
Program Four

**COMMERCIALISATION
AND UTILISATION**

COMMERCIALISATION AND UTILISATION STRATEGIES AND ACTIVITIES

The CRC has continued its strong focus on developing and commercialising Intellectual Property (“IP”). Significant progress has been made towards successfully achieving the milestones detailed in the Commonwealth Agreement.¹

Commercialisation development

Barrecote™

During the year there was significant global interest in our product Barrecote™. Barrecote™ is a waterproofing product for paper and cardboard. Unlike conventional wax waterproofing, Barrecote™ treated paper and cardboard is fully recyclable.

As a result of this interest, our commercialisation staff have been engaged in commercialisation discussions with industry leaders in paper and cardboard manufacturing. Barrecote™ is now being tested in the laboratories of several Australian and overseas companies, and a leading Australian company will soon commence a production machine test application of Barrecote™.

¹ Milestone 4.1.7 – Commercial development underway. Milestone 4.1.8 – CRC technologies delivered to end users.

GI Wise™

GI Wise™ is extracted from sugarcane waste (“bagasse”), and is significantly more effective at controlling blood sugar levels than current, widely used medications on the market. Recent CRC-run human trials of GI Wise™ produced promising results.

During the year, our CRC engaged in GI Wise™ commercialisation discussions with overseas-based pharmaceutical and nutraceutical companies and with CRC SIIB participant - Queen NutraPharm Pty Ltd. Queen have experience in manufacturing specialised food additives and access to national and international retail outlets and food markets.

End Users

Genome Profiling Service

Diversity Array Technology Pty Ltd (DARts) released a commercially-available, cost-effective, whole sugarcane genome profiling service. This service makes use of CRC SIIB technology to populate the genome with thousands of genetic markers.

As a result of our licensing arrangements with DARts, our CRC was paid royalties for the use of its technology. Under the terms of the licensing agreement, we have arranged for DARts to provide the Australian sugarcane industry with reduced rates for accessing the genome profiling service.

Authororder®

CRC SIIB Education compiled a training package aimed at helping researchers and students determine the correct order of authors as listed in a publication. During the year, our CRC held authorship order workshops for research organisations and universities. These workshops proved successful. A monthly authorship newsletter has since been launched.

Our commercialisation staff are currently in talks with a third party to continue these workshops beyond the closure of the CRC SIIB.

Australian Sugarcane Mapping and Breeding Program

Improved sugarcane varieties are fundamental for the future performance of the Australian sugarcane industry. Through our research, the CRC SIIB identified genetic markers in sugarcane that relate to commercial traits such as improved disease resistance, higher sugar content, or increased sugarcane yields.

Genetic markers have had limited use in sugarcane breeding programs, despite their successful application to breeding programs involving other crop species. We have developed cost-effective ways to apply these genetic markers to sugarcane breeding programs. The use of DNA markers in sugarcane breeding programs will produce new improved

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sugarcane varieties in time-efficient and cost-effective ways.

The IP in the genetic markers and its data relating to the application of genetic markers in sugarcane breeding programs have been assigned to CSIRO and BSES Ltd.

Metabolix Inc.

Our CRC has a research and technology commercialisation agreement with Metabolix Inc. (Metabolix), a CRC participant and US-based company that produces biodegradable plastics. Under the agreement Metabolix has been granted the option to commercialise the outcomes of a CRC SIIB project that aimed to produce biodegradable plastics using sugarcane. Metabolix has indicated that upon completion of the project, it will proceed with the commercialisation option.

In our negotiations with Metabolix, we have ensured that the Australian sugarcane industry receives the maximum benefit from the commercialisation agreement. Under the agreement the Australian sugarcane industry has been granted rights to all new product development and commercialisation opportunities utilising the project IP. Further, if the Australian industry proceeds with the product development, it will do so with preferential royalty rates. It is anticipated these benefits will enhance the Australian sugar industry's global position.

Spin-off company

Sacron Innovations Pty Ltd (Sacron Innovations) was created by our CRC with the backing and support of its participants, who are shareholders in the company. At present Sacron Innovations has two purposes:

firstly to assist in the winding up of the CRC SIIB, and secondly, to commercialise CRC IP. After the closure of our CRC and the completion of wind up activities, Sacron Innovations will focus on commercialising CRC IP assigned to the company.

