprises shown in Figure 6 2 together with the variation among varieties makes it difficult to display the data on a graph. Figure 7 4 shows the data on a logarithmic scale and displays occurrences of small numbers of trees of some varieties.

Variety	NSW	SA	TAS	VIC	WA	Total
Asco	0	50	0	0	0	50
Ashley	12500	0	0	500	0	13000
Chambers No 9	0	0	0	50	0	50
Chandler	151595	1126	32550	52335	3500	230106
Cisco	253	100	0	772	1200	2325
English	0	0	0	300	0	300
Esterhazy	3	0	0	0	0	3
Eureka	0	0	0	125	0	125
Ferjean	10	0	0	66	0	76
Fernette	7	0	0	0	0	7
Fernor	3	0	0	54	0	57
Franquette	895	93	140	6111	0	7039
Hartley	0	0	0	500	0	0
Howard	109383	624	18750	9960	10000	148217
Juglans nigra	0	0	0	2010	0	2010
Lara	71890	0	31250	2	400	103542
Mixed	0	0	3438	36000	0	3438
Mount Irvine	12	0	0	0	0	12
Ramco	2	0	0	0	0	2
Serr	62509	0	0	1004	0	63013
Spurgeon	0	0	0	50	0	50
Tehama	0	0	6250	0	0	6250
Treyve Mayette	208	0	0	30	0	238
Tulare	18933	0	0	4600	6400	29933
V130	0	0	0	97	0	97
Vina	109375	0	31250	4	400	141029

Table 7 1 Reported numbers of walnut trees planted to each variety of walnuts classified by state

