Issues the SRA Board is considering

CANEGROWERS Forum
Tuesday 16 February, 11am
SRA’s funding

Your Industry Owned Corporation providing research for the Australian sugarcane industry.

• Funded by a statutory levy of 70c per tonne of cane (35c growers, 35c millers), with State and Commonwealth government contributions.
• Levy payers’ contribution approximately $24m
• Commonwealth Government contribution approximately $5.8m
• State Government contribution approximately $4.1m for 2015/16 through MOU
• External collaborative funding – such as Rural R&D for Profit.
• Uncertainty over both State and Commonwealth future funding.
Succession planning

• Very experienced researchers and managers at SRA.

• However, some including Dr Peter Allsopp and Dr Frikkie Botha are approaching retirement. The SRA Board recognises the need develop future research leaders.

• Dr Bert Collard recently appointed to lead the breeding team, based at Meringa.

• With a background in rice, wheat and molecular breeding, he will work with SRA’s experienced plant breeders to drive innovation in the breeding program.

• Stephen Annells appointed Executive Manager, Operations in 2015. Background in agribusiness in South Australia. Stephen manages Operations including resources (such as farms), safety, human resources, and IT.
Infrastructure

• SRA inherited significant assets from BSES, but in the last period of BSES ownership, there were minimal investments in infrastructure and maintenance – out of necessity.

• Many of SRA’s assets are in need of investment.

• A comprehensive asset management plan has been developed.

• The process has started with major upgrade at Meringa now complete.

• The Bundaberg and Brisbane sites are the next major sites in line for necessary investment.
GM sugarcane

• GM breeding into herbicide tolerance is continuing.

• We have been very successful in this program, working with DuPont. There are few research agencies in the world who have repeatedly inserted a gene into the sugarcane plant and then made it work successfully.

• The potential is there for GM sugarcane varieties with key traits to deliver step-wise cost savings and productivity advances.

• One of the challenges is that sugarcane is not of major interest to the big players in this research space – their focus is on crops such as corn, soybeans, rice, and wheat.

• There is a lot of movement in this space at present with both companies and technology.

• The SRA Board is examining our next steps in conjunction with industry.
Scalability

- We have a diverse range of farming businesses. There are over 1500 businesses less than 50ha and approximately 390 businesses greater than 250ha.

- All farms and mills are important to us.

- A major consideration of the Board is formatting a portfolio of projects that have scalability when it comes to adoption.

- We will continue to investigate research projects that benefit all businesses, although not all research is on scalable type projects.

- A proportion of our research projects and outcomes are very scalable – such as varieties in the breeding program.

- Some research projects have elements that are less scalable – such as:
  - Cost barriers with precision agriculture
  - Soldier fly
Rapidly changing environment

- Following industry feedback, the Board has identified four priority Impact Areas for investment:
  - Yellow Canopy Syndrome
  - Conventional and GM plant breeding
  - Adoption
  - Harvest losses
- Neil Fisher will talk more about these in his presentation.

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<th>Investment area</th>
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SRA overview

CANEGROWERS forum
Tuesday 16 February, 11am

Mr Neil Fisher
CEO
Burdekin

2014
Crop: 8,061,406 tonne
CCS: 14.6
TCH: 113

2015
Crop: 8,278,388 tonne
CCS: 14.9
TCH: 118
SRA in the Burdekin

Key research hub for SRA. Research station at Brandon: 23 permanent staff, 7 casuals. Research projects and activities include:

- Plant breeding
- YCS research
- GM cane
- Fertiliser efficiency
- Harvest losses

In addition, we also have some external funded projects, including:

- Modernisation of furrow irrigation – USQ
- Rural R&D for Profit – Smarter automated irrigation – USQ
- Harvester speed and ratoon performance – BPS
- Nitrogen fertiliser requirements for representative soils of the Lower Burdekin cane growing district – EHP-funded SRA research
- Investigating the role of microbes, carbon in soil-plant interaction in Burdekin sugarcane soils – Advanced Burdekin Collective Research
Burdekin region – investor challenges

• Water allocation has improved – but high costs associated with water and electricity.
• Increasing occurrences of YCS.
• Adoption of research outcomes.
• Productivity / profitability challenge.