Patents

- > Enzymes and Methods for Degrading Chlorinated S-triazines, 19 December 2007, Sugar Industry Innovation Pty Ltd.
- > Polyhydroxyalkanoate Production in Plants, 11 July 2007, Sugar Industry Innovation Pty Ltd.
- > Compounds Affecting Glycemic Index, 16 April 2010, Sugar Industry Innovation Pty Ltd.
- > Glycemic Index Lowering Extract and Method of Extraction, 28 April 2010, Sugar Industry Innovation Pty Ltd.
- > A Method for Treating a Paper Product, 11 July 2008, Sugar Industry Innovation Pty Ltd.
- > A Method for Coating a Paper Product, 11 July 2008, Sugar Industry Innovation Pty Ltd.
- > Production of Hyaluronic Acid, which is a merger of the following two applications:
 - > Production of Hyaluronic Acid (1), 31 August 2007, Sugar Industry Innovation Pty Ltd and the University of Queensland.
 - > Production of Hyaluronic Acid (2), 14 May 2008, Sugar Industry Innovation Pty Ltd and the University of Queensland.

Trade Marks

- > Barrecote™ Australian Trade Mark Application, Sugar Industry Innovation Pty Ltd.
- > GI-Wise™ Australian Trade Mark Application, Sugar Industry Innovation Pty Ltd.
- > Authorder®, Australian Registered Trade Mark, Sugar Industry Innovation Pty Ltd.

Intellectual Property Management

Our CRC strongly adheres to the National Principles of IP Management through its provision of guidelines and support to researchers on recognising the potential value of new discoveries, and how to best protect or exploit them. We have a clear policy on the ownership and rights associated with IP generated from CRC-funded research and this has been communicated to all stakeholders involved in CRC SIIB research and research programs.

During our seven years of research and development, our CRC has endeavoured to raise awareness of IP and IP related issues with our researchers and students. These efforts have allowed us to engage in honest and frank discussions with our researchers and students regarding research progress, and possible outcomes. This focus on IP has enabled us to efficiently identify, secure and commercialise or otherwise exploit IP.

With wind up of the CRC SIIB on 30 June, there has been much focus on the IP generated by our CRC, and how it could best

be utilised to return maximum benefit to Australia. As a result of discussions with CRC Participants, we released several pieces of IP into the public domain where it can best benefit the Australian sugarcane industry. At the time this report was drafted, efforts were underway to commercialise IP that would not enter the public domain, so that the Australian sugarcane industry is provided with alternative revenue streams.

No new IP was developed and sold, transferred or licensed for commercialisation during the reporting period.



COMMUNICATION STRATEGY

The CRC SIIB communication program has kept our staff and the Australian sugarcane industry in touch with our work; importantly the program has stimulated interest here and overseas in groundbreaking Australian science outcomes.

Strategy objectives

Our second communication strategy, developed in 2007-08, provided a framework to guide and support all CRC SIIB research and development activities.

Our program objectives have been to:

- provide credible advice and information;
- create awareness and understanding of the scope, direction and outcomes of the CRC SIIB's research through two-way communication;
- maintain and gain additional support for, and involvement in, CRC SIIB; and
- implement a cohesive approach to CRC SIIB communication.

During the final year of our CRC, the communication program helped to market the potential of bioproducts and value-added sugarcane to all stakeholders.

A new area on commercial products was developed and added to our web site.

Additionally, reference was made throughout the year to our research outcomes and their application in the commercial world through a series of articles and web site updates sent to our stakeholders, the broader sugarcane industry, scientists, commercial bodies, the general public and other members of our audience where appropriate. Communication played a key role in extending the commercial outcomes of our CRC.

Once again, Communication released regular 'public' information on our CRC's activities. Monthly media releases were distributed through media monitors to selected databases. Media follow-ups across the board were positive, including particular interest from ABC news networks, University magazines and various national and international news websites, and the national CRC newsletter. Our stories on Weediness in Sugarcane research, and ongoing publicity on our outcomes during our final year, attracted sustained media interest. Additionally, regular feature stories on a wide range of our projects were submitted to specialty publications such as the BSES Bulletin and Australian Sugarcane.

Early in the year Communication worked closely with the Genome Mapping Project to educate the CRC's audiences of the significance of genome research to the Australian sugarcane industry. In August 2009 we

helped publicise the Genome Conference in Port Douglas and developed a specialised media kit for national and international research and media groups.

Internally, our key achievements, significant internal events and staff career development options were published every six to eight weeks and distributed to staff, students and key stakeholders as a web-based newsletter.

CRC Communication worked extensively on special events during the later half of 2009 and first half of 2010. Our National Farmers Federation Conference display (July 09) focused on our contributions to the future development of bioproducts based on sugarcane. Throughout July and August 2009 we produced a 'commercial products' handout and matching banner/poster for an international biotechnology conference held in August in Montreal. We provided support for several education events and school presentations, including a 'how to make bioplastics' handout and a similar handout on 'how to conduct a simple fermentation experiment'.