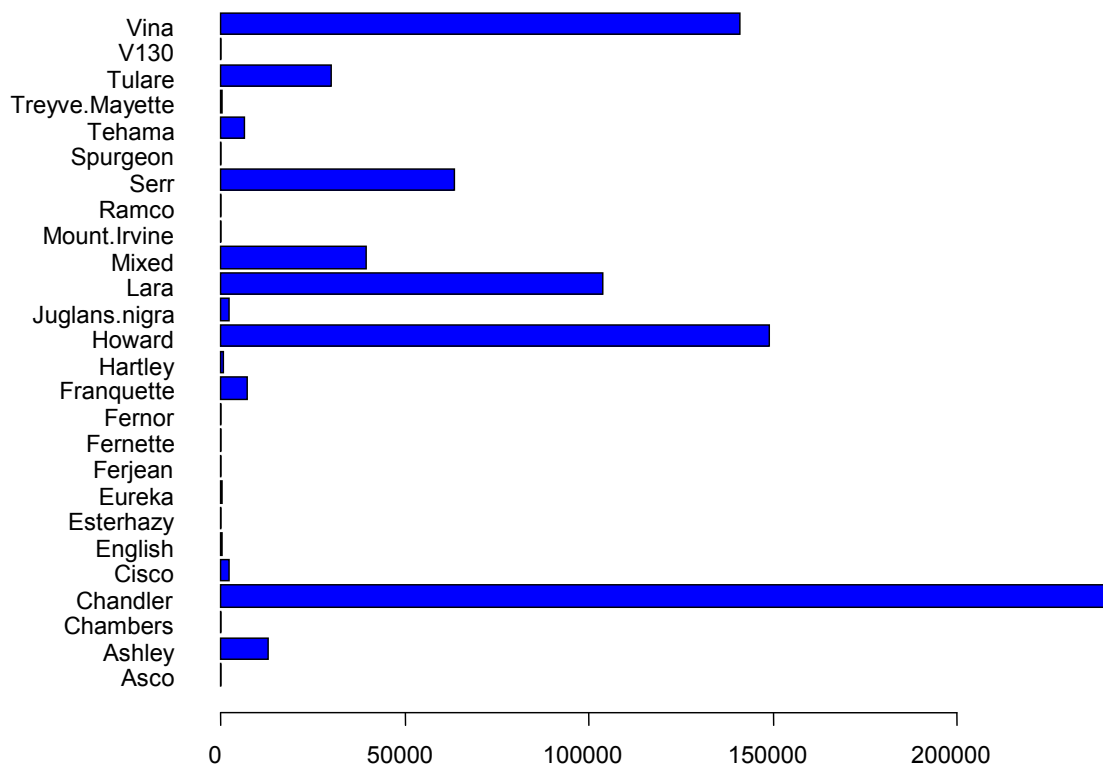


Figure 7 1 Reported numbers of walnut trees of each variety

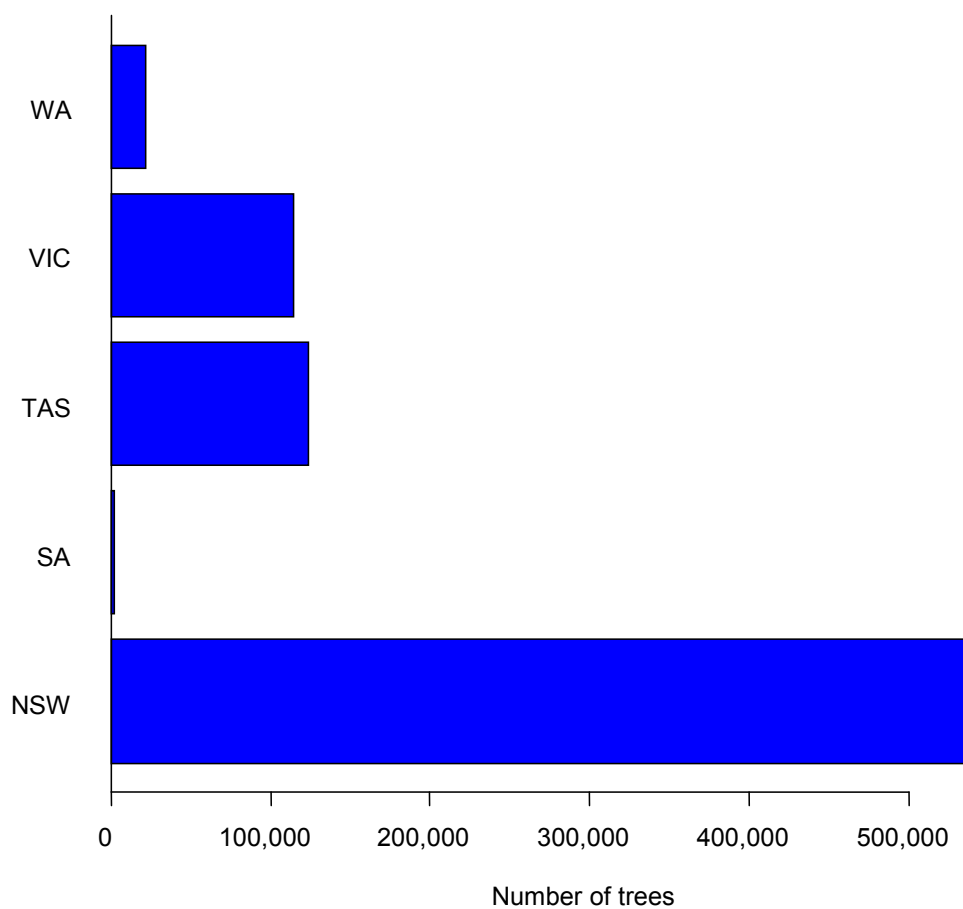


Figure 7 2 Reported numbers of walnut trees in each state

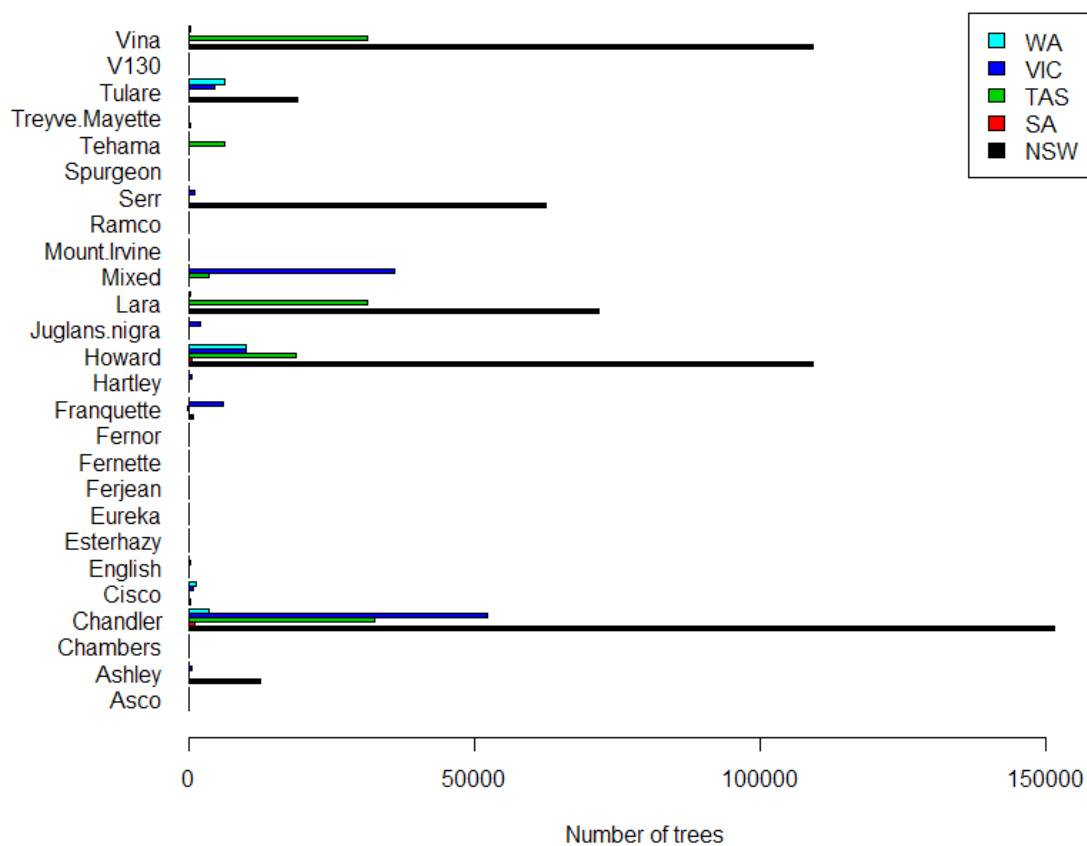


Figure 7.3 Reported numbers of walnut trees of each variety in each state

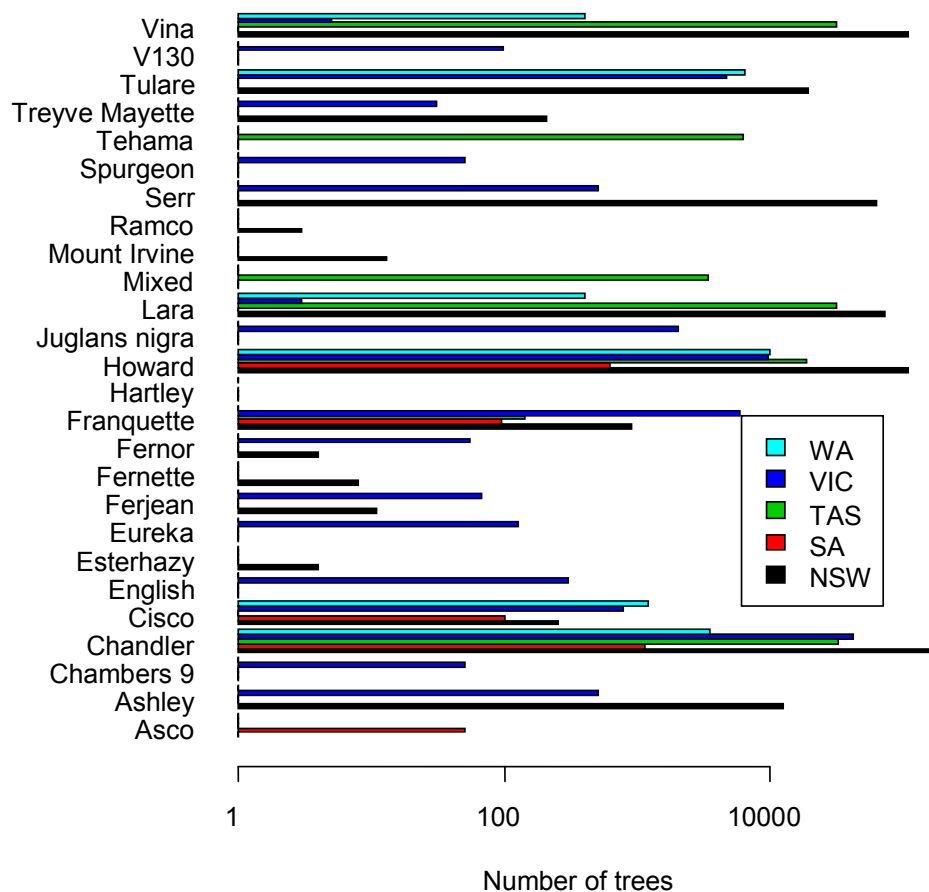


Figure 7.4 Reported numbers of walnut trees of each variety in each state (logarithmic scale)

AREAS PLANTED TO WALNUT VARIETIES

A summary of the areas planted to each variety in each state is given in Table 9 1. Some 25 varieties were recorded but it would appear that some entries are missing (e.g. there is no area for SA). Chandler was the largest planting with 702 ha spread across NSW, Tasmania, Victoria and WA. There were 484 ha of Howard across NSW, Tasmania, Victoria and WA. There were 451 ha of Vina, 331 of Lara and 203 of Serr.

The total area recorded by variety in Table 9 1 is less than the total of 2582 ha given in Table 6 1 indicating that there were 180 ha for which no varietal classification was given, with no varietal areas given for the South Australian walnuts.

Variety	NSW	SA	TAS	VIC	WA	Total
Asco	0	0	0	0	0	0
Ashley	40	0	0	1	0	41
Chambers 9	0	0	0	1	0	1
Chandler	483	0	100	108	11	702
Cisco	1	0	0	1	3	5
English	0	0	0	0	0	0
Esterhazy	0	0	0	0	0	0
Eureka	0	0	0	0	0	0
Ferjean	0	0	0	1	0	1
Fernette	0	0	0	0	0	0
Fernor	0	0	0	1	0	1
Franquette	0	0	0	48	0	48
Hartley	0	0	0	1	0	1
Howard	350	0	60	47	27	484
Juglans nigra	0	0	0	7	0	7
Lara	230	0	100	0	1	331
Mixed	0	0	11	0	0	11
Mount Irvine	0	0	0	0	0	0
Ramco	0	0	0	0	0	0
Serr	200	0	0	3	0	203
Spurgeon	0	0	0	1	0	1
Tehama	0	0	20	0	0	20
Treyve mayette	0	0	0	1	0	1
Tulare	67	0	0	11	17	95
V130	0	0	0	1	0	1
Vina	350	0	100	0	1	451
Total by variety	1721	0	391	231	60	2403
Total by state	1731	10	395	386	60	2582

Table 9 1 Areas planted to each variety of walnuts in each state

The area planted to each variety is shown in Figure 9 2 and the area of each variety in each state is shown in Figure 9 3 and Figure 9 4.

