

Nov 2008

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Top stories

New rhizobia strains build acid tolerant lucerne potential



FFI CRC scientists Nigel Charman and Erica Marshall discover pink nodules in pot experiments with field soils from Victoria

The search for acid tolerant lucerne rhizobia is well on the way with a field collection trip to NSW by FFI CRC scientists **Nigel Charman** (SARDI) and **Richard Hayes** (NSWDPI) uncovering new strains.

“At the end of the last project we had one strain which showed some potential to be more acid tolerant than the current commercial strain. So we went collecting and trapped more than 150 new strains from 22 soils in NSW from sites where lucerne was persisting in highly acidic soils,” Nigel said.

The strains have since been screened in a low pH nutrient solution system, resulting in the selection of 33 promising strains. Nigel then worked with **Dr Elizabeth Drew** and **Ross Ballard** (both from SARDI), using PCR molecular methods to determine how many of these strains were unique. As a result, 17 of the 33 rhizobium isolates passed the test. The application of additional molecular techniques will allow strains to be recovered and identified from field trials, and open up opportunities for IP protection.

A series of glasshouse pot experiments are now underway by **Erica Marshall** (SARDI) to determine if these improved strains can nodulate lucerne in a range of acidic soils from NSW, Vic and SA.

Ross and Nigel are now working with project participants, **Shoba Venkatanagappa** (NSW DPI) and **Matt Denton** (Vic DPI) to prepare field trials for 2009 and to determine if the solution culture results can be repeated in the field.

For more information about this research, contact:

* Alan Humphries: humphries.alan@saugov.sa.gov.au

CRC collaboration to share salt and waterlogging tolerance research with University of Tokyo



University of Tokyo researchers visit the successful salt-tolerant wheat field trial near Pingaring WA with the salt-tolerant amphiploid(left), barley(middle) and wheat parent (right). Featured in the photograph from left to right are Imran Malik, Katsuhiko Shiono, Tim Colmer, Michael Lloyd, Ed Barrett-Lennard, Mikio Nakazono, Hirokazu Takahashi

FFI CRC and UWA's School of Plant Biology played host to three researchers from the University of Tokyo who recently visited WA as part of a collaborative research project to determine the genes responsible for waterlogging in cereals.

University of Tokyo's **Prof. Mikio Nakazono**, **Dr Katsuhiko Shiono** and **Hirokazu Takahashi** visited the State as part of their research to discover which genes control waterlogging root adaptations; especially the formation of aerenchyma – the airy tissue found in roots of plants and a barrier to radial oxygen loss in roots. Genetic traits that work together to provide plant roots with a 'snorkel' that enables them to breathe in waterlogged soils.

Their initial experiments conducted on rice, a highly waterlogging tolerant plant with a sequenced genome have made significant progress. Pivotal to the progress has been the selection of treatments and sampling times based on earlier physiological experiments by Dr Shiono and **A/Prof. Tim Colmer**, along with laser micro-dissection expertise to examine tissue-specific gene transcripts. Prof. Nakazono has been at the forefront of efforts to develop and use this technique to study target tissue uncontaminated by adjacent cells.

The collaboration was recently boosted with the inclusion of a CRC Salinity-bred sea barleygrass-wheat amphiploid into the program. Cross bred with wheat by University of Adelaide's **Dr Rafiq Islam**, sea barleygrass is a waterlogging tolerant wild relative of wheat with root traits similar to rice.

Dr Imran Malik was recently awarded a Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship and has joined Professor Nakazono's laboratory for the next two years. The collaboration has been facilitated via agreements between the FFI CRC, GRDC and University of Tokyo.

A highlight for the visitors was a trip to the sea barleygrass-wheat amphiploid trial near Pingaring with **Dr Ed Barrett-Lennard**. The amphiploid has performed much better than its wheat parent on saline, waterlogging-prone land. The visitors also took to the opportunity to view saltland pastures and chat to host farmer, **Michael Lloyd**, and FFI CRC (DAFWA and UWA) staff, about the challenges of managing dryland salinity.

For more information about this research contact:

* Dr Tim Colmer: tdcolmer@cyllene.uwa.edu.au

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From the CEO

This issue of e-news is jam packed with activities that epitomise our greatest strength – collaborative capacity across a multitude of disciplines. A strength that is bringing new opportunities to the CRC such as international collaborations and a series of well-attended workshops and field days throughout Australia as this edition demonstrates.

These activities reflect a CRC that is performing well. This is more than just a CEO's proud claim, as I have been involved in eight CRCs for the past 15 years and reviewed two, and I know these characteristics well.

