

# 13th Symposium on Precision Agriculture in Australasia

10-11<sup>th</sup>  
September  
2009

University of  
New England  
Armidale, NSW,  
Australia

There is still time to  
**Submit an abstract** for a poster presentation.  
For more information and submission guidelines please visit the conference web site

## Keynote speakers

**Professor Jim Schepers** - USDA Agricultural Research Service, USA – “**Managing nitrogen with active sensors**”

**Professor Ke Wang** - Institute of Agricultural Remote Sensing & Information Application, Zhejiang University, China – “**Precision Nutrient Management in China**”

## Program

Thursday 10<sup>th</sup>

8am - Precision Agriculture Tools Demonstration and Workshop

1pm - Precision Agriculture Symposium (Speakers and poster sessions begin)

7pm - Symposium Dinner

Friday 11<sup>th</sup>

8am - Precision Agriculture Symposium (Speakers and poster sessions continue)

1pm - Symposium concludes (lunch provided)

2pm - GPS Livestock Tracking Workshop  
Including 2 formal poster sessions (with over 30 posters on display)

Registration and further details:

[www.conferencecompany.com.au/precisionagri2009](http://www.conferencecompany.com.au/precisionagri2009)

**Early bird registration (\$145) closes 24<sup>th</sup> July!!!**



For specific information:  
David Lamb +612 6773 3565  
Mark Trotter +612 6773 2465  
Email [parg@une.edu.au](mailto:parg@une.edu.au)



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## Precision Agriculture Tools Demonstration

Thursday 10<sup>th</sup> September 8am, UNE Precision Agriculture Research Group Demonstration Site

This hands on workshop will involve leading researchers and commercial providers demonstrating a variety of sensors and applications. You will have the opportunity to see these tools working in the field and quiz the experts!

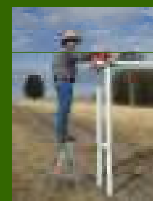
The PA sensor demonstrations include:

Veris P4000 VIS-NIR-EC-Force Probe – Brett Whelan, Australian Centre for Precision Agriculture, University of Sydney



Using EM to Investigate seepage in water storages and channels – Jon Medway, Terabyte Services

Calibrating the Geonics EM38 for multi-temporal surveys – Derek Schneider, Precision Agriculture Research Group the University of New England



Crop Circle ACS-470 three channel active crop canopy sensor – Ed Cay, GPS-Ag

Mobile transient electromagnetic imaging for hydrogeological investigation – David Allen, Ground Water Imaging Pty Ltd



Greenseeker variable rate application and mapping systems – Scott Jamieson, Crop Optics

Dualem for multi-depth soil EC investigation – Andrew Smart, Precision Cropping Technologies

Ellinbank Automatic Pasture Reader – Ivor Awty, Department of Primary Industries Victoria

Soilseeker soil strength sensor – Bill Gardener, WestVic AgServices



Radiation Solutions RS700 (gamma ray sensor) and Geonics EM38 Mark II – John Peacock, Fugro Instruments

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**Get involved  
in the PA Tools  
Demo** if you have  
a relevant research or  
commercial tool that  
you would like to  
demonstrate please  
contact Mark Trotter  
parg@une.edu.au



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# 13th Symposium on Precision Agriculture in Australasia

## Symposium Speakers

Session 1 – 1pm Thursday 10<sup>th</sup> & Session 2 – 8am Friday 11<sup>th</sup>

### Cropping & Broad acre

Canopy-scale detection of nitrogen in wheat using the Canopy Chlorophyll Content Index - Glen Fitzgerald, Department of Primary Industries Victoria

Ultra low level airborne plant sensor for biomass assessment in crops - David Lamb, Precision Agriculture Research Group UNE and CRCSI

Optimising nitrogen use in cereal crops using site-specific management classes and crop reflectance sensors - James Austin, ACPA, University of Sydney

Integration of operational constraints into management zone delineation methods - Pierre Roudier, Cemagref & Infoterra (France) & ACPA, University Sydney

Water use efficiency indicators for variable rate irrigation of variable soils - Carolyn Hedley, New Zealand Centre for Precision Agriculture, Massey University

Ord Irrigation Area, a diversity of precision agriculture applications - Jon Medway, Terrabyte Services

### Horticulture

Precision sampling in onions: A powerful investigative tool to address complex horticultural crop management challenges - David Burrell, National Onion Labs, Georgia USA

Evaluating a new proximal sensor for winegrape quality - Rob Bramley, CSIRO

Linking UAV unmanned aerial vehicle technology with precision agriculture - Lesie Felderhof, SkyView Solutions Pty Ltd

### Livestock Industries

Autonomous tracking and control of livestock in extensive grazing systems - David Swain, CSIRO

Examining the temporal availability of feed and regional turn-off patterns of cattle in Eastern Australia - Graham Donald, CSIRO

### And more!

RTK CORS networks in Australia and the latest in tractor autosteer technology - Tim Neale, FARMpos

On-farm carbon and biodiversity: Mechanisms and PA tools for the future - Paul Frazier, Ecological Australia

Producer perspectives of precision agriculture - Richard Heath, Grains Producer Southern Precision Agriculture Association update – Mark Branson

A producer perspective on using precision agriculture technologies - Kym Ianson, South Australian grain and hay producer