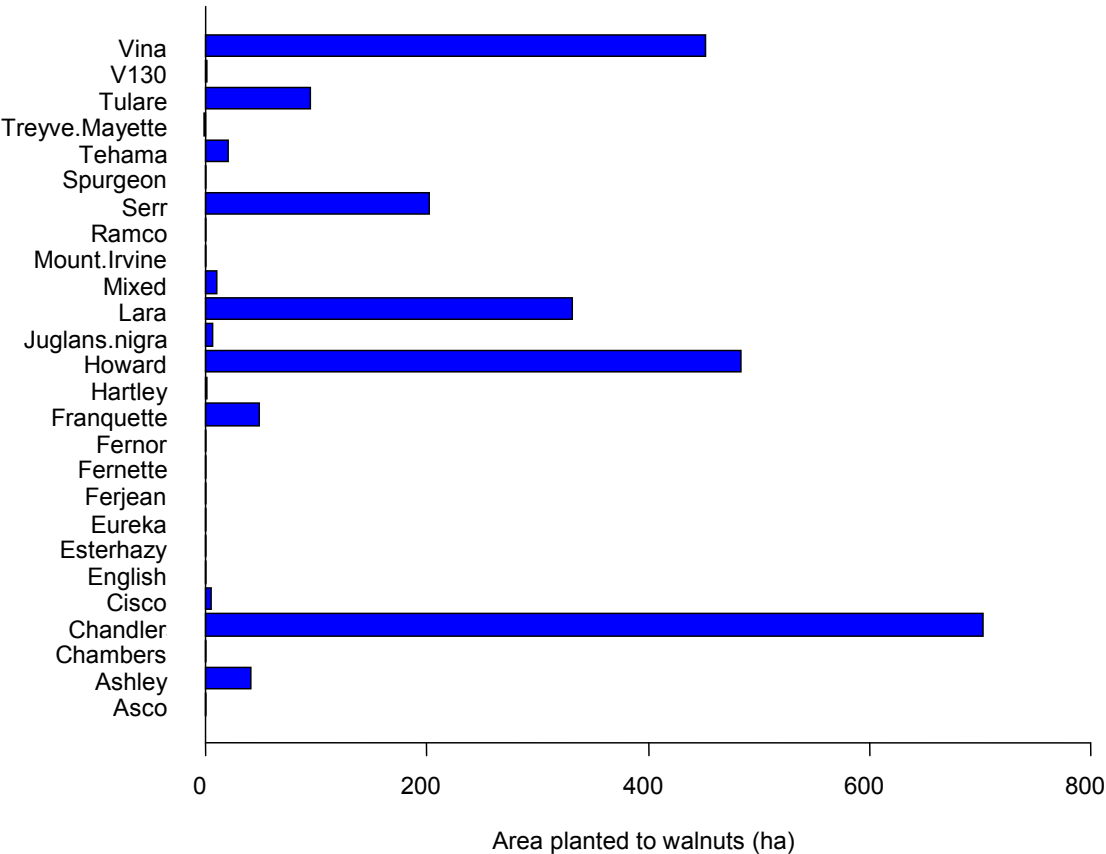


Figure 9 1 Area planted to each variety

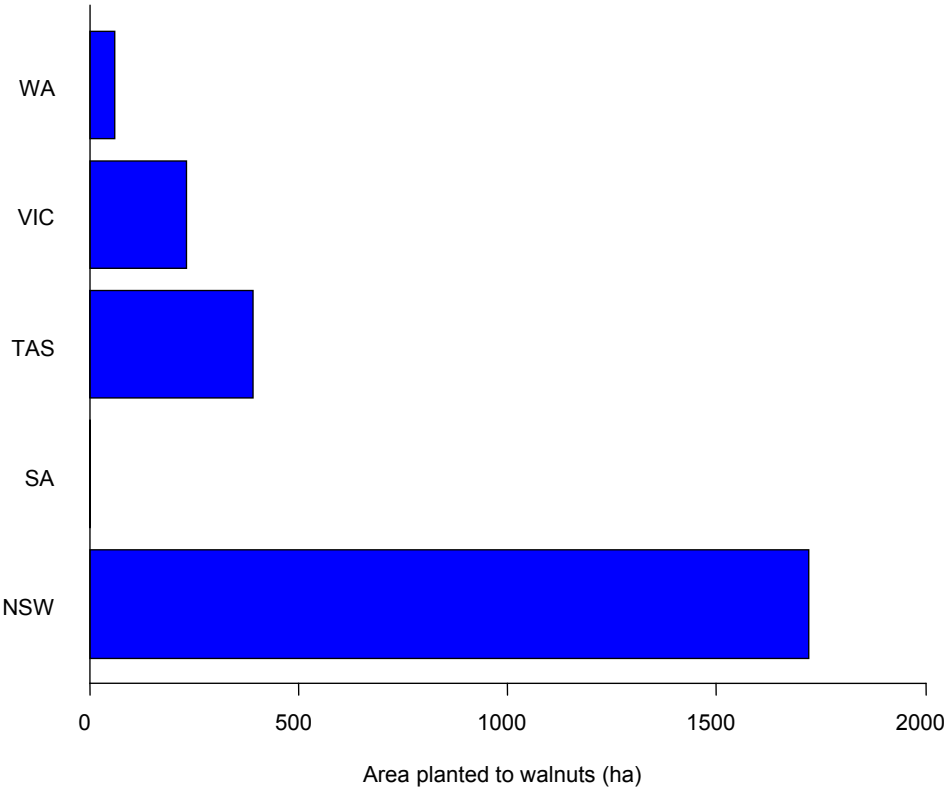


Figure 9 2 Area planted to walnuts of each variety in each state

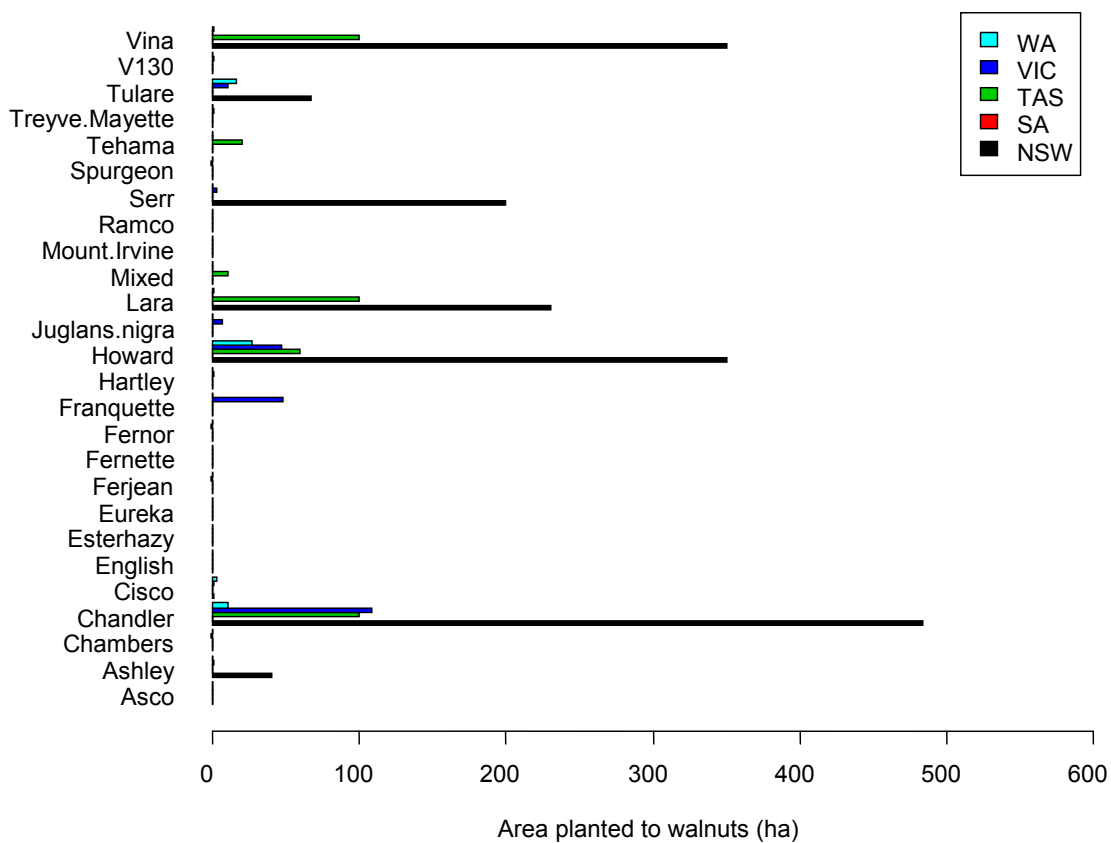


Figure 9 3 Area planted to walnuts of each variety in each state

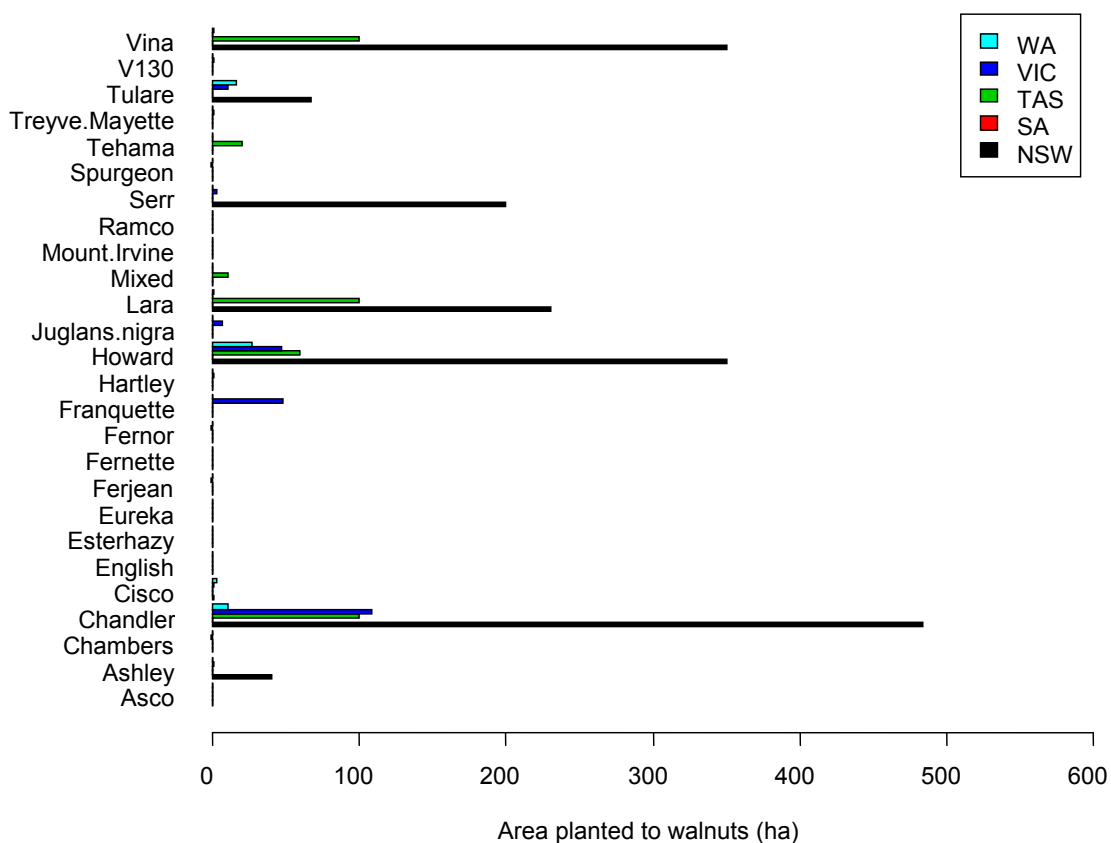


Figure 9 4 Area planted to walnuts of each variety in each state (log scale)

AGE DISTRIBUTION OF WALNUTS

The age distribution of walnut plantations is shown in Table 10 1. The largest cohort is the 8-12 year olds in NSW followed by the 12-20 year olds in Tasmania. There have been limited recent plantings with only 76 ha planted in the last 4 years and 121 in the preceding 4 years.

Age of trees (y)	NSW	SA	TAS	VIC	WA	Total
0-4	21	4	0	51	0	76
4-8	0	0	0	66	55	1201
8-12	1710	4	0	53	5	1770
12-20	0	8	395	10	0	410
>20	1	0	0	10	0	11
Total (age group)	1730	16	395	190	60	2390
Total by state	1730	10	395	214	60	2410

Note: 6 ha in SA and 24 in Victoria were not classified by age