SRA undertakes targeted research, development and extension programs for the sugar industry.
ABARES survey – the productivity challenge

• The survey assessed productivity and profitability of a sample of growers for 2013/14.
• Significant variability of profitability.
• High costs in the Burdekin associated with irrigation – water and electricity.
• Burdekin results:
  • 27 Burdekin growers.
  • 58 percent of farms with negative farm business profit.
• Total cash costs (exc finance): $3220/ha.
Industry wide strategy: Focusing on priority “Impact Areas”

- Yellow Canopy Syndrome.
- Plant breeding (conventional and GM varieties).
- Extension and Adoption.
- Harvest losses.

SRA has identified these issues as impact areas that need urgent attention and results.
Yellow Canopy Syndrome (YCS)

• “Australia’s sugarcane industry is currently battling a mysterious new condition known as Yellow Canopy Syndrome (YCS)”

• “Despite a significant effort in the past three years, the causal factor(s) for YCS remains unknown. This is the most pressing concern for our industry, and a large investment has been made to find a solution.”

• An Expert Panel was asked by the SRA Board to provide an independent report that included an assessment and scientific evaluation of the YCS problem, as well as a critical assessment of current YCS R&D investment.

• The panel made recommendations for new and or modified research plans for YCS.
YCS - Summary Assessment

• “The research effort has been strong, but the cause of YCS has not been determined. Moreover, the symptoms of YCS need to be defined better so that YCS can be truly distinguished from other leaf yellowing and other conditions that impact upon sugarcane yield.

• The conditions that induce the symptoms are being examined experimentally. However, research has been hindered by the lack of control material guaranteed to be unaffected by YCS. A more systematic approach is needed to develop a clear understanding of the causal factor(s) which will then facilitate the development of effective management practices.

• The erratic nature of YCS and incomplete understanding of its cause make assessment of the threat to the Australian sugarcane industry difficult. However, it has been clearly demonstrated that YCS can severely impact sugarcane yield and quality in some crops. Therefore, continued support for a focused research effort is warranted.”
YCS – summary recommendations:

• A focused, systematic approach to determine whether a biotic agent is the cause of YCS is needed with particular focus on plant pathology and entomology. To this end, a redirection of funds and/or additional funding may be required.
• The association of water stress with YCS needs careful investigation as a part of the systematic evaluation of the role of biotic agents in YCS.
• Further investigation of on-farm management strategies to minimise YCS severity are essential but should continue to be shifted to supervision of Productivity Services organisation experiments involving farmers.
• Multiple approaches need to be investigated to develop a “clean cane source”.
• A more critical evaluation of the huge data set generated by the “Solving YCS” project is needed.
• The promising indicators of YCS need to be confirmed and then developed into a high through-put diagnostic.
• Investigations into variability in variety responses to YCS with an evaluation of the potential for breeding and selection for resistance needs to be initiated by the breeding program.
• For on-going management of the research effort, the Scientific Reference Panel has a significant role to play. They have demonstrated the ability to provide excellent input and recommendations concerning the research that should be fully considered by the research teams.
Yellow Canopy Syndrome (continued)

• Major round of YCS sampling in Burdekin throughout February. This is an integrated effort across the research program.

• Four major YCS research projects: SRA (2), CSIRO, Western Sydney University.

• SRA has four field trials and two pot trials in the Burdekin.

• One field trial is a collaboration with BPS.

• This includes three trials on Ian Shepherdson’s farm.

• The SRA Board will consider these recommendations on Wednesday.
Conventional and GM cane varieties

Five to seven varieties were released in each region from 2011-15, well above the benchmark of three varieties per five-year period.
Plant breeding

- Three varieties Q240, Q252, Q253 were released 2012/2013.
- KQ228, Q208 and Q183 are still more than 90% of the crop
- The VAC approved the maximum propagation of two advanced clones for possible release in 2016 for the Burdekin. These are to be considered by the VAC in coming months.
- Q240 (Bundaberg variety) – 3.5% of crop. Good tonnes, avg CCS.
- Q252 (Burdekin variety) – about 1.5%. Average tonnes, good CCS. Some smut observed in dry 2015 year. BPS monitoring.
- Q253 (Burdekin variety) – about 1%. Good tonnes, low CCS. Recommended for more marginal soils.

