

Australian Vegetable Industry Soil and Land Management Knowledge Exchange

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ARRIS Pty Ltd

Project Number: VG07146

VG07146

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Australian Vegetable Industry Soil and
Land Management Knowledge Exchange

(VG07146)

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Final Report

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Arris Pty Ltd

Australian Vegetable Industry
Soil and Land Management
Knowledge Exchange
(VG07146)

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VG07146: Australian Vegetable Industry Soil and Land Management Knowledge Exchange

Final Report:

1. Media Summary

The Australian Vegetable Industry Soil and Land Management Knowledge Exchange was developed as a tool for growers, researchers and industry representatives. It was intended to be much more than your average website as it endeavoured to become one of the largest specialised industry-based soil and land systems sites in the world.

The Knowledge Exchange provides the primary target audience of growers and industry consultants with scientifically reviewed resources that have been developed and presented in a language and manner that increases accessibility and promotes acceptance and adoption.

The Knowledge Exchange is unique in that soil and land management information, relevant to vegetable growers, is harvested and then synthesised to give the audience a synopsis of the information. This aids growers when determining relevant information and deciding to go further and in which direction. The information and tools harvested are reviewed by a forum of industry stakeholders, scientists and professional editors to avoid duplication of material, verify appropriateness and ensure the information is scientifically sound.

The exchange also incorporated a forum where growers could submit questions and seek advice from fellow farmers or members of the Exchange's forum panel, this feature has been hidden for the time being, while the site is regaining momentum as a go-to source of soil information. The other interesting element is that this site started out as being dedicated to the vegetable industry and it has now been expanded to encompass the whole of horticulture, with users able to submit and upload content they find and feel is useful – this content is also be reviewed by the Exchanges Forum panel prior to upload to once again ensure the quality and standard of material presented.

2. Introduction

The Knowledge Exchange came to be as a result of a number of industry drivers, and growers were increasingly seeking quality science based soil and land management information; highlighted by:

1. A series of workshops conducted throughout Australia (Queensland, Tasmania and South Australia) in 2006/2007, where industry and researchers identified the following gaps as priorities for further research to:
 - measure and benchmark good farm practices for improved soil health,
 - understand the impact of crop rotations and tillage on soil structure, erosion and disease suppression,
 - better manage organic C for improved soil health and water use efficiency of soils, and
 - meet the increasing gap between knowledge and changing farm practice (communication, extension and training).
2. The strong commitment from industry to support the HSSF Healthy Soils for Sustainable Vegetable Farms: Ute Guide Project. For example:
 - Interest in Soil Awareness Day workshops with more than 200 registrations of interest (with little promotion).
 - Attendance at initial workshops has been at full capacity (registrations have had to be limited).
 - Growers registering at the workshops for the full soil training days.
 - Growers commenting that the success of this project has been the language used in the Ute Guide, the balance between scientific language and practicality.
3. Information overload being identified as a problem for growers; thus the Knowledge Exchange being developed as a 'one-stop-shop' for soil and land management information.
4. The need to meet the communication needs of the HAL Soil Health Program.
5. The desire to add value to the AUSVEG – Australian Vegetables Magazine and VEGENotes series.

The knowledge exchange was proposed as a specific site targeting the Australian Vegetable Industry; with the intention of becoming one of the largest specialised industry based soil and land systems site in the world, where the primary target audience is be growers and industry consultants. Due to unforeseen problems with hosting, the site was unavailable for a number of months and once Arris identified an avenue for re-instating the site we also recommended extending the site to encompass the whole of horticulture rather than just vegetables. There were two reasons for this, many growers are involved in other crops not just vegetables and growers can learn from each others' experiences regardless of crop type.

An important feature of the Knowledge Exchange is that it contains scientifically sound resources, as well as being delivered in a manner that increases grower accessibility and acceptance. The Knowledge Exchange Forum's reviews of site content ensures that content does in fact meet grower needs, provides the level of support required and is scientifically sound. An initial desktop study on soil information was conducted, with the resulting information compiled into an excel spreadsheet and used to populate the Knowledge Exchange. The desktop study was undertaken using our linkages with the major research agencies (CSIRO, SARDI, State DPIs, GRDC, AWRI and PIRSA) and Universities. More than 650 pieced of relevant information were identified and categorised, with a synopsis created for

each prior to being entered into the database. These pieces of information were then categorised, with a synopsis created for each, which allows for targeted searching.