Table 10 1 Age distribution of walnut trees

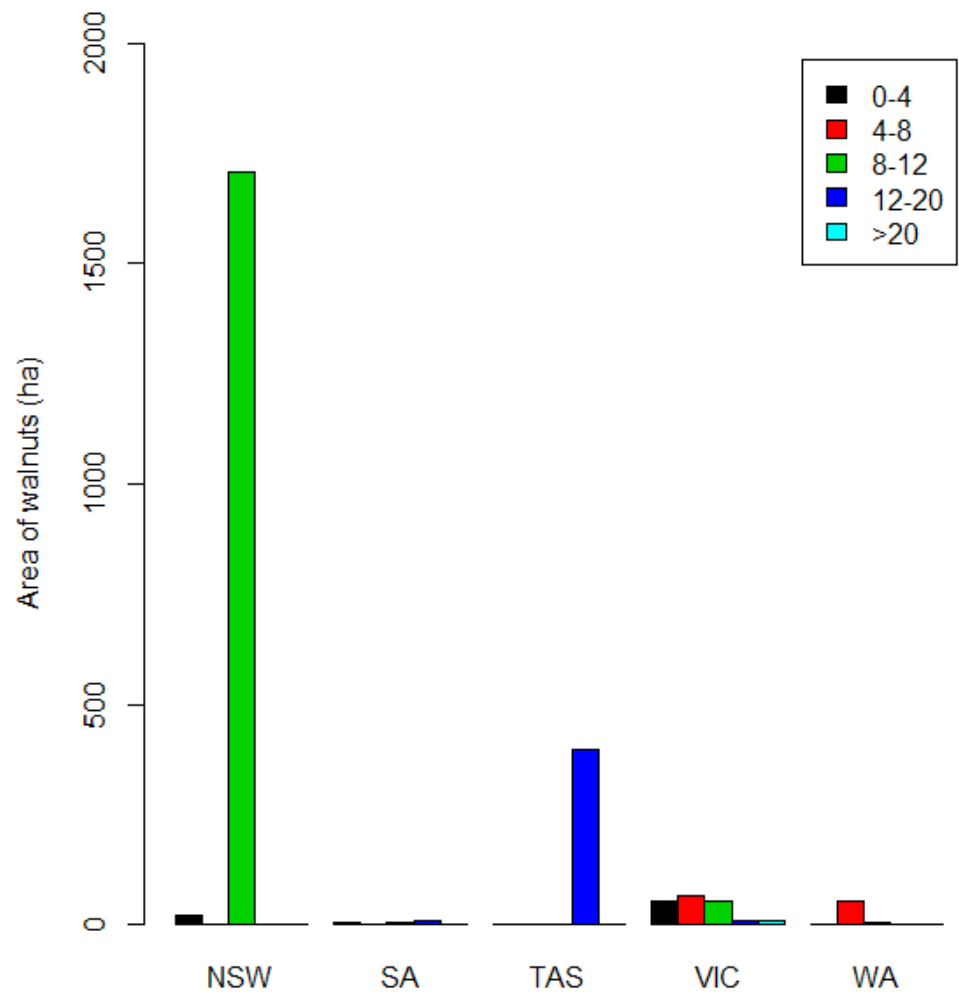


Figure 10 1 Age distribution of walnut plantations classified by state

PRODUCTION OF WALNUTS

A summary of the production of walnuts for 2010-2015 is given in Table 11 1 and illustrated in Figure 11 1. Production has risen from approximately 1350 tonnes per year to almost 6800 tonnes in 2013. That increase can be attributed at least in part to the maturation of the large area of trees in NSW and to a lesser extent increased production in Tasmania (see Table 10 1).

Production in South Australia is small (average 18 t/year) and does not appear to be increasing. WA production has also been small but no data were available for production prior to 2014 so no trend can be observed. Victorian production averaged 120 tonnes per year and has risen from a 31 tonnes per year in 2010 to 235 tonnes in 2015 - this apparent trend may be an artefact due to lack of earlier production data.