Five to seven varieties were released in each region from 2011-15, well above the benchmark of three varieties per five-year period.
Adoption

• Belinda Billing appointed last year and many of you know her.
• New Adoption Officer Andres Jaramillo now working with Belinda here in the Burdekin.
• Fills an existing role. Andres and Belinda are the conduit for SRA for local intelligence from the Burdekin, and vice versa.
• The Adoption Group work with Productivity Services organisations, private extension providers and others to see the adoption of research and technology on farm and at the mill.
• SRA is developing an Adoption Strategy with further consideration by the SRA Board on Wednesday.
• Improved adoption requires not just research, but packaging of the information.
• Millers and growers need to be provided with the economic information to present a compelling case for adoption
Harvest losses

- The 2016/17 project call placed an emphasis on the four Impact Areas, including harvest losses.
- 7 Preliminary Research Proposals (PRPs) were assessed. 5 recommended to proceed to Final Research Proposals (FRPs).
- 2 applications were fast-tracked to take advantage of existing seed funding within 2015/16. A project has already been contracted with NorrisECT while project another is being contracted with SRA.
- SRA has submitted a large Rural R&D for Profit application addressing harvest losses. This would allow for a large government investment into harvest losses research.
- SRA has also held workshops with millers, growers and harvester operators in recent months.
New method for RSD sampling and testing

• New method of sampling for and testing RSD has been developed by SRA-funded research.

• Sampling is more efficient in the field. Testing is more sensitive in the lab.

• The SRA Board has fast-tracked a new project to see if the new testing method can be practically implemented.

• Strong collaboration with BPS and its members on sampling.

• The project will develop a business case, with a view to implementation next year.

• SRA is responding to demand from Productivity Services organisations to get the new method up and running.
Nitrogen

• EHP-funded project: *Nitrogen fertiliser requirements for representative soils of the Lower Burdekin cane growing district.*

• This collaborative project works with growers to assess low, medium and high nitrogen rates on their farms, based on the SIX EASY STEPS guidelines.

• 23 trial sites in the Burdekin.

• One trial site in Delta planted with Q253 produced 197 tonnes of cane and 26 tonnes of sugar with the Six Easy Steps recommended N rate of 150 kg/ha.

• Local field days on the project in the Burdekin on March 16.

• SRA is committed to improving the productivity and profitability of Australian sugarcane growers and millers.

• SRA’s participation in this research ensures that the industry has a credible and science-based voice at the table.
Capability

A number of programs to enhance industry and research capability:

- Travel and Learning Awards
- Early and mid career researcher awards
- Postgraduate research scholarships – internal (SRA) and external researchers
- Two examples at SRA. Danielle Skocaj (Tully, pictured right) recently completed her PhD and Annelie Marquardt (Indooroopilly, pictured left) has started.
Delegates

Delegates are an important form of communication with SRA. They can help you keep informed about and understand SRA activities and research projects.

They also provide useful local feedback back to SRA.

Your Burdekin Delegates:

- **Cy Kovacich** (Invicta, grower)
- **Arthur Woods** (Pioneer, grower)
- **Colin Ivory** (Kalamia, grower)
- **Laurence Del Santo** (Inkerman, grower)
- **Ian Davies** (Invicta, Pioneer, miller)
- **Julian Venning** (Kalamia, Inkerman, miller)
Performance report

• Performance Report developed to inform investors and industry regarding SRA progress on research and other activities.
• Developed in consultation with industry bodies and it is circulated to SRA Members.
• Provides accountability for SRA progress against your investment and helps us share information.
For more information

• SRA is your research organisation. We invest in R&D to make growers and millers more productive, profitable and sustainable.

• These forums are important to us to ensure that we understand your issues

• Visit the SRA website www.sugarresearch.com.au

• Subscribe to our enewsletter (via the website)

• Subscribe to CaneConnection magazine (via the website)
Closing remarks

As an industry-owned company, Sugar Research Australia works for the benefit of its investors. Our aim is to use our investors’ levies to create a sustainable, productive and profitable industry in which all members of the industry benefit.