Fluid News

september 04

Farmer profile >

Peter Swaffer Eyre Peninsula South Australia

Peter Swaffer, together with his son Mark, are now in their second year of using fluid fertilisers on their Eyre Peninsula property.

“Last year we only applied it to about 500ha,” Peter said.

“This is our second year and we are looking at using it on the whole 1800ha.”

Peter changed to fluid fertilisers when he updated his seeder.

“I didn’t want to buy something that was going to be obsolete in a few years, so I thought I would invest a bit of extra money and purchase one for using with liquid fertiliser,” he said.

“Also we’ve got some highly calcareous soils on our property. Bob Holloway and the team at the Minnipa Ag Centre have shown through their research that the big responses to phosphorus are with highly calcareous soils.”

With an initial investment of $30,000, which Peter equates to switching from “bags to bulk” 30 years ago, it isn’t cheap, “but you don’t look back”.

Peter hasn’t had to modify his equipment, he bought it “all ready to go”. He uses a Simplicity 4000L liquid cart and can do 400ha from one fill.

“Last year we couldn’t see much difference because it was such a good year, so I don’t think it would have mattered what we did,” he said.

“We are expecting more response this year. We have some paddocks that always produce well, and then we have got others that don’t and we are hoping that the fluid fertiliser will have a positive response on those

Using liquid phosphorus and a small amount of nitrogen, the big advantage for Peter is the ability to inject minerals like copper and zinc.

“It is a whole lot cheaper to buy the micronutrients than to buy solid fertiliser.”

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From the editor

During the first year of the communication component of the Fluid Fertiliser Research Project, we have produced 3 Fluid News and built the Fluid Fertiliser Web Site www.fluidfertilisers.com.au

Both of these projects have received very positive feedback, however, we are still building the communication database. Expressions of interest are always welcome and you can register online through the website

All of the details for the first Australian Fluid Fertiliser Workshop and tour to Eyre Peninsula have been finalised. There is a registration form on the back of the newsletter but we encourage you to register online www.fluidfertilisers.com.au/events

Contact Jim Kelly:
jkelly@arris.com.au
(08) 8303 7247
0427 821 625 for feedback.

Project UA CS0231

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Peter and Mark have experimented with a few different liquid fertilisers and have now settled on Fertisol. They still use granular urea.

Like many SA growers, he made calls for a liquid fertiliser plant to be established in his state, saying the cost could be decreased.

“If they can do it in the west, I can’t see why they can’t do it here – then it will be a whole lot cheaper,” Peter said.

Peter also believed in the need for ongoing research, especially into the mixing of nutrients with fluid fertiliser.

“If we could get the chemistry right for APP then we could get copper and zincs mixed in,” he said.

“APP is a pretty good product - a bit safer to handle, so a bit more work in that direction would be good.”

Peter and his son have had no handling issues with fluid fertilisers – no worse than using granular.

“There can be a spillage risk with fluid fertilisers but that balances out with the fertiliser dust from granular products,” he said.

“There are no major problems.”

He has also had no supply problems – with two storage tanks that have a capacity of 60,000l which is enough for his season’s needs.

Peter doesn’t believe he would return to granular fertilisers – apart from urea - and he encouraged more growers to switch and try fluid fertilisers.

“The more people that use fluid fertilisers, the more we will learn about it and then more people will get into it,” he said.

Peter believes there are plenty of growers just watching the situation, “but not a lot are committing.”

“I really would encourage people to give it a go,” he said.

“It’s all about a numbers game – the more people using, the more competitive the prices will have to be.”

Using fluid fertilisers has involved a bit of trial and error for Peter and Mark.

“But We have committed ourselves to it and decided to take this path and we are quite happy with the results,” he said

“We are learning a bit more each year.”

“The first year we had a few minor hiccups, but so far this year we have had no major problems.”

In Brief

Rainfall 350-450 mm per annum

Soils limestone, some clay, 6-8ph

Crop 1800 ha – cereals, oil seeds, canola and pulses

100% no till for two years, with direct seeding

Researcher profile > Sam Stacey

Sam Stacey is another of the hard working researchers based across Australia studying fluid fertilisers and reactions in soils.