Year	NSW	SA	TAS	VIC	WA	Total
2010	750	17	560	31	NA	1360
2011	1500	36	280	50	NA	1880
2012	4500	11	430	139	NA	5080
2013	5500	32	1120	159	NA	6840
2014	5700	14	820	176	37	6750
2015	5600	0	1100	235	12	6950
Average	3930	18	720	120	25	4800

Table 11 1 Production of walnuts in each state for the period 2010 - 2015

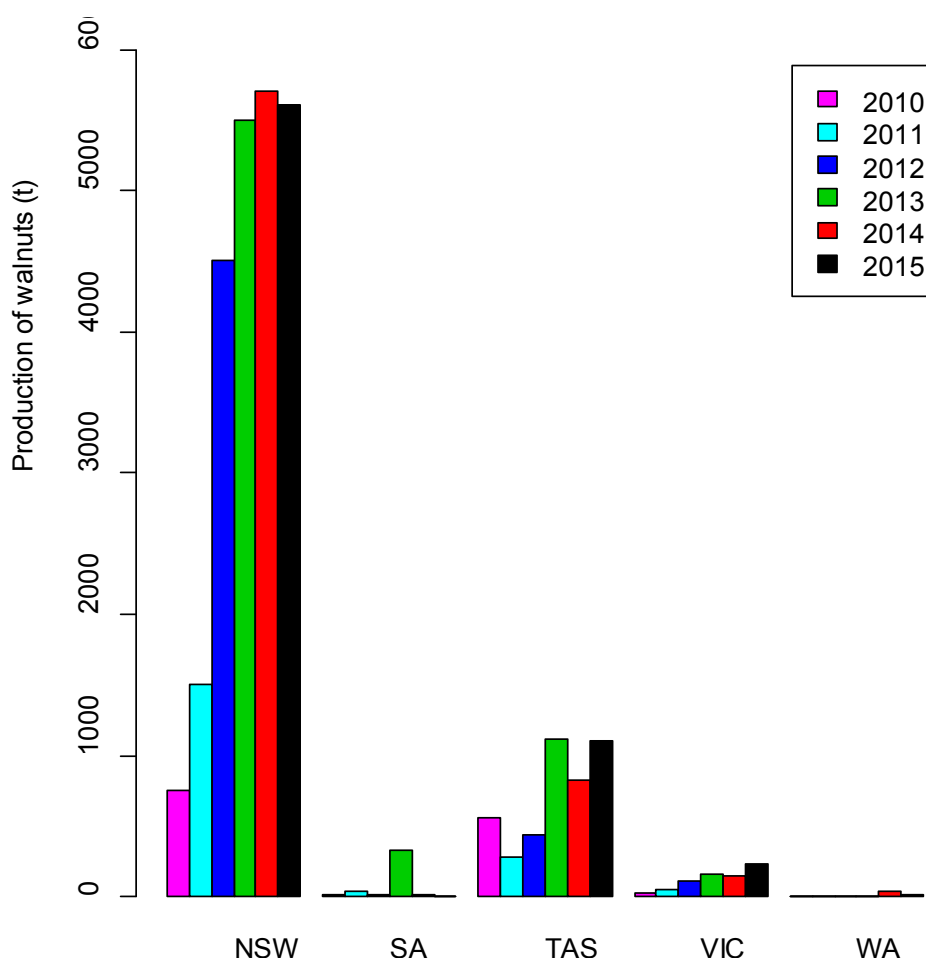


Figure 11 1 Production of walnuts in each state for the period 2010 - 2015

PROCESSING OF WALNUTS

Only 6 walnut growing enterprises reported some processing facilities.

- One facility has de-husking and washing facilities of 300 t capacity and can size 80 t/day. It is one of the few plants that has a shelling facility (25 t/day).
- Only one other facility has an 'as required' capacity for shelling.
- Another has a facility for de-hulling and washing at 90 t/day.
- Another facility can de-hull, wash and dry 8 tonnes/day, size 3 4 tonnes/day and pack 2 tonnes/day.
- Another facility has a facility that can process and pack approximately 0.5 tonnes/day.
- One facility can process approximately 20 kg but did not give the rate per day.

SALES OF WALNUTS

The numbers of enterprises that used each outlet type are given in Table 13 1. Many of the sales were of small volume but the table shows the diversity of outlets that are used.

Outlet	Farm gate	Farmer market	Processor	Wholesale	Retail	Export
Number of enterprises	7	6	5	12	11	3
Proportion of enterprises	0.21	0.18	0.15	0.36	0.33	0.09

Table 13 1 Number of enterprises (out of 33) that sold some walnuts through an outlet type

An alternative approach was to estimate the tonnage of walnuts that were sold through different outlets. This was achieved by multiplying the production of each enterprise (averaged across 2014 and 2015) by the proportion of sales t245 and through each outlet type. A summary of those results are given in Table 13 2. Although farm gate and farmer markets were used by 24% and 19% of enterprises respectively, the volume of sales involved was small. Conversely only 3 enterprises exported walnuts, approximately 2/3 of the total harvest was exported.

The importance of export and the dominance of NSW and Tasmania in production is clear from Table 13 2.

Outlet	NSW	SA	TAS	VIC	WA	Total
Farm gate	1	0.0	0	1.6	0	3
Farmer market	1	0	0.5	14	0	15
Processor	0	0	0	76	0	76
Wholesale	1130	7	289	74	23	1520
Retail	565	0	2.7	28	1.2	600
Export	3960	0	670	12	0	4640
Other	0	0	0	6	0	6
Total	5650	7	960	211	25	6850

Table 13 2 Volume of sales of walnuts (averaged across 2014 and 2015) through various outlets classified by state

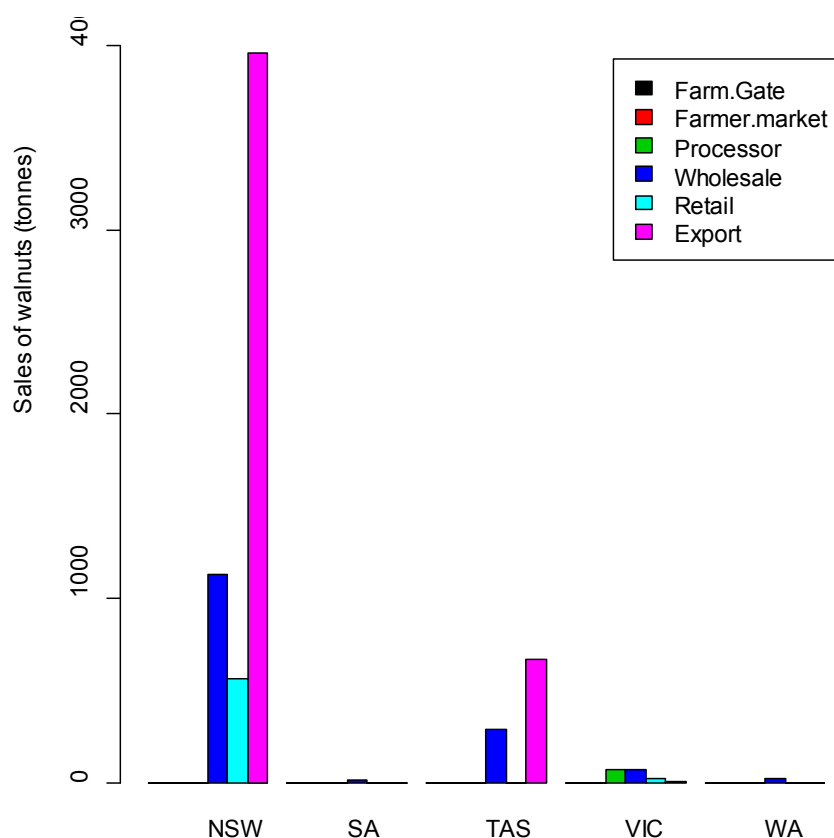


Figure 13 1 Volume of sales of walnuts (averaged across 2014 and 2015) through various outlets classified by state

QUALITY ASSURANCE

A summary of the quality assurance programs is given in Table 14 1. Overall 36% of enterprises used some QA system, but the proportion weighted by area was 93%. NSW had the highest proportion of enterprises with QA (3/5 or 60%) but the weighted proportion was 99%. This is illustrated in Figure 14 1.