3. Technology transfer strategy and methodology/activities

Throughout the life of the Knowledge Exchange project we have actively sought media exposure through industry publications, at industry events and through targeted databases. Prior to the launch of the website we organised the following:

- Promotion in the Vegetable Australia Magazine; the editor agreed to include articles on the knowledge exchange promoting the website, its availability for growers and the value it would add to the industry
- AUSVEG conference (May 2009)
 - Presentation as part of the main program
 - One-on-one training as part of the AUSVEG industry stand

We also had editorial coverage regarding the site in a number of editions of the Vegetables Australia magazine in the second half of 2009.

We also developed an advertising campaign (at Arris' cost) to announce the new URL and advise industry that the site was again operational after being taken down from the internet and being inaccessible for some time. Due to Vegetables Australia not being a plausible avenue for advertising, we secured advertising with Good Fruit and Vegetables (circulation of 5000 across Australia). Arris designed an advert and a postcard insert which were the foundation of this campaign. Scanned images of the adverts and the postcard can be found in Appendix B - Advertising.

Below is the schedule for this advertising campaign:

November 2010 Edition	12cm x 7col (25.7cm wide) full colour
December 2010 Edition	12cm x 7col (25.7cm wide) full colour
December 2010 Edition	A5 full colour postcard insert
January 2011 Edition	12cm x 7col (25.7cm wide) full colour

The Knowledge Exchange has also been publicised to its members through regular email updates when new information was uploaded, when changes were made to the site after the audience survey and review was conducted and when the website was re-activated after some months of being inaccessible.

4. Evaluation and measurement of outcomes - impact and adoption

As part of the Knowledge Exchange project, a review process was incorporated so that the site could be assessed and adapted part-way through the project if needed. This review was conducted in early 2010 with industry leaders. We provided them with some background information on the website, asked them to take a look at the site and posed a few questions about its functionality. Some of the participants provided their feedback as part of a teleconference, while others simply emailed their feedback back to Arris.

Following is a summary of their comments.

- **Do you like the general appearance... does the look reflect the character of the industry?**

All of the participants were happy with the appearance of the site, saying the colours and images suited the industry. Some suggested the main body text could be made a bit darker, to make it easier to read. Many provided positive comments about the simple design and layout.

- **Are the header and menu buttons easy to find and use? Do their labels reflect the content?**

Review participants were happy with the heading labels, and found it relatively easy to move through the site using these prompts. However, there was a suggestion to make the buttons larger.

- **Is the website easy to navigate - can you easily access content and information?**

Participants agreed the site was easy to navigate, with relatively easy access to information.

- **Does the search engine deliver its primary function – is it easy to use and can you find the information you are looking for?**

Participants found the search engine to be helpful. However they did have some suggestions for improvement. One participant commented that his search 'keyword' needed to be very specific to get a more accurate list of results. Another participant suggested the list of results could be structured better, saying 'it's a bit like going through a shopping list'.

- **Does the information contained on the knowledge exchange meet your needs – or can it be improved?**

Generally participants found the site to contain a lot of the information they were after, with one participant adding he liked the idea that he could add information to the site if he felt something was missing. Another participant said he particularly enjoyed reading the case studies on the site. He said they were presented clearly, and the information was interesting to read. He enjoyed being about to read about another grower who had tried some alternative land management methods.

Other comments:

Some believed there was too much information on the home page they read through. They suggested this could be placed somewhere else on the site, to give a more detailed description of the project – preferring for the front page to just give a brief overview of the site/project.

Discussion regarding the possible inclusion of information from international sources, such as the United States of America.

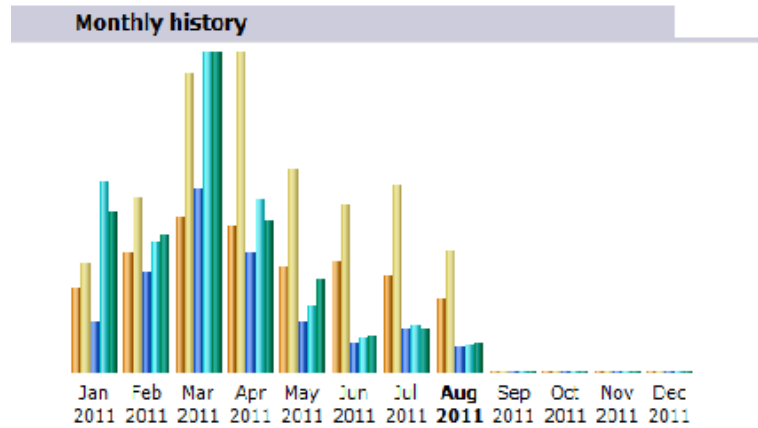
Participants agreed that if the project does extend its scope to international research, it would be best to only take information from areas with similar soil types to Australia (ie.

