



SASTA NEWS

Newsletter of the SA Sugar Technologists' Association

November 2003

77th SASTA CONGRESS 2003

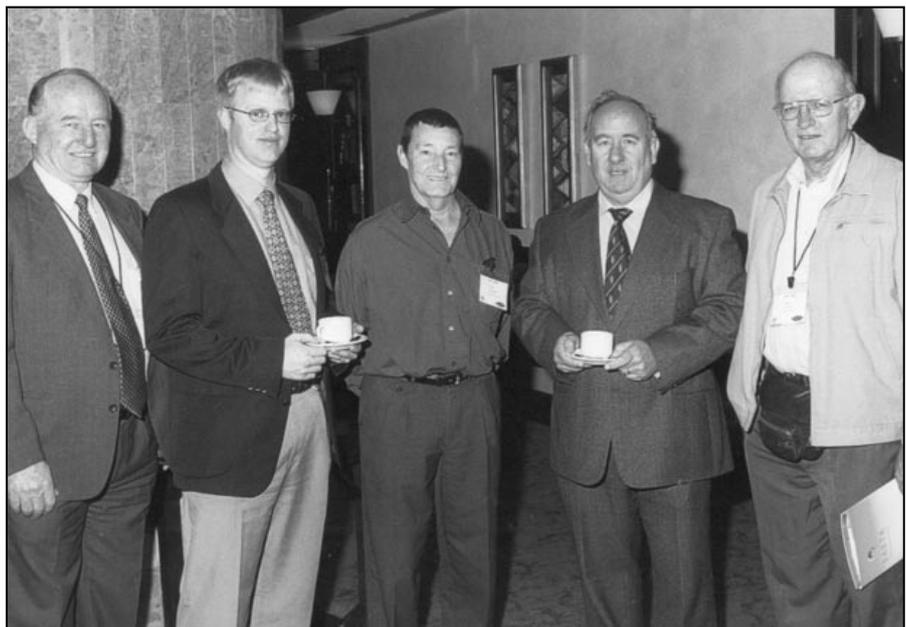
A record number of 565 delegates (482 from South Africa, 54 from SADC countries, and 29 from other countries world-wide) attended the Congress from 19 - 22 August this year. The opening day, held at the Holiday Inn: Elangeni Hotel in Durban, included an opening session and two plenary sessions, followed by the cocktail party.

One of the guest speakers, Bob Chronowski from the World Bank Carbon Finance Business Unit, spoke on "Financial leveraging with emission reduction sales: Can it work in South Africa today?" He gave an overview of the Kyoto protocol, basic clean development mechanism (CDM) rules and the potential for social and economic development benefits, pointing out that South Africans would have to be innovative, "Think of the future and think big!".

Johan Slabber, Senior Nuclear Consultant with Pebble-bed Modular Reactors (Pty) Ltd (PBMR), the second guest speaker, gave a spell-binding talk on pebble-bed modular reactor technology, with remarkably understandable content (to everyone in the audience), and with an obvious love of his subject impressed delegates to such an extent that his presentation was the "talk of the Congress".

The SASTA patron, Rodger Stewart, officially opened the Congress and Mick Greenfield, the SASTA President, addressed the technologists on the status of South Africa in terms of world leadership in the sugar industry.

The Congress then moved to Kwashukela, Mount Edgecombe for the next three days. There were 39 presentations in the Agriculture sessions, 19 in the Factory sessions, 5 in joint sessions, 4 poster presentations and a workshop on trashing which included 6 presentations and some fruitful debate. SASTA thanked all presenters and co-authors for their contribution to the Congress proceedings at the traditional dinner for authors which was held at the Elangeni hotel. The sponsors and exhibitors adorned the halls of the Kwashukela venue, enriching the Congress experience for the delegates as well as providing much appreciated support to this annual event of the sugar industry.



From left: John Boyce (Tongaath-Hulett), David Armstrong (Tongaath-Hulett), Richard Statham (Tongaath-Hulett), Tim Murray and Ted Gilfillan (Acucareira de Xinavane).

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In this issue...

- Congress 2003
- Awards 2003
- NEW Prize announced: SASTA STUDENT AWARD
- SASTA Council 2003/2004
- Zululand Field Day report
- SASTA Congress 2004: dates, deadlines and First call for papers
- ISSCT diary
- Noticeboard



Some of the people at SASTA 2003



From left: Predhie Naidoo (CTS - Amatikulu), Pam Morel du Boil (SMRI), Barbara Schoonees (SMRI), Stephen Walford (SMRI) and Stanley Munsami (Illovo - Umzimkulu)



From left: Vernon Ndlovu, Calvin Earnshaw, Richman Dlamini, Vincent Bhembe and Noah Dlamini all of Royal Sugar (Swaziland).



Milton Murobo (left) of Mkwasime and Vasco Gandanzara (Triangle).

AWARDS 2003

Agriculture

Kynoch prize

***Burkholderia tropicalis*, a potential bacterial inoculant to control nematodes and improve sugarcane growth**

S Guyon, JL Vogel, J Omarjee, T van Antwerpen, P Cadet and J Balandreau (Presented by J Balandreau)

In making their recommendation, the Panel of Judges made the following comments:

"This paper was well balanced in its presentation, with a content that contained theoretical considerations, adaptive-innovation, and a sound set of conclusions including future directions of the project. The paper describes the potential of *Burkholderia tropicalis* (a new species in the process of being taxonomically defined, by members of this group and other collaborators) as an agent for the control of nematodes and pathogens, as well as for the stimulation of plant growth. The authors adapt knowledge of a maize - *B. tropicalis* association in hypothesising that a similar association exists with sugarcane, most likely at the centre of origin for the genus *Saccharum*. A significant outcome of the project would be the continued ability to limit losses due to nematodes in the likely event that certain nematicides are removed from the market."