Freshcare was used by the highest number of enterprises but *WQA+GC+BRC*, although used by only one enterprise had the highest weighted proportion of 71%. *Global Gap* was used by 3 enterprises (one in each of Tasmania, Victoria and NSW) had a weighted proportion of 17%. This is illustrated in Figure 14 2. One enterprise was certified as organic.

QA system	WA	SA	TAS	VIC	NSW	Total	Weighted proportion
Certified Organic	1	0	0	0	0	1	0.002
FRESHCARE	0	0	0	3	1	4	0.039
GLOBAL GAP	0	0	1	1	1	3	0.172
HACCP	0	0	0	1	0	1	0.004
WQA+GC+BRC	0	0	0	0	1	1	0.711
No QA system	1	2	1	12	2	18	0.071
Total	2	2	2	17	5	28	1.00
Proportion with QA	0.50	0.00	0.50	0.29	0.60	0.36	
Weighted proportion QA	0.08	0.00	0.99	0.56	0.99	0.93	

Table 14 1 Number of respondents using some QA system. Weighted proportions used weights proportional to area planted to walnuts

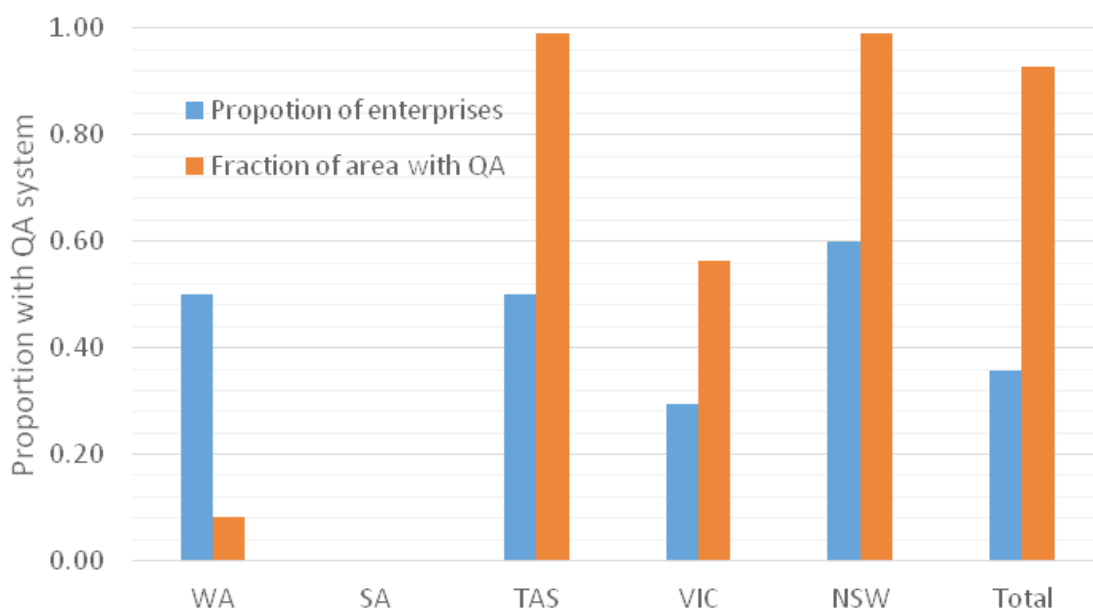


Figure 14 1 Proportions using a QA system in each state

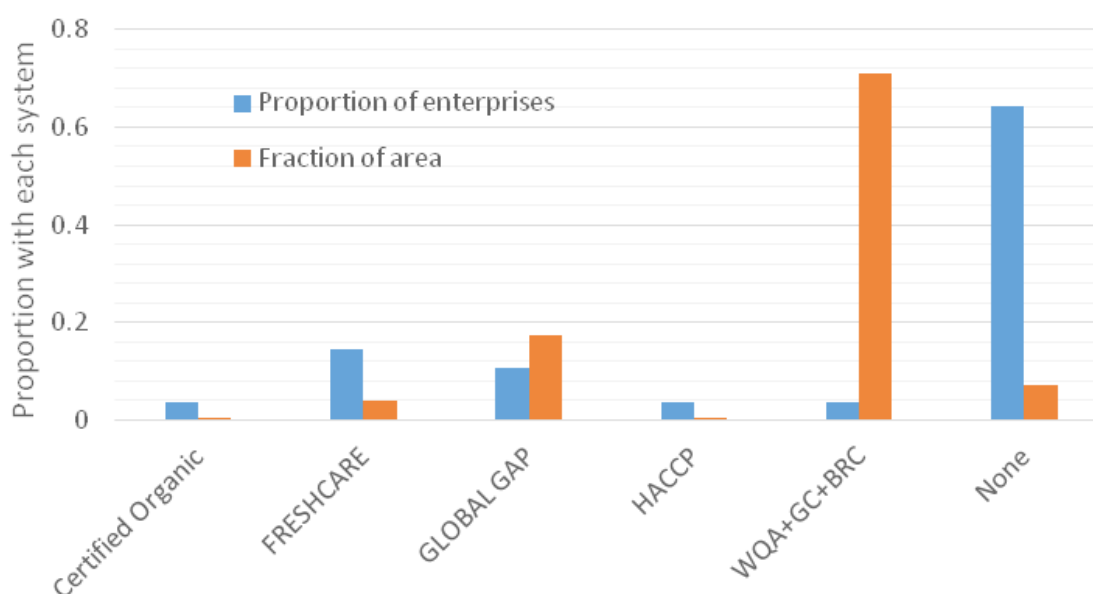


Figure 14 2 Relative amount of use of each type of QA system

BIOSECURITY

The number of enterprises with biosecurity systems in each state is shown in Table 15 1. The highest proportion with biosecurity is NSW and Tasmania whereas there none of the enterprises in WA or SA reported a biosecurity system.

The largest two enterprises did have a biosecurity system, so the proportion weighted by area was 90%.

Biosecurity	NSW	SA	TAS	VIC	WA	Total
No	2	2	1	14	3	22
Yes	0	0	1	3	3	7

Table 15 1 Numbers of properties with a biosecurity system classified by state

DISCUSSION

The walnut industry in Australia is dominated by a few large enterprises. This is apparent from Figure 6 1 which shows over half the production is from a single enterprise. Similarly, the ability to process walnuts is also dominated by a few enterprises – in fact most enterprises did not report any processing facilities.

Production of walnuts has increased from approximately 1360 tonnes in 2010 to approximately 6950 tonnes in 2015. The increase in production is not reflected in new plantings so it must be attributed to tree maturity or better orchard management. The very limited new plantings (Table 6 1) will prevent a rapid expansion of walnut production in Australia

Although there were 25 varieties recorded in the survey, 66% of the area was planted to Chandler, Howard or Vina. There is therefore genetic diversity within the industry.

Approximately 93% of the orchards are over 8 years old. This indicates that there are few new plantings of walnuts in Australia. Although there has been an increase in production since 2010, further increases over the next few years will be limited by the lack of new plantings.

The predominant market for walnuts has been through export (68%) with a further 22% being sold to wholesalers.

There were quality control and biosecurity measures being applied to approximately 90% of the areas planted to walnuts.

REFERENCES

- Moser, CA and Karlton, G. 1973.** *Survey methods in Social Investigations.* Glasgow : The University Press, 1973.
- R Development Team. 2014.** *R: A Language and Environment for Statistical Computing.* Vienna, Austria : s.n., 2014.