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## GPS Tracking Livestock Workshop

Friday 11<sup>th</sup> 2pm

### Speakers:

Pasture utilisation and nutrient redistribution in intensively managed dairy system - Ina Draganova, Institute of Natural Resources, Massey University, New Zealand

Adaptation behaviour of cattle relocated from the rangelands to a temperate agricultural farming system - Dean Thomas, CSIRO

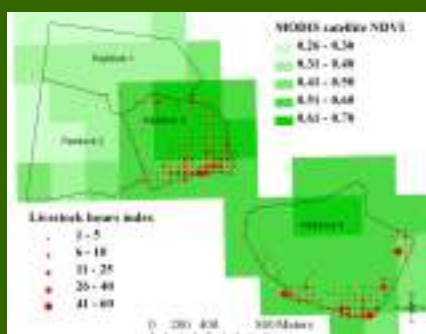
Multipoint interval tracking (MIT): A new methodology for sampling animal behaviour - Mark Trotter, Precision Agriculture Research Group UNE

Towards a universal protocol for GPS tracking of Livestock - David Swain, CSIRO

Low cost low power GPS technology for livestock tracking - Robert Lorimer, Position One Consulting

### Discussion Forum:

Following the speaking program a discussion forum will be held focussing on GPS hardware and the development of protocol standards



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# 13th Symposium on Precision Agriculture in Australasia

## Symposium Posters

Session 1 - 3pm Thursday 10<sup>th</sup> & Session 2 – 10am Friday 11<sup>th</sup>  
Crops

Practical remote sensing applications for the peanut, sugar cane and cotton farming systems - Andrew Robson, Primary Industries and Fisheries, Department of Employment, Economic Development and Innovation, Queensland

Mapping annual ryegrass and wild oat distribution for site specific weed management in grain crops - John Heap, SARDI Field Crops Pathology Diagnostics Group

Defining precision irrigation: A new approach to irrigation management - Rod Smith, National Centre for Engineering in Agriculture and Cooperative Research Centre for Irrigation Futures, University of Southern Queensland

Varirate- an add-in for Arcpad to implement variable rate applications - Bill Gardener, WestVic AgServices

### Soils

Integrating spatial data and farmer knowledge to identify causes of spatial variability in grain yield to change management practices - Yash Dang, Department of Environment and Resource Management

Multi-temporal EMI survey of paddock scale soil moisture variability - Bilal Hossain, Precision Agriculture Research Group, the University of New England

Soil strength: A useful parameter for mapping management zones - Bill Gardener, WestVic AgServices

Mobile transient electromagnetic imaging for hydrogeological investigation - David Allen, Ground Water Imaging Pty Ltd

Preliminary approaches for determining regional scale variability of subsoil constraints in northern grains region - Yash Dang, Department of Environment and Resource Management

Calibration of the Genoics EM38 - Derek Schneider, Precision Agriculture Research Group, the University of New England

### Horticulture

Spectral Reflectance for the Detection of Grapevine Leafroll-Associated Virus-3 in White-Berried Wine Grape Cultivars - Eileen Perry, Future Farming Systems, Vic Department of Primary Industries

Design and demonstration of precision agriculture irrigation applied to different vegetable crops - Dr Susan Lambert, Tasmanian Institute of Agricultural Research, University of Tasmania

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## Symposium Posters (continued)

Session 1 - 3pm Thursday 10<sup>th</sup> & Session 2 – 10am Friday 11<sup>th</sup>  
Pastures

Pasture measurement using CDax unit and Crop Circle/Crop Scan - Ian Yule  
New Zealand Centre for Precision Agriculture

Use of remote sensing to assess travelling effluent-irrigator performance on a dairy farm in New Zealand - James Hanly, Fertilizer and Lime Research Centre, Massey University, New Zealand

Is pasture really less under the tree? Using an active optical sensor to measure changes in pasture around trees in grazing landscapes - Phoebe Barnes, School of Environmental and Rural Science, The University of New England

### GPS livestock tracking

The development of a novel tracking system to investigate horse movement – Brian Hampson, the Australian Brumby Research Unit, The School of Veterinary Science, The University of Queensland

What can sheep teach us about shelter use? Applied GPS livestock Tracking - Lee Taylor, School of Environmental and Rural Science, The University of New England

GPS livestock Tracking in wetlands - Peter Berney, School of Environmental and Rural Science the University of New England

GPS-tracking livestock protection animals to improve wild dog management outcomes - Guy Ballard, NSW Department of Primary Industries

### And more!

Precision Ag technologies for carbon landscape quantification - Emma Garaway, Precision Agriculture Research Group, the University of New England

Constraints to precision agriculture adoption in Pakistan - Ihsanullah Daur, NWFP Agricultural University Peshawar Pakistan

PICSE - A strategy in place to excite and encourage the next generation of skilled precision agricultural scientists - Suz Grieg, School of Environmental and Rural Science, The University of New England

Precision nutrient management in corn crops in Turkey - Associate Professor Ufuk Türker, Faculty of Agriculture Farm Machinery Department, Ankara University, Turkey

Where are the roots? Can we deduce the edge of a trees root zone without seeing it? - Phoebe Barnes, School of Environmental and Rural Science, The University of New England

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