Born and bred in Adelaide, Sam spent some time in Queensland in the sugar industry as an irrigation agronomist. Now based at Adelaide University, Sam is in his second year of his PhD.

Sam is hoping to discover a new micronutrient fertiliser for the alkaline soils which dominate some of Australia’s most important cereal cropping regions like

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South Australia's upper Eyre Peninsula and Mallee, Victoria's Wimmera and Mallee regions; and Western Australia's eastern wheat belt.

"Micronutrients are less 'plant-available' at high soil pH, which means that the efficiency of conventional micronutrient fertilisers can be relatively poor," he said.

"Another problem is that some micronutrients (manganese and zinc) react with Ammonium Polyphosphate (APP) in the fertiliser tank. The reaction can lead to blocked nozzles and, at worst, create a sticky mess."

Sam said one way to overcome this problem is to use chelated micronutrients.

"I have collected a range of new chelating agents and will be assessing whether they improve the efficiency of micronutrient fertilisers as well as reduce their reactions in the fertiliser tank," he said.

"I have already established some of these chelating agents complex micronutrients much more effectively than EDTA, and they do reduce the reaction between micronutrient fertilisers and APP.

"We still need to determine how they will react in soils and whether they will effectively supply micronutrients to field crops."

Sam is also hoping to develop micronutrient fertilisers to be absorbed much more readily by crops.

"Our trials will cover both foliar and soil application of these interesting fertilisers," he said, stressing both experiments are in their infancy but early signs look "promising".

Leading the way


Peter Burgess

With the ever-increasing take up of liquid fertiliser options in Australia, South Australian Peter Burgess saw the lack of specialised machinery for the industry and decided to fill the gap.

Liquid Systems evolved from that initial idea and has been established in South Australia for more than two years. Mr Burgess has a long standing involvement in the agriculture industry, and during his time as state manager of Aussie-Ag, saw the "first hints" of fluid fertiliser.

The a-i, an auto rate injection system is Liquid Systems most popular product

"I was at a field day about three years ago when I was approached by someone who asked if I could build something to meet his needs, Mr Burgess said.

Since then he hasn't looked back and has solely designed and manufactured equipment for fluid fertilisers.

Liquid Systems SA is not just restricted to his home state – 80% of Mr Burgess' business is the strong Western Australian Fluid Fertiliser market. And he has just started negotiating with South Africa, Victoria, New South Wales and Queensland.

Mr Burgess works closely with farmers and government research institutions - nationally and internationally - and is involved in trial work at the highest levels.

"Our mission is to provide the farmer with the best equipment, componentry and product information available," he said.

"We are the market leaders in liquid fertiliser application equipment."

Their comprehensive product range includes:

- pumping modules
- metering systems
- application pumps
- transfer systems
- componentry
- cartage tanks
- liquid carts
- storage tanks

Mr Burgess says the a-i is his most popular product – an auto rate injection system. It's a single section auto-rate system featuring Farmscan 22C6 controller, hydraulic drive Bertolini 2073 (75 lpm) poly pump, fascia mounted suction and pressure filters, liquid fertiliser/clean water purge selector valve and plug for monitor harness. **continued page 4**

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The auto rate plumbing incoprates a quality flow meter, glass reinforced polypropelene “Banjo” flange manifolding and servo and section valves with 316 stainless steel ball and stem internals. Although fitted with a Farmscan controller, adapters are available on request so that the module may be interfaced with otherelectronic controllers. A full tank kit utilising “Banjo” componentry is also standard with twin “Super-Mix” agitators.

He is now dealing with WA growers, working on an extreme agitation system for mixing trace elements and suspensions.

Mr Burgess works with his clients to meet their individual needs.

“Whatever the customer wants we can deliver,” he said.

“We have just developed new termination jets – CNC machined 316 stainless steel,” he said. “The jet also acts as the base for our optional 316 annealed stainless steel director tubes which ensure precise placement of products.”