If you take a moment to read the recently completed [FFI CRC Annual Report for 2007-08](#), you will see that our key outcomes for the first year of operation suggest the same:

- High quality science and postgraduate education outputs
- Icon projects receiving a lot of industry interest with some close to commercialisation
- High level of science and technology uptake through adoption and commercialisation activities.

Above all, we are starting to deliver value to our Participants because of our strong leadership and nurturing of a collaborative culture on a national scale. Based on my experience, I can say with conviction that FFI CRC is off to a fantastic start.

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Business matters

Project commissioning

Foundation Project commissioning is well underway with three (9%) of all of the projects now executed by the CEO. Of the remaining projects, three (9%) are being finalised with MLA and/or AWI, 11 (33%) finalising details around background IP or in-kind contributions, 12 (36%) are waiting on signatures from one or more project participants and three (9%) have been fully commissioned. There are four (12%) projects seeking additional funding or under further development.

Head Office has greatly appreciated the rapid response from Participant representatives in arranging the sign off for Project Details. **Dr Julia Wilson** has been working with AWI, GRDC and MLA to amend project details to satisfy their requirements while complying with the Participants' Agreement. The CRC would particularly like to thank the project teams and associated participant organisations for their patience in the lead up to commissioning these projects.

Project payments

Foundation Project payments will be made upon completion of milestones. The first project payment will be made once all project participants have signed the Project Details document and it has been executed by the FFI CRC CEO. An executed copy will then be sent to all project participants with an invoice request for the first milestone. Once the invoice is received the Research Contracts Manager will approve the invoice and the Finance and Operations Manager will then arrange payment.

Milestone reporting

As project payments will be made on approval of milestone reports, project leaders will need to complete a milestone report for each project milestone in the Project Details document. This will involve a half-page summary of how the milestone has been achieved, except for projects that have MLA or GRDC funding. The milestone report template will be sent to the project leader once the project commissioning has been completed. Project leaders will send the milestone report to the program leader to complete their section. The milestone report is then uploaded to Centric (the CRC's online project management system) or emailed to the Research Contracts Manager. **Dr**

Mike Ewing (Research Director) will approve the milestone report and the Research Contracts Manager will request the invoice. Finance and Operations Manager will then arrange payment.

Notices regarding activities/publications

Project leaders are encouraged to inform **Dr Mike Ewing** (Research Director) of any project-related publications before submitting them for external release. Final versions of project publications will be stored on Centric.

IP and Project Leader's workshops

FFI CRC project leader workshops were held in four locations over the last four months to improve CRC researcher skills, and to hold open discussions about CRC processes and any potential issues regarding project management.

These workshops were focused around Intellectual Property (IP), and project and administration management including centric were recently held. Two were held in Perth, one in Adelaide and one in Melbourne. The final workshop will be held at Wagga Wagga in February next year. At two of these meetings, CRC Board Director **Kathryn Adams** volunteered her time to share her knowledge with the project leaders. Kathryn is an expert in IP management and Senior Research Fellow with the Australian Centre for Intellectual Property in Agriculture (ACIPA). In addition, Kathryn also provided a unique insight into how the CRC Board considers projects and their management. Many thanks to Kathryn for her time and efforts as well as her positive outlook for the CRC.

Centric next steps

Centric (ffi.crccentric.com.au) is now up and running with almost all project leaders, program leaders and state adoption managers trained in the basic use of this program. So far, Foundation Project details have been entered including milestones, team members and their FTE effort. Project leaders are encouraged to use Centric to track milestones and store project documents. All project team members have access to Centric (user name: firstname.surname; password: fficrc) and can upload or download project documents or photographs. Centric can also be used to view milestones and access contact information. The CRC encourages the use of this valuable tool, particularly for milestone reporting.

Centric is also being used for the management of CRC wide applications. The first quarter of effort reporting will be managed online by participant administrative representatives. The CRC is in the process of setting up a strategic reporting module to simplify the reporting process to the Board (quarterly) and the Commonwealth (annually). Please contact **Dr Julia Wilson** if you have any problems accessing Centric.

