

BSES Limited



**FINAL REPORT - SRDC PROJECT BSS288
BUS TOUR FOR SOUTHERN-REGION GROWERS TO CONTRAST GRAIN
AND SUGAR INDUSTRY GROUP DYNAMICS**

by

BG CALLOW

SD06002

Contact:

Barry Callow
Extension Officer
BSES Limited
Private Bag 4
Bundaberg DC Q 4670
Telephone: 07 4132 5200
Facsimile: 07 4132 5253
Email: bcallow@bses.org.au



**BSES is not a partner, joint venturer, employee or agent of SRDC
and has no authority to legally bind SRDC, in any publication of
substantive details or results of this Project.**

**BSES Limited Publication
SRDC Final Report SD06002**

April 2006

Copyright © 2006 by BSES Limited

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of BSES Limited.

Warning: Our tests, inspections and recommendations should not be relied on without further, independent inquiries. They may not be accurate, complete or applicable for your particular needs for many reasons, including (for example) BSES Limited being unaware of other matters relevant to individual crops, the analysis of unrepresentative samples or the influence of environmental, managerial or other factors on production.

Disclaimer: Except as required by law and only to the extent so required, none of BSES Limited, its directors, officers or agents makes any representation or warranty, express or implied, as to, or shall in any way be liable (including liability in negligence) directly or indirectly for any loss, damages, costs, expenses or reliance arising out of or in connection with, the accuracy, currency, completeness or balance of (or otherwise), or any errors in or omissions from, any test results, recommendations statements or other information provided to you.

CONTENTS

	Page No
SUMMARY.....	i
1.0 BACKGROUND.....	1
2.0 OBJECTIVES.....	1
3.0 ITINERARY	1
4.0 VISITS.....	2
5.0 KEY LEARNINGS	6
6.0 COMMUNICATION OF LEARNINGS TO GROWER COMMUNITY.....	7
7.0 EVALUATION.....	7
APPENDIX 1 - ITINERARY	8
APPENDIX 2 – SURVEY RESULTS.....	10
APPENDIX 3 – ARTICLE IN BUNDABERG NEWS MAIL	12

SUMMARY

The grower-group concept in the sugar industry has been constantly enhanced and provides a great opportunity to share information and experience with other growers.

There have been many changes recommended to cane growers recently in terms of improved farming systems. The changes have three main pillars - controlled traffic, minimum tillage and legume rotations. The adoption of changed farming practices is occurring in the Southern region, but the changes are creating some conflict, both emotionally and financially.

This tour saw the enhancement of learning opportunities through the opportunity to meet with growers from other agricultural sectors. The trip visited Moree to learn from grain and cotton growers of their experiences in the implementation of new farming systems, especially of the change process, advantages and disadvantages, and the long-term benefits. The trip then took the participants to visit the cane industry in northern NSW, specifically in the Harwood area and Rocky Point in southeastern Queensland.

The main objectives were to allow sugarcane growers from the Bundaberg, Isis and Maryborough regions to be in a more informed position to contrast their sugarcane farming systems with the mixed broadacre cropping systems of the Moree farming area, including the opportunity to observe the adoption and use of precision agriculture, minimum tillage, controlled traffic and the advantages and disadvantages of these systems. Growers were also able to contrast their cane-farming systems with those of sugarcane growers in northern NSW. During the evening after the farm visits in the Moree area, some Moree growers attended a dinner that allowed for an informal and relaxed opportunity for group members to get to know these people and further discuss the day's learnings.

During discussions with the Moree grower group hosts, it was evident that the most successful groups were those of a relatively small number, ie up to 10, preferably fewer. The successful groups shared the same farming interests and were willing to work together to:

- Choose a 'leader';
- Determine the important issues and then find solutions to these issues;
- Share the work load, whether it be collecting information, organising demonstrations or whatever.

As a result of this trip, several of the key growers have commented that they would be much better off if they formed more small groups with the aim of further exploring the functionality of sub-groups as determined by topic, but remain part of the existing groups to which they are currently attached. The current group makeup is of up to 25 members. A survey document is being prepared to ask grower group members to comment on

- Meeting location, ie shed or hall;
- Style - more demonstrations near a shed or roving tour;
- Format - more women involved.

Both pre-tour and post-tour surveys were completed by the participants. The results showed a greater understanding of the change process and where southern region growers can benefit from the uptake of existing technology.

All of the growers agreed that this was an excellent opportunity to learn from other agricultural production systems. On farms visited at Harwood and Rocky Point it was quite noticeable how many more cultivation implements there were as compared to the broadacre farms visited. There was comment from the sons of cane farmers that, while they fully understood the importance of GPS technology and precision agriculture, they now had the job of 'selling' the concept to their fathers.