California, USA). At the least, participants suggested to include links to the websites of international organisations with soil and land management information. Participants felt it was important to highlight when the information was from overseas, as a warning to growers to consider their own local environment when reading the information.

A stock-take of the information on the site as of 18/11/2010 and was provided as an attachment with Milestone 106.

It is also important to note that a number of changes were made to the site as a result of the review; both functional and aesthetic changes were made.

In terms of measuring the success of the Knowledge Exchange, it is difficult to do so at this point as the momentum of the site was lost when it was made inactive and it is still building up. As can be seen below the site has dropped little at the moment, but was quite high earlier this year just after the advertising campaign we conducted. It is also interesting to note that this site has progressed from being primarily used by Australian visitors to now being used by overseas visitors more so.



Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2011	99	128	326	3086	23.91 MB
Feb 2011	142	207	1623	2109	24.65 MB
Mar 2011	183	352	2969	5148	57.60 MB
Apr 2011	173	377	1936	2800	27.44 MB
May 2011	125	240	323	1082	15.87 MB
Jun 2011	130	197	434	554	6.49 MB
Jul 2011	114	222	537	770	7.85 MB
Aug 2011	86	143	415	445	5.41 MB
Sep 2011	0	0	0	0	0
Oct 2011	0	0	0	0	0
Nov 2011	0	0	0	0	0
Dec 2011	0	0	0	0	0
Total	1052	1866	9763	15994	175.21 MB

5. Discussion

This project started out with great momentum and great progression and was highly attractive to prospective sponsors, due to the period of being inactive the site lost momentum and attractiveness to potential sponsors. As a result we have not been able to secure the sponsors we would have liked. Regardless of this fact, Arris believes this is an important resource in regards to soil and land management and it needs to remain active for as long as possible, as a result we have undertaken to sponsor the site to remain live and updated for the following 2 years. This equates to \$5000 worth of sponsorship from Arris. As a result we only need to secure another \$5000 in sponsorship to ensure the site is regularly monitored and new information is gathered and verified prior to upload. We believe the Knowledge Exchange is a valuable tool for the Australian Horticultural Industry and are proud to be able to support the continuation of the site. It is our best interest to make sure we secure the sponsorship, otherwise we will be funding it ourselves.

Another important point for discussion is the grower forum, at present we have hidden the forum in the background as it hadn't been used for more than 12 months. We do receive information via the feedback form, but growers weren't using this as an information sharing and networking tool as we had hoped. The thinking behind removing it from public access for now is that once the site regains momentum it might be a useful tool and can easily be returned to public view. However, having it in public view with no interaction is more detrimental to the site than it is useful. We would like to keep this hidden from public access until momentum returns and then reactivate it with some regular, strategically posted information to encourage the audience to participate and use the forum as an information sharing and networking tool.

The only element of this project that has not been completed to our own satisfaction, is a final review of the website. We would like to undertake the review in June 2012 as this allows the site to continue to gain momentum and gain an audience similar to the extent it had prior to being made inactive in 2010. As we will be maintaining the website for a further 2 years through our own sponsorship it would be in our interest to conduct this review and make any adjustments so as to maintain the integrity and appeal of the site, which would then make the site even more appealing to prospective sponsors.

6. Recommendations

As we requested in the previous milestone report, we have now opened the Knowledge Exchange up to encompass all of horticulture, this is a gradual build that will take some time. As mentioned previously, we are in the process of developing relationships with other similar sites to create a network of sites that encompass all of horticulture without overwhelming growers with too many sites to choose from.

In the future it would be worthwhile for the Knowledge Exchange to be incorporated into the Vegetable Industry Knowledge Management program as that is the vehicle that is intended to extend information to the vegetable industry members and it would allow for grower communication to be integrated and working together to send a concise message to the grower audience.

