

Back to basics and into the future

GRAEME JENNINGS

From swarm robotics to no-till basics: this year's SANTFA conference promises to be an exciting event.

The association's 17th annual conference will be on February 27 at the Barossa Convention Centre in Tanunda, with registration from 7.45am.

Speakers will include Canadian and US no-till academics and extension specialists, Nuffield Scholars and interstate and SA growers and consultants.

A highlight of this year's conference will be an opportunity to compare two quite different approaches to cover cropping, soil improvement and environmental enhancement in the context of farming systems; one uniquely Australian and the other from the US.

Colin Seis, a NSW farmer, is the originator of pasture cropping, in which cereal crops are direct-seeded into stands of perennial native grasses, combining grazing and cropping in the same paddock.

Colin will discuss the principles behind pasture cropping, where it fits in commercial farming systems, how to get started with the concept and how to manage the interaction between permanent native pasture and cereal crops to maximise profitability and environmental benefits.

The North American perspective will be provided by ECO Farming advocate Jim Hoorman, an Assistant Professor with Ohio State University Extension, who recommends keeping growing vegetation on the soil year-round.

Jim describes ECO Farming as working with natural ecological processes to produce profitable, high-yielding crops that more efficiently use scarce and expensive inputs like fertiliser and pesticides while protecting the environment. The key to that is to have healthy soils, which requires live plants with extensive root systems to efficiently feed soil microbes and improve soil structure, creating a healthy, dynamic soil ecosystem.

ECO Farming uses modern, best-management practices and new technologies such as controlled traffic, water-table management, integrated pest management (IPM), multi-species



EYRE PENINSULA FARMERS GRAEME AND TRISTAN BALDOCK (STANDING) WILL DISCUSS SUCCESSION AND GENERATIONAL FARMING.

diversity, longer crop rotations, precision agriculture and genetic manipulation of crop varieties to improve the soil and enhance crop production.

Non-chemical weed control will be the focus of the presentation by WA agronomist Peter Newman, communications leader with the Australian Herbicide Resistance Initiative (AHRI), who sees diverse weed control and farming with a low weed seed bank as key to growing profitable crops and addressing the challenge of herbicide-resistant weeds.

Until recently herbicides provided the answer to every weed control problem, with little need for growers to consider crop rotation, crop competition or even the level of weed control achieved with a spray, but herbicide resistance has changed the game, he says.

This new production environment means growers need to adopt an aggressive mind-set, use diverse weed control methods and recognise that not every solution comes in a drum or a gene.

In WA, this approach is working so well that growers using it have cleaner crops than ever despite herbicide-resistant weed populations and while continuing to continuous crop.

Peter will explore what can be learnt from WA growers' weed control experiences, how non-chemical methods can be integrated into cropping systems and how to avoid glyphosate resistance or manage resistant weed populations.

Peter Johnson is an award-winning Canadian agronomist and extension specialist with a passion for cereals, no-till and social media.

He will discuss practical aspects of no-till including equipment options, machinery modifications and adaptations, rotations, cover crops, fertility, weed control, insects and plant populations and venture into the areas of management and grower attitude.

Peter describes no-till as an integrated system that, like a chain, is only as strong as the weakest link, which is often 'the nut behind the wheel'. "If you think you can't, you're right. If you think you can, maybe you can."

Buckleboo growers Graeme and Tristan Baldock will explore issues encountered in their experiences with Generational Farming and the transition of authority and responsibility within the family business from one generation to the next.



Program

The Baldock family business has been through multiple re-structures, transitions and role changes in the past 40 years or so and there is much to be learnt from Graeme and Tristan's observations on succession planning, impacts of changes in family and business structures, making the transition from one generation to the next and working together in the family business.

Two very different approaches to 'robotics' in agriculture, from Queensland farmer and innovator Andrew Bate and University of Sydney Professor of Robotics and Intelligent Systems Salah Sukkarieh, will be showcased in the forum sessions, a feature of SANTFA conferences.

Andrew, founder of SwarmFarm Robotics, is working to develop a system based on multiple small, autonomous, robotic machines he argues are simpler, more versatile and can operate with more precision than current-generation farm machinery; down to tending individual plants within a crop.

The approach by Salah and his team is quite different; with their focus on how to use sensors and algorithms to 'train' machines to autonomously undertake farm tasks ranging from harvest to weed control.

In another forum session WA consultant 'No-Till Bill' Crabtree and Gerónimo Watson, Chief Technology Officer of the Bioceres biotechnology group will present their perspectives on bio-technology issues.

Bill will explore why the Australian grain industry has not fully embraced bio technology, the impact of that and what can – or should – be done about it. Gerónimo will discuss the potential of new-generation crops carrying the HB4 trait, being introduced by Bioceres and its partners, that is claimed to increase the reliability of wheat in saline and dry conditions and improve average yields in such conditions by 10 to 15%.

Loxton grower, farm manager and Nuffield scholar Robin Schaefer will discuss how to get maximum value from weather forecasting and other forum speakers will explore the use of precision ag and drones in agriculture, risk management and multi-peril crop insurance, using fluid injection systems to improve soil condition and productivity and present data from a long-term tillage trial in the US that reinforces the benefits of no-till.

7:45–8:15	Registration
8:15–8:25	Welcome: Tom Robinson, SANTFA President
8:25–8:35	Opening address: Richard Konzag, GRDC Southern Panel member
8:35–9:35	James Hoorman ~ ECO Farming: improving soil ecology and nutrient recycling
9:35–10:35	Peter Newman ~ The future – diverse weed control
10:35–11:00	Morning Tea
11:00–12:00	Peter Johnson ~ Making no-till work!
12:00–12:40	Lunch
12:40–1:40	Graham & Tristan Baldock ~ Generational farming
1:40–2:25	Forum 1
	A. Robin Schaeffer ~ Using weather forecasting
	B. Geronimo Watson & Bill Crabtree ~ Wheat breeding & genetic technology, Suppression of biotech innovations – can we change this?
	C. John Rochecouste ~ Crop Insurance in plain English
2:25–2:50	Afternoon tea
2:50–3:50	Forum 2
	A. Alan Sundermeier ~ Predicting future soil productivity after long-term no-till
	B. Ed Scott, Michael Eyres & Peter Kitschke ~ Liquid nutrition and soil use efficiency
	C. Salah Sakkarieh & Andrew Bate ~ Robotics in agriculture, Joe Koch ~ Applied PA in the Upper North, combining UAV images and field data to get results
4:00–5:00	Colin Seiss ~ Perennial cover cropping
5:00–5:50	Q&A panel session with available speakers
5:50–6:00	Closing comments: Tom Robinson
6:00–6:30	Drinks

For all the latest on the 2015 Conference, like us on Facebook: SANTFA – Conservation Agriculture In Action and follow us on Twitter: @SANoTill. Official conference hashtag: #SANTFAConference