APPENDIX A: REQUEST FOR INFORMATION



Australian Walnut Industry Association

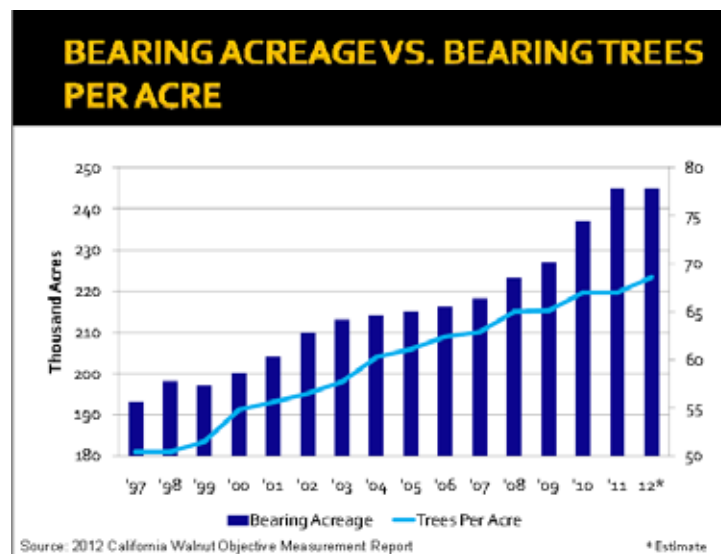
2015 Industry Survey

Statistical Information Request

How Can AWIA help you? What happens if a disease affects my orchard? Why don't walnuts get more publicity? Why didn't I hear about it? Is there someone who I can ask for advice? Where's my nearest processor? What varieties are grown in my area? Can I get more nuts from my orchard? Should I plant more walnuts?

The Australian Walnut Industry is developing at a rapid rate.....is it? This simple question should be easy to answer but a lack of accurate industry statistics makes it impossible for this statement to be made definitively.

AWIA needs your co-operation to compile industry data that can be used to assist the walnut industry. Knowledge of the industry we represent is critical for walnuts to have a voice in organisations such as ANIC, Nuts for Life, Plant Health Australia, Horticulture Innovation Australia not to mention all levels of government.

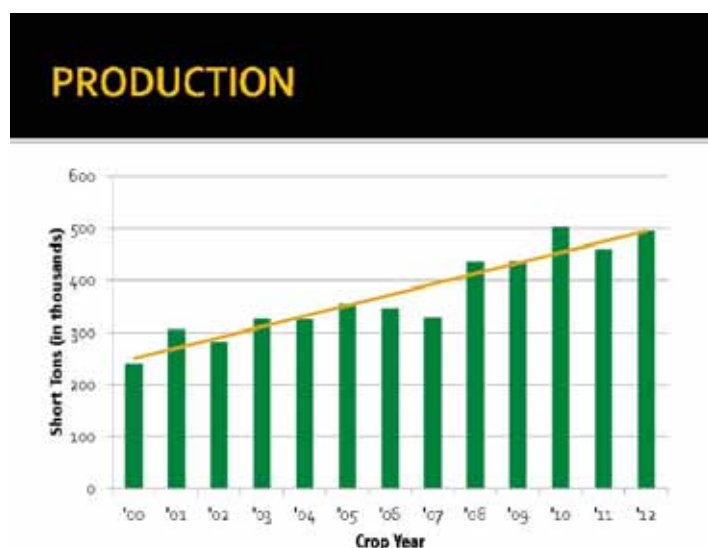


Source 2013 Californian Walnut -State of the Industry

The attached survey has been developed to assist the compilation of data on the Australia Walnut Industry that will be used to accurately report and represent AWIA members. This information will be used to protect the Walnut Industry particularly focused on disease and biosecurity but also on chemical permits and registrations.

AWIA will be surveying all walnut growers and processors and thank you in advance for your input into helping the Walnut Industry grow and protect its members.

Industry data will be only ever be presented as industry data, never individual properties and examples of how this data can be utilised are presented here from the Californian Walnut Commission.



Source 2013 Californian Walnut -State of the Industry

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Australian Walnut Industry Association

2015 Industry Survey

The Australian Walnut Industry Association Inc collects and administers a range of personal information for the purposes of managing the affairs of the organisation and promoting the Australian Walnut Industry. The organisation is committed to protecting the privacy of personal information it collects, holds and administers.

The Australian Walnut Industry Association Inc recognises the essential right of individuals to have their information administered in ways which they would reasonably expect – protected on one hand, and made accessible to them on the other. These privacy values are reflected in and supported by our core values and philosophies.

The Australian Walnut Industry Association Inc is bound by laws which impose specific obligations when it comes to handling information. The organisation has adopted the principles as minimum standards in relation to handling personal information.

Participants with multiple properties please use one survey sheet per property.

1. GROWER IDENTIFICATION

Grower Name	
Orchard Address	
Town	
State	
Contact Number	
E-mail	

2. ORCHARD AREA

Orchard Name	Hectares Planted	or	Acres Planted

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3. VARIETIES

Variety Planted	Trees Planted	Area Planted
Chandlers		
Treyve mayette		
Franquette		
Howard		
Serr		
Vina		
Lara		
Ashley		
Tulare		
Other -		
Other -		

4. AGE DISTRIBUTION

Average tree age (circle)

0-4 4-8 8-12 12-20 20-30 30+ years

5. PRODUCTION

	2015	2014	2013	2012	2011	2010
Orchard Production (tonnes)						

6. SALES

	YES	NO	PERCENTAGE
FARM GATE			
FARMERS MARKETS			
PROCESSOR			
WHOLESALE			

MARKET			
DIRECT TO RETAILER			
EXPORT MARKET			

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7. PROCESSING

Do you undertake post-harvest activities such:

	Y/N	Capacity per day
Hull removal		
Washing		
Drying		
Sizing		
Packaging		
Shelling		
Value adding (further processing)		

8. QUALITY ASSURANCE

Does the property run a quality assurance program (circle)?

FRESHCARE YES NO

SGF 1000/2000 YES NO

HACCP YES NO

GLOBAL GAP **YES** **NO**

BRC

YES **NO**

OTHER:

.....

9. ON-FARM BIOSECURITY PLAN/PROGRAM

Does the property run a On-Farm Biosecurity program (circle)?

YES **NO**

Please return survey to AWIA by any of the following methods:

Email: tco@walnut.net.au

Post: 27 Ludgate Hill Road, ALDGATE. SA. 5154

APPENDIX P: R&D Committee Minutes of the meeting held on the 22nd October.



WALNUT R&D COMMITTEE MEETING

Minutes of the meeting of the Walnut R&D Committee held on Wednesday 21st October 2015 at 3:00 pm
via teleconference

WELCOME:

Trevor Ranford welcomed everybody and thanked them for taking the time to participate on this teleconference.

The aim of this meeting was to re-establish the AWIA R&D Committee and develop a plan going forward to future Walnut research, development and extension.

An initial agenda of topics had been circulated and we would use this to start the process.

Those present had previously agreed to be members of the new R&D Committee.

PRESENT: Michael Lang, Ross Smith and Richard Moxham

Trevor Ranford (AWIA, TCO)

APOLOGIES: NIL

ELECTION OF CHAIR:

Trevor Ranford called for Nominations for the position of Chair.

Nomination: Michael Lang

Moved: Ross Smith

Seconded: Richard Moxham

CARRIED:

Michael Lang accepted the position and took over the meeting.

COMMITTEE STRUCTURE:

Trevor Ranford spoke to the situation in saying that this committee is and would continue to be a sub-committee of AWIA but in the future it could be an important structure for the formation of any Grower Panels under the Horticulture Innovation Australia Limited structure.

Committee members felt that some extra members would be beneficial as they would offer different ideas and opinions. We should target potential members and make contact with them rather than an

open call.

Some additional options for committee members were discussed including:

- a) David McNeil (retired researcher and member of AWIA)
- b) Representative from Goulburn Valley Walnuts preferable with some processing background.
- c) Representative from TIA as they are supposed to be the lead agency for R&D under the National Horticulture Research Network.
- d) A younger grower.