1.0 BACKGROUND

The grower-group concept in the sugar industry has been constantly enhanced and provides a great opportunity to share information and experience with other growers. There have been many changes recommended to cane growers recently in terms of improved farming systems. The changes have three main pillars - controlled traffic, minimum tillage and legume rotations. The adoption of changed farming practices is occurring in the Southern region, but the changes are creating some conflict, both emotionally and financially.

This tour saw the enhancement of learning opportunities through the opportunity to meet with growers from other agricultural sectors.

2.0 OBJECTIVES

The project aimed to build the capacity of Southern-region growers in:

- Attributes of successful grower groups;
- Farming systems (crop rotation, controlled traffic, minimum tillage, soil health, environmental impacts);
- Process of change and improved understanding of partnerships in achieving change towards a more profitable and sustainable sugar industry;
- Benefits of correct harvesting procedures and the impact on reducing soil compaction;
- Labour-saving devices and other innovations on the farms visited.

3.0 ITINERARY

The trip visited Moree to learn from grain and cotton growers of their experiences in the implementation of new farming systems, especially of the change process, advantages and disadvantages, and the long-term benefits. The trip then took the participants to visit the cane industry in northern NSW, specifically in the Harwood area and Rocky Point in southeastern Queensland.

A full itinerary is given in Appendix 1.

The participants were: Clyde Hubert, Jason Loeskow, Clinton Scott, Peter McLennan, Tyler Bengston, Peter Jensen, Ian Jensen, Terry Cunningham and David Helmore from Bundaberg, and Frank Sestak, Geoff Atkinson, Jeff Puller, Ashley Petersen from Maryborough, with Duncan McGregor and Barry Callow from BSES Limited.

4.0 VISITS

Oleo oilseed crushing and stockfeed manufacturing plant

Gerhard Oberholzer, plant manager, gave a presentation to the group of the logistics of oilseed crushing, followed with a tour of the processing factory and discussion with the lab technicians. Oleo produces 2% of the cooking/salad oil for the Australian market. The product is also exported to New Zealand, where it is further processed to reduce odours and colour. Oil is also sold to Goodman Fielder, the largest refiner and manufacturer of edible oil-based ingredients. Oleo was busy processing sunflower seed after an exceptionally good harvest. Interesting information was also presented on monounsaturated sunflower oil.

This visit provided a good insight into where and how a grower's product is processed and some of the issues that may arise. In this case, power outages due to lack of summer supply can cause processing problems. In the sugar industry, the single-desk selling arrangements and, therefore, payment arrangements have been under review and changes have been introduced. These changes are of concern to sugar producers.



Figure 1 The group outside Oleo main office

Bruce Crosby

Bruce Crosby manages a 5000 ha mixed-cropping property. One thousand hectares are irrigated. Cropping cycles include summer plantings of cotton, sorghum, maize some soybeans and mung beans. Winter cropping includes wheat, barley, canola and chick pea.

Bruce uses GPS-guided controlled-traffic systems, but the 'tramlines' are removed each year as in the past they encouraged the prolific growth of fleabane (*Conyza* spp.), a weed of significance in this area due to developing resistance to glyphosate, a Group M herbicide. Fleabane can set in excess of 10 000 seeds per plant and prefers good light,

moisture and warmth – these are the conditions experienced in the tramlines after harvesting of wheat is complete.

Bollgard® cotton is grown, as this has resulted in a reduction of up to 12 insecticide sprays per crop per year and also results in a significant reduction in environmental loading. An example is endosulfan, which has not been used for several years. Endosulfan could be responsible for fish kills in local river systems. Conventional cotton production can result in an extra \$1-2 per hectare versus the cost of paying for Bollgard® seed, but there is a management cost/input in applying all of those extra sprays.

Merinda Farms

Merinda Farms is a family-owned enterprise consisting of three separate properties totalling in excess of 4 000 ha. Michael Ledingham is the owner-manager of the property the group visited. Michael has a summer production schedule of dryland cotton, sorghum and sunflower and was in the process of preparing ground for his winter schedule of wheat, barley and chick pea. Merinda owns all of their equipment, which compared to sugar cane farming is minimal. To prepare and plant the 4 000 ha of crops the equipment includes one chisel plough, one set of large disc openers, one set of small discs, one seed planter, and one spray rig. All harvesting is contracted out. There are two full-time staff employed plus a marketing consultant and agronomist. GPS guidance is used extensively and precision agriculture techniques, such as variable fertiliser application, are under consideration. Fertiliser application rate is based on crop potential yield determined by soil mapping.

