



FINAL REPORT 2014

PROJECT CODE	S114
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PROJECT TITLE	17 th Australian Nitrogen Fixation Conference – Sponsorship
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PROJECT DURATION

Project Start date	1 July 2014
Project End date	31 March 2015

PROJECT SUPERVISOR CONTACT DETAILS

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Office Use Only

Project Code	
Project Type	

ADMINISTRATION CONTACT DETAILS

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PROJECT REPORT

Executive Summary

The 17th Australian Nitrogen Fixation Conference was held as scheduled, with 71 delegates attending.

The SAGIT sponsorship was used to support the attendance of Professor Euan James (James Hutton Institute, Dundee, Scotland) and for the conference field tour.

Conference highlights included:

Field tour

Several SARDI/GRDC/SAGIT legume research projects at the Hart and Riverton field sites were featured on the conference field tour to the mid-North of SA. These included pea variety and inoculation trials run by Ross Ballard and Liz Drew (SARDI - GRDC Nitrogen Fixation Program), as well as legume variety and agronomy trials run by Mick Lines (SARDI - GRDC Southern Pulse Agronomy Program and SAGIT Forage peas). Dr. Sarah Noak provided an overview of the Hart Field Day site which stimulated interest in the management structure and operational arrangements employed at the site.

The tour raised the awareness of many delegates to some of the practical issues that are of importance in southern Australian farming systems.

Applied research presentations

Emerging issues reported were:

- (a) the detrimental impact of herbicide residues on legume nitrogen fixation (Yates et al, WA);
- (b) likely benefits gained from non-symbiotic nitrogen fixation in cropping systems (Gupta et al, SA);
- (c) several papers about the responses of rhizobia to desiccation and its importance to

the survival of rhizobia on seed, an area significant to inoculant manufacturers and growers using inoculated seed;

(d) the solubilisation of phosphorus as well as fixation of nitrogen by some strains of *Rhizobium* in New Zealand;

(e) a talk identifying extension gaps pertaining to the practices and knowledge of nitrogen fixation and inoculation by Australian farmers (Ryder et al, SA).

Basic research presentations

A highlight was the presentation by keynote speaker Euan James, from the James Hutton Institute, Scotland, who spoke about a large, diverse group of recently discovered nitrogen fixing bacteria, the Beta rhizobia, that form nodules on legumes but are not related to the rhizobia that are currently used for commercial inoculant production.

Dr Barbara Reinhold-Hurek, University of Bremen, Germany, spoke about the developments of nitrogen fixing endophytic systems in rice. Other speakers also made presentations about this group of N-fixing bacteria and their potential for future use.

Project Objectives

This project sought sponsorship for the 17th Australian Nitrogen Fixation Conference which was held in Adelaide, South Australia, from Sunday 28th September to Thursday 2nd October, 2014.

Overall Performance

The conference was held at the Plant Research Centre (SARDI), and was attended by 71 delegates, with 70% of these from Australia and 30% from other countries including the UK, Germany, USA, South Africa, Botswana and New Zealand.

Three overseas Keynote Speakers were supported through industry sponsorships and attended the conference, namely; Professors Euan James (James Hutton Institute, Dundee, Scotland), Barbara Reinhold- Hurek (University of Bremen, Germany) and Michael Russelle (USDA, Minnesota USA).

There were 59 presentations and the conference proceedings were produced in hard copy for conference delegates (140pp). An electronic copy of the proceedings accompanies this report and will shortly be made available on-line at <http://agwine.adelaide.edu.au/research/farming/legumes-nitrogen/nfixconf2014.html>.

All feedback, including that from GRDC panel members in attendance, was very positive.

There was a large contingent of delegates from New Zealand, where *Rhizobium* research has had a recent resurgence. The conference provided an excellent forum for interaction between the Australian and NZ researchers and created the opportunity to widen the scope of research collaborations.

Several supplementary activities followed the conference. Professors Michael Russelle and David Herridge presented supplementary talks at the Waite precinct on Nitrogen management and N fixation improvements from plant breeding, respectively. Meetings of the Australian GRDC Nitrogen Fixation Program team and New Zealand's MBIE white clover Nitrogen Fixation Program team were held in Adelaide, following the conference.

Key Performance Indicators (KPI)

KPI	Achieved (Y/N)	If not achieved, please state reason.
Year 1 Conduct The 17th Australian Nitrogen Fixation Conference September 2014 DUE 2/10/2014	Y	
Year 1 Submit final report DUE 28/2/2015	Y	

Technical Information

N/A

Conclusions Reached &/or Discoveries Made

Please refer to the executive summary.

Intellectual Property

N/A

Application / Communication of Results

SAGIT sponsorship was featured in the conference proceedings (Front cover and pages 4, 6, 11, 12), on the conference website and on the introductory slides to each session of talks. The freestanding SAGIT banner was prominently displayed in the auditorium throughout the conference. 'The SAGIT Snapshot' booklet was included in all delegate satchels and SAGIT highlighted to delegates as the main sponsor of the field tour.

All talks and posters have been included in the conference proceedings which will shortly be made available on-line. All 2-page short paper submissions were refereed and an ISBN number assigned, allowing the edited proceedings to be cited.

One of our keynote speakers, Prof Michael Russelle, provided an interview for the GRDC Driving Agronomy Program (<http://www.grdc.com.au/Media-Centre/GRDC-Podcasts/Driving-Agronomy-Podcasts/2014/10/Fixing-Nitrogen>) broadcast 7 October.

Sharon Watt (GRDC media) prepared promotional material prior to the conference: Grain flash, Media release. Sharon is preparing follow-up stories based on presentations at the conference.

Rebecca Jennings has prepared an article for a future edition of GRDC's GroundCover

Ross Ballard completed an interview with ABC Riverland, in the week preceding the conference.

The Northern Argus (Clare SA) attended the field tour.

POSSIBLE FUTURE WORK

As a result of discussions at the Hart field day site, some modification has been made to the sampling protocols being used to measure soil nitrogen under legume plots at the site.

Interaction will continue between the South Australian arm of the GRDC Nitrogen Fixation Program and the SAGIT forage pea project.

The possibility of holding the next conference in NZ is being discussed.

AUTHORISATION
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Date: 2/2/15