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- * Mark Stickells, Commercial Director: (08) 6488 1429; mark.stickells@futurefarmcrc.com.au
- * Christina Sanderson, Finance and Operations Manager: (08) 6488 1954; christina.sanderson@futurefarmcrc.com.au
- * Dr Julia Wilson, Research Contract Manager: (08) 6488 1846; julia.wilson@futurefarmcrc.com.au

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Adoption & commercialisation

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State adoption managers

SA Node

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WA Node

For further information contact:

* David Bicknell: (08) 9881 0222; dbicknell@agric.wa.gov.au

VIC Node

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NSW Node

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Communication

Kondinin take out communication excellence prize at awards



The Kondinin Group team accepting its award for Excellence in Rural Communications. From left Verity Todd, Debbie Boxall, Josh Giumelli, Laureta Wallace, Amanda Di Cino, Peta Temple and MC of the night, ABC WA Country Hour producer Richard Hudson

In November, the Kondinin Group took out the top prize at this year's [Rural Media Association of Western Australia's \(RMAWA\)](#) awards night, winning the award for *Excellence in Rural Communications*.

Kondinin Group was nominated by the CRC for its outstanding contribution to the creation of high quality communication products such as *Focus on Perennials* and *Future Farm* magazines. Their efforts have significantly contributed to raising the CRC's national profile in the media and rural Australia during the past 12 months.

Media coverage

This month, media coverage has focused on the series of *EverGraze* field days that happened throughout Vic and NSW including an ABC radio interview with [Dr Jim Virgona](#). [The Land](#) also featured an article on the FFI CRC Perennial Grass Workshop recently held in NSW.

Publications.

FFI CRC's inaugural Annual Report (2007-08) is now available for [download](#).

For more information contact Communication Manager:

* Greg Lawrence: (08) 6488 7353; greg.lawrence@futurefarmcrc.com.au

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Program activities

P1 Future Livestock Production

Enriching South Australia's dry Upper North Region



Anna Dutkiewicz (FFI CRC) addresses the crowd at the Upper North Farming Systems Annual Field Day at Morchard, September 2008

The Upper North Farming Systems (UNFS) is a GRDC-funded project based in the Upper North low-rainfall (<350 mm) cropping region of South Australia. In the next five years, the CRC will aim to increase water use efficiency in the region by 10% and help build farmers' capacity to make confident management decisions in a variable climate.

The UNFS group runs activities for farmers including field days and workshops to extend current agronomic findings. The group also has an extensive cropping trial program to identify cereal varieties, including drought tolerant lines, which perform best in the marginal cropping region of the Upper North to increase water-use efficiency.

In autumn 2008, the group was approached to be part of the FFI CRC *Enrich* project which is assessing how suitable 15 different forage bush species are to the growing conditions of the region. Once the plants are fully established, the trial will be grazed and the impacts on the plants recorded. Most species in the trial are native to Australia although one comes from Spain.

FFI CRC researcher **Charlton Jeisman** said visiting the *Enrich* trial was part of the UNFS annual Field Day held in September which proved very popular among landholders.

"It provided a great opportunity to discuss its relevance and how its findings can be applied to local farming systems. Many questions were raised and enthusiasm for the project was felt among growers," Charlton said.

The site selected for the *Enrich* trial is on very marginal cropping land consisting of heavy clay flats and limestone rises and is typical of the land found in the Upper North. Since most farmers have at least a few hectares of this kind of country, they are keen to see how the trialled species perform in terms of growth, production and species palatability.

The *Enrich* project in the Upper North complements previous and current UNFS projects investigating the feasibility of using perennial native grasses as pasture species in rotation with crops and as a livestock feed source.

"With rising cropping input costs, particularly in the low rainfall regions of the Upper North where yields are often low, there is little wonder why interest in low rainfall grazing systems is growing," Charlton said.

Although the trial was only planted in July and the plants are still relatively small, the trial is growing well following good rains in August and November.

For more information, contact:

Charlton Jeisman: jeisman.charlton@saugov.sa.gov.au

For further information about Program 1 contact:

* Joe Jacobs: (03) 5561 9946; joe.jacobs@dpi.vic.gov.au

P2 Future Cropping Systems

Drought tolerant perennial legumes project

The *Drought Tolerant Perennial Legumes* project is developing resilient perennial forage legume cultivars compatible with cropping systems in the low and medium rainfall mediterranean regions of southern Australia. Through plant discovery and adaptation of existing species, the project will breed new forage legume cultivars that have improved drought tolerance and can be grown in marginal cropping soils with relative ease.

The project will create opportunities for these new cultivars to be included, as either permanent or short-term phase pastures or as pasture-cropping systems, in mixed cropping and grazing systems. A key component of the project will be the breeding and selection of new varieties within three key genera of Bituminaria, Cullen and Medicago to produce commercially viable cultivars before the end of the CRC's life cycle. The project will also field test a group of selected species to assess their potential to adapt to target environments and suitability for future domestication.