Liquid Systems is your one stop shop Fluid fertiliser equipment.

“We also keep and sell peripheral equipment necessary for fluid fertilisers,” he said.

“We either stock it or we manufacture it – it’s not a mystery.”

Liquid Systems have an informative website which is regularly updated **www.liquidsystems.com.au**.

Liquid Systems SA is located at 49 Sun Valley Drive, Glenalta, SA, 5052 or phone on (08) 8278 5653.

Innovative equipment research

Liquid Systems SA derives its inspiration and creative ability from more than 35 years involvement in the research, design and manufacture of agricultural machinery in Australia and the US.

They utilise the latest technology in their design, manufacturing and testing processes and pride themselves in keeping up to date with industry information.

Always at the forefront in design and innovation, Liquid Systems SA has commissioned its new field simulation and ‘wet-test’ facility.

“Some manufacturers say their systems have been electronically tested and are just terrific, send them to a client, get them into the field and there’s something wrong!” Liquid Systems (SA)’s Chief Executive Officer and chief designer Peter Burgess said.

”There’s no substitute for a ‘wet-test’ facility. Not only are the electronics subjected to a practical workout, every part of the system is.”

For each module manufactured at Liquid Systems (SA) the hydraulics are tested; the rate control is examined under load; pressure relief valves are set and servo valves, section valves and flowmeters are subjected to thorough operational testing using liquid as would be the case in the field.

”I don’t know how many companies have a facility such as this”, says Peter, “but I know that we do like to sleep well at night and what makes this possible is the knowledge that every system which leaves our premises works!”

Edited and designed by Arris Pty Ltd

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Day 1

Time	Day 1
08:00-08:30	Registration
08:30-08:45	Opening/housekeeping
	Fluid fertilisers – setting the scene
08:45-09:30	*Fluids fertilizers – an overview* Dr Larry Murphy, Fluid Fertilizer Foundation, USA
09:30-10:00	*Field evidence for efficiency of fluid fertilizers* Dr Bob Holloway, South Australian Research and Development Institute, Minnipa, SA
10:00-10:30	*Reactions of phosphorus, nitrogen and trace element fertilizers in soils* Dr John Mortvedt, USA
10:30-11:00	Coffee break/Poster Viewing
	The chemistry and efficiency of fluid fertilisers
11:00-11:30	*Chemistry of fluid phosphorus fertilizers in alkaline soils* Dr Enzo Lombi, CSIRO Land and Water, SA
11:30-12:00	*On which soils do fluid fertilizers provide yield and nutritional advantages?* Dr Roger Armstrong, Agriculture Victoria, Vic.
12:00-12:30	*Changing to fluids – a farmer's perspective* Mr Andrew Polkinghorne, Farmer, Eyre Peninsula, SA
12:30-14:00	LunchPoster and Display Session
	Equipment and placement issues
14:00-14:30	*Issues with application of foliar fertilisers* – Dr Ian Fillery, CSIRO Plant Industry, Perth, WA
14:30-15:00	*Precision, deep, and high pressure placement of fluids* Mr Brendan Frischke, South Australian Research and Development Institute, Minnipa, SA
15:00-15:30	*Canadian experiences with using fluid sources of N and P to maximise grain production* Dr Cindy Grant, Agriculture Canada, Brandon, Canada
15:30-16:30	Coffee break/Poster Viewing
	Commercial Section
1630–1730	Commercial Section
18:30 – 22:00	Workshop Dinner