The main soil type is Brigalow clay loam. Soil maps have been produced using EM conductivity equipment. The results are ground proofed using conventional soil testing science technique.

Finding and holding onto good reliable staff was identified as a major problem as it is in the sugar industry. This is because of competition from the mining industry that will pay much higher wages for experienced machinery operators. Lack of finance can be a problem in the adoption of new farming changes.



Figure 2 Members of the group listen closely as Michael explains the role of soil mapping on Merinda Farms



Figure 3 The spray rig used on Merinda Farms

Mike Smith

Mike Smith owns and manages a large mixed-farming enterprise to the north west of Moree. Mike owns more machinery than Merinda farms, but this was still minimal compared to the general sugarcane farm.

Mike is also very reliant on GPS guided ground, planting and harvesting operations. He has invested a lot of time in producing computer maps (part of GRDC research grant), where precision agriculture could be used with, for example, variable nitrogen application

depending on soil fertility. Soil maps had been produced and ground proofed with conventional soil testing techniques.



Figure 4 Alicia listens closely as Mike Smith explains the production system on his property

Harwood Mill area

Bob Aitken, BSES Limited Harwood, hosted the group for several afternoon visits in this area. First stop was for an excellent presentation at the mill outlining the statistics of this cane-growing region. Tonnages were impressive, even if they were on a two-year growing cycle. This was followed by the results of row spacing x variety trials presented by Nathan Ensbey. The information presented gave the members on the trip an invaluable insight into the issues faced in northern NSW cane-growing community, and the potential improvements in yields and sustainability through the adoption of the principals of new farming systems. The group then looked at a Hodge double-disc-opener planter that was of great interest, as this style of planter disturbs much less soil during planting. Another of these planters was seen at Rocky Point but had been modified. The modifications included improved disc scrapers as pictured. This allowed the planter to perform to a higher degree in stickier, clay soils.



Figure 5 Double discs utilised as a furrow opener during planting



Figure 6 Disc-scraper modification at Rocky Point

Alan Munro owner of a farm on Woodford Island in the Harwood area invited the group to inspect three- and four-row soybeans planted into beds. As this is a high rainfall area, the excess water is able to drain away and the soybean growth is unchecked. Cane variety x row spacing trials were also on this farm and were of particular interest, as this is a topical issue in the Bundaberg, Isis and Maryborough region.

5.0 KEY LEARNINGS

- Gained a broader outlook of agricultural production systems with the view of integrating appropriate aspects into their farming systems by studying both cane farming systems in another area as well as other farming systems in regard to best management practice of each enterprise.

- Gained a greater understanding of the environmental issues challenging other industries and how they are being addressed, eg compacted 'tramlines' were now removed each year due to the fact they could facilitate water erosion in the event of heavy rain.
- Driving heavy 20 tonne equipment in the field resulted in severe soil compaction that took 2 years to self repair, although this timeline may be specific to soils in the Moree area. In coastal sugarcane growing, this repair is usually by aggressive and expensive cultivation.
- Cultivation of GM cotton - this has resulted in the reduction of up to 12 sprays of endosulfan per crop per year.
- A clear message of the importance of managing potential herbicide resistance with product group rotation was critical to avoid this problem occurring on the coast, eg fleabane (*Conyza* spp.) resistant to glyphosate.
- Economies of scale were demonstrated as Michael Ledingham – Merinda Farms discussed the family's other farms. One is three times the size of the one visited, but was twice as profitable.
- Local grower adoption and uptake of new farming systems and technology was generally positive, but this adoption rate varied with individuals, depending on the type of technology and how much it cost. Often they waited until it was proven in the field by the more innovative growers.
- While most growers acknowledged the importance of technology and change, having enough money to implement change can be difficult.
- Growers of conventional crops generally had good yield but at what cost?
- Grower groups appear to be most efficient when made up of numbers of 6-10 but with common interests and goals.
- The groups need to have a motivator or leader, however all ideas needed to be discussed equally and the workload also equally distributed.
- Group members need training in assessment techniques for results to be meaningful.

6.0 COMMUNICATION OF LEARNINGS TO GROWER COMMUNITY

- Article in the Bundaberg *News Mail* (Appendix 3).
- Report in the BSES Newsletter going to all Bundaberg region growers.
- Brief presentation to SRDC Bundaberg meeting 10 April 2006.
- Learnings will be disseminated to growers via Canetalk meetings, field days and a BSES roving field trip

7.0 EVALUATION

Both pre-tour and post-tour surveys were used to gauge the impact of the tour. Full results are given in Appendix 2.