The Committee agreed to follow-up some of these options and prepare a recommendation to the Executive Committee.

ACTION: Michael Lang to make contact with David McNeil and GVW to sound them out with regards coming onto the committee.

Committee to prepare a recommendation to the AWIA Executive Committee of new committee members

Trevor Ranford indicated that acting as secretary to the R&D Committee was part of his current role as TCO. How the process continued would depend on any new arrangements established post 30th November 2015.

MINUTES OF PREVIOUS MEETING:

No minutes

CORRESPONDENCE:

No correspondence.

GENERAL BUSINESS:

Michael Lang made the following introductory comments:-

- Committee needs to have an appropriate method/process to consider and select specific R&D Projects.
- While the strategic topics listed below are important it was essential that we develop a funding model for AWIA to use to implement specific programs/projects.

The committee then held an open discussion that covered the following broad topics

1. Strategic Plan

- Major headings
 - research;
 - extension;
 - biosecurity;
 - statistics
- Specific project topics

2. Funding

- Current funds available
- R&D Voluntary Contribution
- Collective Industry Fund (HIAL)
- Other sources

3. Linkages with other R&D organisations

- NSW Temperate Nut Officer
- Nut Industry Centre of excellence
- Universities
- TIA

The points that came from the discussion were as follows:-

- Major strategic headings and specific projects are all important.
- Once you have a funding model then programs can be developed.
- Need to initiate our own specific R&D Program
- The other process is to establish what important issues are and then see what needs to be or can be funded.
- The important aspect is to establish what makes a difference in production that has an effect/benefit to all the industry and then this will hopefully engage the majority of growers.
- Either way the committee needs to develop a model and present it to the Executive Committee for approval. Once approved promote this to the growers/members.
- Process within AWIA is that if a grower has a concern/issue they need to bring it forward and the R&D Committee would assess it and then facilitate a process of developing a project brief and then a potential process to fund the work. Buy-in by the growers will be important. This is highlighted by the work undertaken in the past by Walnuts Australia.
- The process to examine any issue needs to be established and based around a statistical assessment.
- AWIA needs to clarify the position with HIAL in relation to them being a co-funder of R&D.

Trevor Ranford explained what he saw as the potential funding options including what needs to be done to see if a Walnut Collective Industry Fund could be established to gain matching funds.

- Michael Lang indicated that if Walnuts Australia were to put funds into a CIF then they would want the ability to undertake the R&D.
- Michael Lang reported that they had assisted Jacquelyn Simpson, the NSW Temperate Nut Industry Officer in setting up some initial trials at Leeton in relation to small trials on nutrition. The strong linkages now exist with this position and person for the Walnut industry.
- Different farms can be involved in these or future projects. By using a group of growers in different regions it would be possible to gather broad industry data to contribute to an industry project.
- Need to establish high risk/high priority areas as it will then be easier to establish the project(s) and obtain the necessary funding.
- This sub-committee is an important part of the AWIA structure.

The committee agreed upon the following:

ACTIONS:

Trevor Ranford to draft the following documents:

- a) **AWIA R&D Model including funding options.**
- b) **Walnut R&D Priority list**
- c) **Walnut CIF proposal**

TIME FRAMES:

- Trevor Ranford to submit drafts by 30th October
- Committee to respond by the Drafts by the 8th November
- Papers to be sent to the AWIA Secretary for distribution to the AWIA Executive by the 16th November.

OTHER BUSINESS:

1. David McNeil proposal.

Michael Lang agreed to contact David McNeil and gather more detail on his proposal and then he would bring that back to the R&D Committee for consideration.

Once the R&D Committee had considered the proposal they would then make a recommendation to the AWIA Executive Committee.

2. Extension Program

Trevor Ranford reported that much of his role is about extension/technology transfer and this could continue as part of any future role.

Extension is a good way of engaging growers very simply.

Committee *agreed* that an Extension model be developed at a future meeting.

NEXT MEETING:

Committee agreed that

- a) Frequency of meetings to be decided after the Executive Committee meeting on the 22nd November 2015.
- b) Having meetings in the month between the Executive Committee allowed the committee the opportunity to take information to the next Executive Committee meeting and/or undertake work on issues raised at the Executive meeting.

CLOSE:

Michael Lang thanked everybody for their frank contributions and believed that this set a strong foundation to take Walnut R, D & E to the next level,

Meeting closed at 4:05 pm.

Signed as a true and correct record of the meeting.

.....

Michael Lang

Trevor Ranford,

Chair R&D Committee

AWIA, TCO

.....

Date

ACTIONS:

1. **Michael Lang to make contact with David McNeil and GVW to sound them out with regards coming onto the committee.**
2. **Committee to prepare a recommendation to the AWIA Executive Committee of new committee members**
3. **Trevor Ranford to draft the following documents:**
 - a) **AWIA R&D Model including funding options.**
 - b) **Walnut R&D Priority list**
 - c) **Walnut CIF proposal****and circulate to the R&D Committee for comments.**
4. **Michael Lang to source a proposal from David McNeil and distribute it to the R&D Committee for review.**
5. **Extension model to be discussed at the next meeting.**

APPENDIX Q: Most recent Technical Communications Officer Report.

AUSTRALIA WALNUT INDUSTRY ASSOCIATION INC

EXECUTIVE MEETING – SEPTEMBER 2015.

TOPIC: Technical Communications Officer Report

Since June 2015 the following activities have been undertaken as part of my role as the AWIA Technical Communications Officer:-

a) Industry Meetings

I have attended and participated in a range of industry meetings. While attending on behalf of Chestnuts, Walnuts, Hazelnuts and Pistachios I have always endeavoured to put the specific needs of the Walnut Industry forward.

The meetings include:-

- Industry Liaison Officer Training organised by the Victorian Horticulture Industry Network
- VOH teleconference in July, August and September 2015.
- Farm Chemical meeting with the Department of Agriculture representatives.
- Presentation by Dr Patrick Brown on nut nutrition.
- ANIC Board Meeting.

b) Grower Survey

A revised 2015 grower survey has been prepared and e-mailed to each member via a personal e-mail. Follow-up contacts were made.

35 returns have been received and the documentation has been collated in an excel spreadsheet.

The figures indicate 3,200 hectares with approximately 7,300 tonnes production.

The information has been utilised by a statistician and a draft report is ready for final formatting.

c) Strategic Planning

An initial questionnaire has been prepared seeking input from the members in relation to the issues relevant to

- (1) their individual business
- (2) the broad walnut industry

The information is being collated.

Further planning was undertaken with members on the 22nd June 2015 and all of that has been included into a document.

Utilising the ALL the information a document has been produced and distributed to members for comment.

A number of comments have been received and these have been collated and will be tabled at the next Executive Committee meeting.

d) Communications

'The Kernel' was prepared and distributed in August 2015.

Other material is being distributed either by the e-mail list or through the web site.

e) **Quality Parameters.**

The final version ready for printing is in the last review and amendment.

g) **Winter Workshop.**

The Winter workshop and Annual General Meeting was held on Saturday 22nd August in Shepparton.

The meeting was attended by 35 growers – 29 members and 5 non-members and was well received.

Evaluation sheets were completed and the results collated and distributed to the Executive Committee by e-mail.

There were three sponsors – Monchero, Netafim and Peats Soil.

The Annual report from the AGM has been collated and is being formatted into a document that can be e-mailed to members and added to the website.

h) **BIOSECURITY**

AWIA participated in a review of the Nut Industry Biosecurity Plan through a joint nut industry project being conducted by PHA and funded with matching levies.

A project planning session to review the pest and disease was held on the 25th August in Sydney. Carol Kunert attended and I also participated.

The cost of the project has been undertaken through the TCO project.

Project Overview:

A final milestone report will be prepared and submitted to HIAL on the 30th November 2015.

The TCO project is within budget and the development and finalisation of a number of documents and technical bulletins will be achieved within the budget.

Trevor M Ranford
Technical Communications Officer
Chestnuts Australia Inc

18th September 2015.