Day 2

Time	Day 2
08:00-08:30	Registration
08:30-08:45	Announcements/Housekeeping
	Fluid sources of nitrogen
08:45-09:30	*Nitrogen nutrition for cereal production in Australia* – Dr Annie McNeill, Adelaide University and Drs Ian Fillery and John Angus, CSIRO Plant Industry, Canberra and Perth.
09:30-10:00	*Topdressing grains with N solutions: Managing leaf burn* – Dr Mark
10:00-10:30	*The potential of foliar fertilisation* - Prof. Derrick Oosterhuis, University of Arkansas, USA
10:30-11:00	Coffee break/Poster Viewing
	Equipment and placement issues
11:00-11:30	*Using liquid N – a farmer's perspective* – Ian Stanley, Kalannie, WA
11:30-12:00	*On-the-go sensing and N applications- future directions* - Dr. Nyle Wollenhaupt, Agco
12:00-12:30	*Liquid application systems - conventional and new technologies from Canada – Rick Pattison, Pattison Liquid Systems, Inc, Saskatchewan, Canada*
12:30-14:00	Lunch/Poster Presentations
14:00-15:30	**Commercial Section (oral presentations) Products and Applications**
15:30-16:00	Coffee break/Poster Viewing
16:00-17:15	**Commercial Section (oral presentations) Products and Applications and Poster Viewing**
	*Program subject to change without notice.

Workshop Updates

Support from Agrichem


Owen McCarron

International company Agrichem has been awarded the naming rights sponsors for the inaugural Australian Fluid Fertiliser Workshop in September.

With an 18-year association with liquid fertilisers in the country, Agrichem was the logical choice.

“We are honoured and proud to be the naming rights sponsors for the inaugural FF workshop in Australia in September,” national sales manager Owen McCarron said.

Since the company was established in Australia in 1986 it has initiated research in a variety of areas including funding the initial trial work of Bob Holloway and his team on the Eyre Peninsula. Agrichem also sponsors Adelaide Uni PhD student Therese McBeath and her work.

“We have a deep history with liquids in Australia,” Mr McCarron said.

“We are happy to put money back into the industry.”

Agrichem’s Technical Services Director Erin Conza, who is on the technical advisory committee for the US Fluid Fertilizer Foundation, will also present at the September workshop.

“Agrichem is more than pleased with the quality of researchers who will present in September,” Mr McCarron said.

Company representatives are looking forward to spending time with growers and sharing trial results and grower experiences from all over the world.

“We will have a number of new products which will be available for the 2005 cropping season which we will discuss at the workshop,” he said. “We will also be showcasing our new Nutrition Manual – Australia’s first comprehensive technical manual on liquid nutrition. It covers a range of nutrition and application issues and provides recommendations for nutrition programs for 22 crops.”

Agrichem has welcomed the support of other leading industry representatives as sponsors - Fertisol, CSBP, GRDC, Incitec, Liquid Systems SA, DPI Vic, Tessenderlo Kerley, SARDI and the Fluid Fertilizer Foundation - who have come on board to jointly develop the awareness of fluid fertilisers and nutrient products in Australia.

“We are certainly impressed with the calibre of the other sponsors,” Mr McCarron said.

He said it was now time for farmers to take grasp of the technology available and “run with it – the workshop is critical to growers continuing to uptake the technology.”

“We want to see as many growers, agronomists, consultants and distributors as possible attend the conference,” Mr McCarron said.

“We look forward to an increasing understanding and uptake of use of fluid fertilisers in Australia post the workshop.”

Post Workshop Tour

As an add on to the Fluid Fertiliser Workshop, interested participants can join a tour of the highly successful fluid fertiliser trials on the Eyre Peninsula.

The Minnipa Agriculture Centre (MAC) will hold its annual field day on Thursday, September 23 covering general agronomic issues including varieties, herbicide, grain legumes, plant nutrition, tillage and fluid fertiliser use.

On the Friday, September 24, participants will tour the 2004 fluid fertiliser trials. The group will visit three sites viewing several trials covering new products, copolymers, suspension, and placement of application and rate trials. A local farmer will also share his fluid fertiliser experiences during a tour of his property.

Brendan Frischke, Dot Brace and Bob Holloway from MAC, in conjunction with Larry Murphy from the Fluid Fertilizer Foundation, will lead the tour.

For further information about the Post Workshop tour contact Kristi Wilson on 08 8303 6706

Advances continue in Fluid Fertilizer research

Dr. Larry Murphy
President
Fluid Fertiliser Foundation

Continued improvement in use efficiency of fertiliser materials of all types and the direct impact of that progress on food and fibre production depends on continued applied research. Unfortunately, in the USA much of the public support for soil fertility research and fertiliser utilisation research in both universities and government agencies has declined substantially in the past couple of decades. This decline has led to losses of individuals and positions dedicated to such work and represents an erosion of resources that is difficult or impossible to replace.