7. Acknowledgments

We would like to acknowledge the organisations that contributed to the success of this project through their valuable contributions:

CSIRO

Compost for Soils

Department of Primary Industries, Parks, Water and Environment, Tasmania

Department of Primary Industries, Victoria

Department of Agriculture and Food, Western Australian

Land and Water Australia

New South Wales Primary Industries (Industry and Investment NSW)

Northern Territory Primary Industries (Department of Resources)

Primary Industries and Resources South Australia (PIRSA)

QLD Department of Environment and Resource Management

South Australian Research and Development Institute (SARDI)

8. Appendix A – Advertising

Postcard (scanned) inserted into the December edition of Good Fruit and Vegetables



The site is a one-stop-shop for soil and land management information for the Australian Vegetable Industry. It is set to become one of the largest specialised industry-based soil and land management systems in the world. The site is fully interactive with users able to discuss soil issues with one another on the Forums page, as well as submit information to be listed on the site.

The website houses links to more than 600 factsheets, bulletins and publications.

Log on today to access a wealth of information!

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COVER STORY

Bee mite may be BIG trouble

APIARIST Ben Hooper (pictured), Timinara, South Australia, knows the impact that the Asian honeybee could have – but he's in the minority. Ben said that, unlike in Queensland where the public had been made aware of the pest via media coverage and state government campaigns, the South Australian public, including farmers, were in the dark about the rogue bee.

"It's been amazing the response in Queensland. But the average Joe down here would not know," Ben said. Ben said there had been an incursion of dead Asian honeybees discovered in South Australia already. Of particular concern to Ben is the fact Asian honeybees could become vectors for varroa mite, a hive-crippling insect which could decimate the Australian honey industry. "Every country with major commercial beekeeping industries has seen their populations devastated by the mite," he said. "I believe it would be naive to think varroa mite won't get into Australia." With this in mind, Ben is completing his 2010 Hufield scholarship on new apiculture techniques for hive and disease management. His study is supported by the Rural Industries Research and Development Corporation Honeybee Research and Development Program. Ben works in conjunction with his father Robert in their bee-keeping business, which has 1200 hives managed for pollination services and production of up to 100,000kg of honey a year. He plans to visit the world's



major honey production centres in New Zealand, the US, Canada, Argentina and China, researching chilling techniques which can be used to manage parasites and to improve the capacity of hives to provide commercial pollination services. Ben said part of the problem in declaring how serious the Asian honeybee threat is to the wider public is an industry issue. "It really comes back to it being our own problem, and as far as dealing with other industries, we're getting there slowly, but we haven't painted ourselves as a united force as far as getting the attention of the other related industries and improving the reliance they have on our industries."

ASIAN INV

THE Australian fruit and vegetable industry has refused to assist with the cost of eradicating the rogue Asian honeybee, despite it being a major threat to pollination throughout the country.

At the most recent meeting of the Asian Honeybee National Management Group on September 7, working under the Department of Agriculture, Fisheries and Forestry (DAFF), the group confirmed the Australian Honeybee Industry Council was the only organisation to agree to contribute financially towards the exotic pest's eradication.

According to the DAFF communiqué: "Industries reliant on bees and bee-pollination services have been approached at peak representative level to assess whether they would be beneficiaries if the Asian honeybees were eradicated and so may wish to contribute resources. No industry body other than AHIC has agreed."

Since the detection of an Asian honeybee nest in the mast of a fishing boat in Portsmith, Cairns, in May 2007, more than 188 swarms or nests have been found and destroyed.

Just last month another swarm was discovered in gutting at the Cairns airport.

The Asian honeybee is an invasive species which adversely impacts populations of European honeybees by competing for floral resources, robbing managed hives and transmitting disease.

The bee, which has an aggressive stinging behaviour, can also become a pest in urban areas by establishing nests in houses.



The European honeybee (left) and the Asian honeybee (right). Photo: AP/Europhoto



The Asian honeybee which poses a threat to Australia's European honeybee population.

Not just another insect

WHAT harm can an introduced bee do? Plenty, according to Biosecurity Queensland (BQ), the authority at the frontline of the Asian honeybee (*Apis cerana*) fight.

Asian honeybees compete with managed honeybees for floral resources. They have an aggressive robbing habit, taking honey from managed hives which may cause hives to die from starvation.

Asian honeybees are also a natural host for varroa mites, a major threat to Australia's honeybee industry, as well as other unwanted bee pests and diseases.

According to BQ, the Asian honeybee aggressively protects nests and will sting people. A sting from an Asian honeybee could cause an anaphylactic

reaction in allergy-prone people. The species multiplies rapidly and may take over nesting sites for native bees, birds and native mammals, threatening biodiversity.