The project is a key FFI CRC research activity that is developing new farming systems to create positive impacts on production and natural resource management in a drying climate.

For information about this project, contact:

* Craig Revell: crevell@agric.wa.gov.au

For further information about Program 2 contact:

* Alison Bowman: (02) 6938 1628; alison.bowman@dpi.nsw.gov.au

P3 New Woody Crop Industries

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For further information about Program 3 contact:

* Paul Turnbull: (03) 5441 7301; Paul.Turnbull@dpi.vic.gov.au

P4 Farming Saline Landscapes

For further information about Program 4 contact:

* Ed Barrett-Lennard: (08) 9368 3441; egbarrettlennard@agric.wa.gov.au

P5 Biodiversity & Water

For further information about Program 5 contact:

* Ken Wallace: (08) 9334 0341; ken.wallace@dec.wa.gov.au

P6 Economic, Social & Policy Analysis

INFFER Team visits Kangaroo Island



The INFFER Team (from left to right) Jennifer Alexander, Jo Davidson, Anna Roberts, Geoff Park, Lyn Dohle, Grant Flanagan, Kate Burk and Anna Dutkiewicz at the south coast dune revegetation site on Kangaroo Island

Anna Roberts (formerly Ridley, NSW DPI), **Geoff Park** (Victorian North Central CMA) and **Jennifer Alexander** (DPI Vic) recently visited Kangaroo Island (KI) to introduce the *Investment Framework For Environmental Resources* (INFFER) project to the KI NRM Board and staff. The team were invited to the island by **Michael Good** from the SA Department of Water Land and Biodiversity Conservation (DWLBC) in conjunction with the KI NRM Board.

The two-day trip was also organised by the Perennial Connections Team in SA (**Anna Dutkiewicz** and **Trevor Dooley**). On the first day, Anna presented an overview of INFFER at the NRM Board meeting with the presentation stimulating lively discussion with plenty of questions that continued over lunch.

The next day, the Team was shown around the island by **Lyn Dohle** from Resource Solutions SA (RSSA), **Grant Flanagan** and **Mark Morris**, **Jo Davidson** and **Kate Buck** all from the KI NRM Board. The day was spent visiting some key NRM assets on the island and finding out about the various threats they faced.

“We started by looking at the key water resource assets including the Cygnet River and Middle River catchments and discussed their vital water supply and planning issues. The group then travelled south passing the bushfires scars from December 2007 to visit wetlands affected by salinity and several coastal areas. We then proceeded to the Dudley Peninsula in the east, stopping to examine some KI NRM Board roadside burning trials investigating plant diversity in post-burn regeneration,” Anna said.

“Finally, we passed through American River and Pelican Lagoon, both popular tourist destinations experiencing development pressure, and the nearby critical habitat of the nationally-threatened Glossy Black Cockatoo.”

The Team were extremely grateful to the KI NRM Board for the opportunity to brief them on INFFER and to the staff who drove them around and explained the NRM assets unique to the island.

“They are looking forward to assessing how well INFFER aligns with State and regional investment decision-making,” Anna said.

For further information, contact:

* Anna Dutkiewicz: dutkiewicz.anna@saugov.sa.gov.au

For more information about Project 6, contact:

* Dr Mike Ewing; mike.ewing@futurefarmcrc.com.au

P7 Education & Training

First *EverTrain*TM salinity management workshop held in SA



EverTrain presenters **Tania Midgley**, **Nick Edwards** and **Gordon Stopp** work with participants on developing a salinity management plan for a case study property

An important FFI CRC training milestone was reached recently with the completion of the inaugural *EverTrain* regional training workshop in South Australia. Held at Murray Bridge from 28-30 October, the workshop focused on making the 21 participants, which included regional Landmark agronomists and SA Murray-Darling Basin Natural Resources Management Board local action plan and project officers, more familiar with salinity and the ways it can be managed.

In what will become standard practice for delivery of accredited *EverTrain* training, the Murray Bridge workshop was coordinated by a 'local' FFI CRC representative, Andrew Harding (Rural Solutions SA). The official workshop program structure, delivery and assessment were overseen by members of the *EverTrain* National Assessment Services team, NSW DPI Advisory Officers **Damien Doyle** and **Tania Midgley**.

Participants also heard from a variety of presenters including specialist research and extension staff from NSW DPI, Rural Solutions SA, FFI CRC, SA Department of Water, Land, Biodiversity and Conservation and SARDI.

According to NSW DPI Advisory Officer **Tania Midgley**, understanding the practical aspects of salinity management was a valued part of the workshop.