The support for applied production research by organizations such as GRDC and CSIRO in Australia is a tremendous asset and all are to be congratulated on the foresight such support represents.

Projected increases in crop yields and escalating world food demands place even more emphasis on the importance of maintaining a flow of new crop production information. Higher yields and protection of production capacity is predicated on a continuing supply of input management information. The exciting developments in genetic engineering and site specific management are still built on the foundation of adequate plant nutrition and nutrient management. At a time when higher cost seed and precision pest management are opening new horizons, there is a continuing need for information on efficient nutrient management to support those investments.

Continuing erosion in research support in soil fertility and fertiliser management research heightens the importance of industry involvement both through the provision of funds and the identification of research topics.

Since 1982, the Fluid Fertilizer Foundation (FFF), a non-profit research and education arm of the fertiliser industry in Australia and North America, has been providing modest amounts of research funding for the development of improved utilisation techniques for fluid fertilisers. One of the unique aspects of this cooperative work has been the input of ideas as well as funds from the industry side through the Foundation's Research and Education Committee.

The Foundation has been very pleased to be a small part of the very significant work on fluid fertiliser agronomics and technology in Australia. Clearly, GRDC, CSIRO, SARDI, state Departments of Primary Industries and industry partnerships have led to discoveries in nutrient management, especially P, which are unique and world-class.

Support for the Foundation is provided by a wide range of companies including fertiliser dealers and distributors, manufacturers and suppliers of related products and services and producers/suppliers of fertiliser materials. As that group expands and strengthens, so will industry support for research in the effective and profitable use of fluid fertilisers. The Foundation looks forward to continued and expanded involvement in research and education efforts in Australian agriculture.

Dr Larry Murphy left, met with Dr Bob Holloway, a Fluid Fertiliser researcher, during his tour of Australia.

First Australian Fluid Fertiliser Workshop
21-22 September 2004

Registration Form

Personal Details: one form per registration

Title:	First Name:
Surname:	
Name to appear on badge:	
Organisation:	

Street:		
Town:	State:	Postcode:
Phone:	Fax:	
Email address:		

☐ I would like to receive Fluid News quarterly electronic newsletter

Registration

☐ Normal Registration, $200.00 GST inc. (closes 31st August 04)

☐ Early Bird Registration, $170.00 GST inc. (closes 30th July 04)

☐ Student Registration, $70.00 GST inc. (closes 31st August 04)

Student Number:

Workshop Dinner 3-course meal, beer, wine and soft drinks, $70.00 per person GST inc.

☐ Number of Workshop Dinner Tickets

☐ I will not be attending the Workshop Dinner

Payment Details

Registration **$** **-00**	Dinner **$** **-00**	Total **$** **-00**

☐ Bankcard ☐ Visa ☐ Mastercard

Name on Card:	
Card Number: __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __	Expiry Date: __ __/__ __
Signature:	

- ***Sorry we cannot accept AMEX or Diners cards***
- ***Cheques can be accepted*** (Payable to: CSIRO Land and Water)
- ***Receipt and tax invoice will be posted 14 days after payment clearance***

Accommodation

You can make your own arrangements for accommodation, two venues have been arranged with corporate discount, Pacific Apartments (quote: Arris, ph 1800 442 638) and the Holiday Inn (quote booking number:100194322, ph 08 8231 55 52).
Visit http://www.fluidfertilisers.com.au/events/workshop.html for more information.

Post Workshop Tour

☐ Please provide me information about the post workshop tour to Eyre Peninsula. The tour will include a visit to the Minnipa Agriculture Centre and field visits to view Fluid Fertiliser trials.

When Completed

Fax: 08 8303 6752 or Post: ARRIS, PO Box 206, HIGHGATE, SA 5063
Any queries contact Kristi Wilson at Arris on ph 08 8303 6706

cut along line