The Asian honeybee itself is about 10mm long. It is fast and erratically, is less hairy than the European honeybee, and has distinct yellow and black stripes on the abdomen.

It has been found nesting in free hollows under the eaves of houses, in the recesses under the floor of houses, in letterboxes, in a cable reel, in a disused boat freezer and in various other urban locations.

On average, the Asian honeybee is expected to replace the European honeybee (*Apis mellifera*) on a one-for-one basis.

The Asian honeybee is a natural host for the dreaded varroa mite – a parasite that attacks developing bee larvae or adult bees. While the mite is not yet present

State and federal governments fire of 'picking up tab'

CHAIRMAN of the Pollination Program, Gerald Martin, believes the question of who should foot the bill for eradicating Asian honeybee is a vexed one. Beginning with the fact a lot of industries still believe they don't rely on bees for pollination.

"I don't think there is any doubt that the issue is an issue for the

whole of industry, so if that's the case, then there shouldn't be any doubt that there should be a contribution from the whole of industry," Mr Martin said. He said a coordinated approach to finding the money to destroy the Asian honeybee would be a good start.

"The truth is, no-one has planned for any of this, and everyone has budget commitments right up to their eyeballs," he said. "I know the Queensland and federal governments aren't too impressed with it at the moment because they are picking up the tab."

"It's going to have repercussions. It's going to make it tougher to deal with the Federal Government if all the industries can't agree on their share of the tab."

"I think most reviews of who should pay, in the case of this Asian bee, underestimate the problems these little buggers will provide for the general public."

"Not just in backyards, but even our national parks, native flora and small animals in general."

"It's a very costly job and the Cairns exercise has been going on for a fair while now and we've got our fingers crossed we will stop the little beggars, but there is no guarantee."



The Australian Vegetable Industry Knowledge Exchange has moved! www.avike.com.au

The site is a one-stop-shop for soil and land management information for the Australian Vegetable Industry. The website houses links to more than 600 factsheets, bulletins and publications.

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avocado

discussion of potential hurdles within the market as well.

The biggest concerns for the industry relate to the maintenance and improvement of current markets – for example, preparation for potential imports from other countries, increases in Australian production, and working to increase domestic consumption.

Discussion was also held on some additions to the Infocado reports, which are planned for 2011.

Plans include placing wholesale prices in Infocado reports and also adding some consumer demand information along the lines of shopper penetration, purchase frequency and spend per occasion.

According to Avocados Australia, the aim of these additions is to improve the linkage between supply information and consumer demand in contributor's minds and their decision making.

Good Fruit & Vegetables was there.



RIGHT: Jo Embry, program manager, Avocados Australia, toasts the summit participants



Maree Tyrrell, office manager, Avocados Australia and Gunjan Tandon, marketing manager, Horticulture Australia Limited (HAL).



RIGHT: David Chenu, general manager marketing, Horticulture Australia Limited (HAL) and Antony Allen, CEO, Avocados Australia.



RIGHT: Michael Maschi, business manager, avocados, Moraitis Group Pty Ltd, and Michael and Helen Flynn, owners and managers, Balmoral Orchard.



ABOVE: Paul Schramm, avocado sales, Murray Bros and John Walsh, owner and manager, Simpson Farms.



ABOVE: Russell Delroy, managing director, Delroy Orchards and Jim Kochi, chairman, Avocados Australia.



RIGHT: Midge Munro, communications officer, New Zealand Avocado Industry Council and Chris Frost, JP Exports Ltd NZ.



LEFT: Lols and Jim Carney, owners and managers, SuperPak.

Congress briefing

AVOCADO industry delegates were given a better understanding of exactly how momentous next year's VII World Avocado Congress will be when Australia plays host.

The information was flowing at the third Infocado Summit in St Kilda, Melbourne in October.

It was one of the last major gatherings of Australian avocado industry stakeholders before Avocados Australia hosts the event from September 5-9, 2011 in Cairns, Queensland.

The premier event on the world avocado calendar is only held every four years. At the Infocado Summit, the audience was given an outline of preparations so far, including the commitment to use online social networking sites to promote the event. Online registration, sponsorship and exhibition opportunities are now open.

Visit www.worldavocadocongress2011.com



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Irrigators: license all MDB water

By ALAN DICK

THE National Irrigators Council (NIC) has called for all water used in the Murray-Darling Basin to be licensed.

Including that held in farm dams or used in forestry plantations. The call is part of its submission to the Murray-Darling Basin Authority's (MDBA) guide to the Basin Plan, which aims the lack of reliable science behind the guide, and its "just add water" solution to environmental problems.