Further to this, we put together the display for the CRC's section at August 2009 Exhibition held in Brisbane. This exhibit focused on Qld Science and the green energy potential of a lot of the work now underway in Qld. About 4000 leaflets, including information on our projects and the potential of biotechnology to develop environmentally 'smart' products such as bioplastics

2009/10 Highlights

- > Production and release of the 2009>10 Annual Report and Highlights.
- > Strong uptake of CRC SIIB media releases, including regular coverage on ABC radio news, national and international web coverage of several commercial stories, good regional media coverage throughout Qld and northern NSW, university magazines and websites, specialty science and innovation magazines and international websites.
- > Media interest in a release on the Genome Mapping Project (sent out in August 2009) and the Sugarcane Weediness project (several releases and feature stories distributed throughout the year).
- > Fortnightly updates and reviews of our main website including news updates and science highlights and revamped photographs to reflect the commercial status of our CRC.
- > Regular e-newsletter sent to internal CRC SIIB, industry and commercial contacts.
- > Ten feature stories published in major sugar industry and research magazines.
- > Graphics and media support for an International Genome Mapping Conference held in Port Douglas in August 2009.
- > Development of two Award submissions for the Annual CRC Conference held in Darwin.
- > Revision of CRC SIIB web site to ensure usability of the site as it remains live through to June 2014
- > Staging of a bioproducts display for various education events, the 2009 Royal National Show (RNA) held in Brisbane in early August, the 2009 World Bio Congress held in Montreal in July 2009, a new display on CRC SIIB outcomes for the final CRC SIIB Research Symposium in May 2010 and the 2010 Australian Society of Sugarcane Technologists Conference.

and recyclable cardboard, were distributed to students of all ages and the general public.

Communication was behind our CRC's involvement in the 2010 ASSCT as a principal sponsor. The potential of Biotechnology research and it's applications to the sugarcane industry was the focus of the 2010 ASSCT. Our display, Outcomes CD, handouts and powerpoint presentations presented delegates (including Australian and international sugarcane researchers, growers and business people) with the latest information on and benefits to arise from our work. The display was well visited and received many positive comments/queries. Excellent coverage of ASSCT was achieved, including

television broadcasts across the state quoting Dr Peter Twine. Towards the end of our CRC Communication provided support for our final Research Symposium through media and web site publicity, development of powerpoints, and information folders.

Early in 2010 Communication staff worked on two submissions to the national CRCA research and education awards. Our submissions involved significant research, editing and final layout to produce two professional documents for the prestigious annual CRC event.

Ongoing development and maintenance of an internal photo library resulted in exciting new imagery to support communication activities.

Bioproduct and novel sugarcane photos have been used throughout the year on our website, published material and in the many displays we took part in during the year. Some of the other communication services provided during the year included the production of a range of images on request for media, presentations and various websites, preparation and printing of CRC SIIB stationery, development of artwork for CRC SIIB promotional items, and continued review of interest in our website via Google Analytics.

The communication strategy is available at:
www.crcsugar.com

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End User Involvement and CRC Impact on End Users

Our CRC continued to actively engage with, and promote, its end user alliances', which provide benefits not only to our CRC, but also to the sugarcane industry. Through these affiliations, we assisted sugarcane producers by disseminating knowledge on improved farming practices and improving sugarcane varieties. We also encouraged the development of alternative revenue streams for the industry through partnerships that promoted the research and development of alternative sugarcane uses.

End-user name	Relationship with CRC	Type of activity and end-user location	Nature/scale of benefits to end-user	Actual or expected benefit to end-user
DARts Pty Ltd	Licensee	Development and application, Canberra, Australia	Service provider	\$100k + per annum
Metabolix Inc	Participant	Bioplastics company, Boston USA	Technology development	Currently undeterminable
KAIST	Research partner	University, Korea	Research and development	Currently undeterminable
Sugarcane millers and producers	Industry	Cane growing, Queensland and northern New South Wales	Dissemination of knowledge and improved sugarcane varieties	\$10 million + per annum
Dow AgroSciences LLC	Former Participant and Licensee	Agricultural company, Indianapolis USA	Research and development	Currently undeterminable
CSIRO/BSES sugarcane breeding program	Participants	Sugarcane Industry Breeding Program, Queensland	Genetic markers for improved sugarcane varieties	\$1million + per annum