"A training highlight on the final day was a presentation by a local landholder who shared his various experiences in managing saltland, highlighting what had and hadn't worked on his farm. It is invaluable to have landholder involvement in these sorts of training programs and this presentation helped bring together all the issues discussed over previous days," Tania said.

The training also included a field trip to the FFI CRC *Enrich* research site at Monarto where saltbush and other plant-based salinity management farming systems are being trialled.

NSW DPI Advisory Officer **Damien Doyle** emphasised the value of being able to go away from the workshop with practical skills to back up the theory.

"The training concluded with the participants developing a salinity management plan for the case study property visited during the field trip. This task brought together the various salinity management concepts discussed at the workshop and provided an opportunity to transfer this understanding to a real situation," Damien said.

"This involved participants undertaking assessments, including water sampling and testing techniques and the development of a soil-use map. Each participant successful in these tasks gained two nationally recognised competencies that can be used to gain a qualification in Certificate IV in Agriculture or Conservation and Land Management."

This inaugural *EverTrain* event has highlighted the benefits in having partnership approaches to training delivery that is unrestricted by state boundaries. The *EverTrain* National Assessment Services Team has the ability travel to each state and assist in the delivery and assessment of

training activities to help participants progress towards their Certificate IV. All that is needed now are more local coordinators willing to help organise further workshops.

For more information about *EverTrain* contact:

* Deb Slinger; deb.slinger@dpi.nsw.gov.au

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For further information about Program 7 contact:

* Scott Glyde: (02) 6933 2385; sglyde@csu.edu.au

For more information about CRC postgraduate students and activities contact:

* Daryll Richardson: 0409 312 574; drichardson@agaveeducation.com.au

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Snippets

Wanted: Your unused copies of SALTdeck



Following the soft launch of the [Saltland Genie website](#), the CRC is looking for any lost, homeless or under-utilised copies of SALTdeck. This fantastic resource from the [Sustainable Grazing on Saline Lands \(SGSL\)](#) program, which is now available in electronic form on *Saltland Genie*, is an invaluable in-the-field resource that perfectly complements the *Saltland Genie*. However, the real things are now extremely rare.

While the decision to do another print run is yet to be made, the CRC is trying to round up any unused copies. These extra copies will be provided to trainees at any *Saltland Genie* training or information sessions, so participants can maximise their use of *Saltland Genie*.

If you have a stash of – or even just one – unused SALTdeck cards please contact **Dr Nick Edwards** at edwards.nick@saugov.sa.gov.au to arrange delivery.

***Understanding Practice Change* symposium a success**



Understanding Practice Change by Farmers presenters (From left to right), **David Pannell, Neil Barr, Frank Vanclay, Graham Marshall, Roger Wilkinson and Allan Curtis**. Absence from the picture is **Rick Llewellyn and Geoff Kaine**

Understanding how farmers and other rural landholders adopt new practices was the focus of the *Understanding Practice Change by Farmers* symposium held this month.

The symposium brought together leading researchers from around Australia to provide insights into the current thinking about what drives practice change and adoption and the ways they can be influenced.

Vod and podcasts of symposium presentations will soon be available from the Understanding Practice Change [website](#) for downloading.

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Coming events

SOILS 2008

1-5 December 2008, Palmerston North, New Zealand

Further information: www.soilsconference.co.nz

Email: info@soilsconference.co.nz

Bioenergy Australia 2008

8-10 December 2008, Melbourne, Vic

Further information: www.bioenergyaustralia.org

Email: bioenergy@conferenceaction.com.au

AARES 53rd Conference

11-13 February 2009, Cairns, Qld

Email: shanna@aomevents.com

Salinity Exchange Conference

19-20 February 2009, Albury, NSW

Further information: www.murray.cma.nsw.gov.au

National Outlook Conference

3-4 March 2009, Canberra, ACT

Further information: www.abareconomics.com/outlook

WA Farmers Annual Conference

25-27 March 2009, Perth, WA

Email: chrismarris@wafarmers.org.au

The NSW Sustainable Development Conference 2009

1-2 April 2009, Sydney, NSW

Email: scott.mckinnon@halledit.com.au

Further information: www.halledit.com.au/nswsdc

2009 CRCA Conference

26-28 May 2009, Canberra, ACT

Email: ceo@crca.asn.au

Further information: www.crca.asn.au

2009 APEN Conference

11-13 November 2009, Busselton, WA

Further information: www.apen.org.au

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Feedback is always welcome: greg.lawrence@futurefarmcrc.com.au