The NIC supports its case by quoting some of the MDBA's own comments on the limitations of data it used to arrive at its proposed sustainable water diversion limits (SDLs), which seek cuts in irrigation water entitlements of up to 37% and higher.

The NIC recommends "interception" activities such as farm dams and water used in forestry plantations be treated the same as watercourse diversions and be licensed. It says the council is "extremely concerned" about the implication in the guide that "while interception and watercourse diversions are both considered forms of 'take', only water-course diversions can

actually be cut to meet new SDLs". It labels "highly doubtful" estimates of water interceptions, including figures of 230 gigalitres for the Lachlan Valley and 344GL for the Murrumbidgee.

The submission is also highly critical of the process undertaken by the MDBA and the government, describing it as "drawn-out, opaque, confusing and ultimately damaging for our members and their communities".

Its 10 recommendations include a call for the MDBA to take a wider view of river health than just hydrology, and provide solutions other than "just add water". It said the MDBA should present to governments a list of recommended environmental works and measures projects, along with indicative costs, water savings and environmental outcomes.

It should provide scientific justification for its use of 60 to 80% of natural end-of-system flows as the main indicator of

environmental health. The submission recommends the Water Act, under which the Basin Plan is being prepared, be amended to allow for equal consideration of social, economic and environmental impacts, and to adequately consider non-flow related environmental problems.

It cites non-flow issues such as land use, riparian vegetation, noxious weeds, invasive species and foreign fish species such as European carp.

In relation to the science, the submission notes it was "astounding" how often participants in MDBA technical workshops in November were told there was "more work to do" on issues, or that the information had not been "fully developed yet" or that staff were "aware of the limitations" of the data or science used.

It quotes from the MDBA guide "the current level of understanding of ecological responses to environmental water is relatively poor", and there is "a lack of available scientific data and research to elicit specific empirical cause-effect relationships for many environmental assets".

Rain 'shouldn't dilute water reform focus'

FLOODING rains should not mean a diminished focus on water reform, according to the National Water Commission (NWC). Meeting in Canberra last month, the NWC called for all parties to stay the course on water reform and engage constructively with the Murray-Darling Basin planning process.

National Water Commissioner, Chloe Munro, said the commission was concerned that water reform could potentially be sidetracked by recent events including drenching rains in

Australia's east and the resignation of the chairman of the Murray-Darling Basin Authority, Mike Taylor.

"The reality is that developing a whole-of-basin plan is a difficult and complex task - indeed it is one of the largest and most challenging water-planning exercises in the world," Ms Munro said.

"However, it must be recognised that the development and implementation of a single plan that covers the entire basin will be a huge step forward

for water management in Australia, and is integral to realising the full benefits of water reform.

"The commission's view is that under the Water Act 2007, we can have a Basin Plan that delivers on Australia's agreed National Water Initiative commitments."

The commission said implementation of Australia's blueprint for water reform, the National Water Initiative, had, since 2004, brought very real benefits to the Australian community.



Eager mango growers and industry players scramble to grab a free copy of the newly released book, *The Mango Field Guide*, at the book's launch at Berimah Farm. - Photo courtesy: NTDoR.

Territory launches Mango Field Guide

THE part of Australia where mangoes ripen first has delivered the most comprehensive mango field guide ever produced for growers.

The Northern Territory Department of Resources (DoR) released the guide last December at Berimah Farm, Makogon Road, Berimah.

The *Mango Field Guide* has been developed as a practical and portable book that can be carried into the orchard, and is an ideal diagnostic tool for growers, agronomists, extension officers and researchers.

The new version of the guide is far more comprehensive with new high-resolution photographs, and can be uploaded electronically and viewed on computers and various handheld computers or smart phones.

DoR believes the guide will be an essential resource to help growers to identify pests, beneficial insects,

diseases and disorders of mangoes. The guide will be distributed to mango growers in the Northern Territory, Queensland and Western Australia.

In launching the guide, DoR acknowledged Horticulture Australia Limited for funding the Delivering Mango Technology project, as well as support from industry including the Northern Territory Horticulture Association, the Australian Mango Industry Association and the Northern Territory Mango Industry Association.

The authors of the book also thanked mango growers and operators of commercial packing sheds for their support in the development of the publication.

● Copies of *The Mango Field Guide* can be obtained by contacting the NI Department of Resources on (08) 8999 2258.



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