93% of the participants rated the overall trip as 'good'.

APPENDIX 1 - ITINERARY

Northern NSW Tour
March 6-9 2006

Day 1

- 5.45 am** Meet at car park in Quay Street, over the road from Rum City Tours. (Opposite Bundaberg Enterprise Centre) 20B Quay Street.
- 6.00 am** Board coach and travel to Maryborough. Pick up three other growers at IFS on highway. Quick coffee break.
- 7.20 am** Depart for Toowoomba. ETA approx. 12.30 pm. Comfort stops/ morning tea along the way as necessary. Lunch in Toowoomba.
- 1.30 pm** Depart Toowoomba for Inglewood via Millmerran. A short walk via an olive grove in Inglewood. Continue on to Moree via Goondiwindi.
- 6.00-6.30 pm** Arrive in Moree.
- Dinner** Moree RSL - Informal.

Overnight at Moree Spa Motor Inn
Phone 02 6752 3455

Day 2**6.30-7.30 am Breakfast**

- 8.15 am** Ready to board the bus:
Farm visits/tours arranged by NSW Farmers Federation regional services manager.
OLEO oil processing plant.
Large cotton farm/s, wheat and canola farming operations with GPS etc x 3
- 4.30 pm** Return to motel
- 6.30 pm** Hope to have dinner underway as it is planned to have guests from the local farming community join us and also have a presentation. A great opportunity for informal interaction.

Overnight as above

Day 3**6.30–7.15 am** Breakfast**7.45 am** Ready to board the bus. Travel to Ballina via Glen Innes and Grafton. Comfort stops and morning tea along the way as necessary.**12.30 pm** Lunch**2.30-3.00 pm** Smoko at Harwood Mill. Bob Aitken BSES NSW to give a short talk on the Harwood cropping area. We will look at cropping system trials comparing 1.8 m and 1.5 m row spacing + wide throat planting, a Hodge double disc dual row planter and depending on time, energy etc may visit other trials.**4.30 pm** **Grower visit**

Mr Alan Munro: GPS planted soybeans on beds. 4 rows per bed. Cane row spacing trial.

6.30 pm Drive to Ballina**8.00 pm** Arrive at motel**8.30 pm** Dinner - informal**Overnight at Ballina Homestead
Phone 02 6686 3333****Day 4****8.00 am** Board the bus**9.30 am** Visit Rock Point grower. Mr Merv Russell. Modified DD Hodge billet planter.**11.00 am** Return to Bundaberg

APPENDIX 2 – SURVEY RESULTS

Response to pre-tour survey

Q1 Barriers to change to new farming systems?

Lack of up front finances	37%
Perceived lack of return	37%
Confused by several systems	26%

Q2 Do you believe a controlled traffic system is a viable option?

85% yes 15% no

Q3 Would you use GPS guidance?

100% yes

Q4 Which form of fallow do you use?

Bare	Legume	Grassed	PORP/other crop
9%	63.6%	18%	9%

Q5 Which tillage practice is the majority of the farm under?

Strategic	Zero	< 8passes	> 8 passes
54%	28%	18%	0%

APPENDIX 3 – ARTICLE IN BUNDABERG NEWS MAIL



*Growers share
concepts*

Trip south looks at new systems

A BUS trip, organised by BSES extension officer Barry Callow and sponsored by the SRDC to Moree and Grafton in New South Wales looked at enhancing the grower-group concept.

"Recently there have been many changes recommended to cane growers in terms of improved farming systems and the adoption of changed farming practices," Mr Callow said.

"This has created some conflict, both emotionally and financially.

"The main objective was to allow sugar cane growers from the Bundaberg and Maryborough regions to be in a more informed position to contrast their sugar cane farming systems with those of the Moree broad-acre, and northern NSW and Rock Point cane-farming areas."

More specifically, the group looked at the adoption and use of precision agriculture, minimum tillage, controlled traffic and the advantages and disadvantages of these systems.



LEARNING CURVE: Growers listen intently as soil mapping is explained

Mr Callow noted some of the key grower learnings included:

■ Driving heavy 20 tonne equipment in the Moree area resulted in severe soil compaction.

In the cane industry, this repair is usually by aggressive and expensive cultivation.

■ Another clear message was of the importance of managing potential herbicide resistance by product-group rotation.

Other farming operations visited showed the reliance on GPS-guided ground, planting and harvesting operations.