Cecil Renaud prize

Joint award:

1. **An environmental management system for sugarcane in the Noodsberg area of South Africa**

GW Maher and L Schulz (Presented by GW Maher)

2. **Illovo Sezela Agric case study** (Presentation at Trashing workshop)

C Pfothenauer

Highly commended:

How accurate are Canesim estimates of sugarcane production?

CN Bezuidenhout and A Singels (Presented by CN Bezuidenhout)

Poster prize

The judging panel had this to report:

"There were only four posters. None combined excellent scientific content with good visual format and presentation. Of the four, the judges rated the one by Urban *et al* highest, despite its unconventional 'information-sheet' style. It was



well structured and aesthetically pleasing and made a very effective visual aid during the short verbal presentation. While this poster format is becoming increasingly popular at scientific meetings, the technical and scientific content in this case was limited. It is recommended that no prize be awarded this year but that the best poster be given a "Highly Commended".

Highly Commended:

New biocontrol agents developed for Lantana

AJ Urban, S Nesper, J-r Baars, DO Simelane, A Den Breëyen, K Mabuda, H Klein, HE Williams, F Heystek, MS Phenye, PF Mpedi, GA Samuels and LG Mairidire

Factory

General Comments

The judges were of the opinion that the quality of papers at the 2003 Congress Factory section was higher in general than at the 2002 Congress, although the number of papers presented was fewer. In particular, there were very few papers contributed by factory staff, an ongoing problem. After consideration of the papers presented, the following awards were agreed upon.

Talbot-Crosbie Prize

Transition from leaded pol to NIR pol in the South African sugar industry.

BM Schoonees

This paper was very topical as the pol analysis method is being changed, and the pol analysis is at the heart of factory control and cane payment. The paper, while concentrating on analytical aspects, highlighted the important issue of the effects of the change in analysis on factory control and cane payment. The issues were not only covered thoroughly, but the paper was well-presented and understood by most listeners.

Cecil Renaud Award

Two papers stood out from the others, and the judges agreed to award the prize jointly to:

1. Practical management of juice flow and levels using model predictive control.

LJ Melrose

and

2. Evaluation of the STG high grade centrifugal at Huletts Refinery.

M Moodley, M Pillay, PM Schorn, G Mitchell and RE Gelling

The first paper was a comprehensive and thorough investigation of a common problem at many factories, and both the theory and the practical aspects of the problem and the

solution were well covered, including financial evaluation. The topic was not an easy one to present, which may have reduced its impact at the Congress, but the written paper is of a high quality.

The second paper was a practical evaluation of machines in a factory, and demonstrated a thorough approach and well-supported conclusions. There is an element of novelty in using continuous centrifugals on high-grade duty in a refinery, and this work has importance for factories looking at replacing high-grade batch machines with continuous machines. Although the work was carried out jointly by refinery staff and staff from Tongaat-Hulett Technical Management Department, the judges considered that the nature of the work, namely a practical investigation under production conditions in a factory, qualified it for the Cecil Renaud Award.

Robin Renton Memorial Award

The judges agreed that this Award should be presented to **LJ Melrose**, for the paper he presented as mentioned above. In addition to the comments made above, it was noted that such a detailed investigation coupled with the practical results and consideration of the operability of the system demonstrated considerable maturity on the part of the author. Although the presentation was not of the highest standard, it was still covered well, considering that the topic was difficult and long, and this was the author's first SASTA paper, a criterion of the Robin Renton Award.

Well done to all winners!!! Your prizes will be presented at the AGM during Congress 2004.

NEW AWARD: SASTA STUDENT AWARD

Following a proposal by Carel Bezuidenhout, Council announces a new prize, and is looking for a sponsor/s – any takers?

SASTA student awards will be for outstanding postgraduate research in the field of sugar and sugarcane technology, as demonstrated by:

- * A successfully examined thesis/dissertation that has given rise to internationally recognized publications or patents; and
- * A motivation that details the relevance of the work to the sugar industry.

Two awards, one for the Agriculture sector and one for the Factory sector will be considered each year. Council reserves the right not to make an award.

Prizes will consist of a cash award and a certificate. Prizewinners will be expected to present their findings at the forthcoming SASTA Congress in one of the plenary sessions on the Opening Day.

Nominations should reach the SASTA Administrator by the end of March each year.



2002 Awards Presentation



Mick Greenfield presenting the Talbot-Crosbie Prize to Steve Davis.



Craig Gers (left) and Carel Bezuidenhout receiving the Poster prize from SASTA President Mick Greenfield



Dr Brian Purchase presenting the Innovation Award to Duncan Dennis of Illovo Sezela for his innovative modified labyrinth seal.

SASTA Council 2003/2004

President: Mick Greenfield

Vice-president: Kathy Hurly

Elected members: Roger Bailey, Frikkie Botha, Barbara Hockett, Peter Lyne, Dave Meadows, Stan Munsamy, Bernard Ravno, Paul Schorn, Abraham Singels, Adrian Wynne

Co-opted members: Steve Davis, Ant Edmonds, Louise Fenwick, Stan Rau

A SWEET SASTA FIELD DAY

The warm smell of caramel enveloped the 100+ people as pure cane juice was slowly stirred in two open pans, using perforated ladles larger than a dinner plate. The juice had been obtained by feeding cane through a three-roller horizontal crusher/mill that extracted 60-65% of the juice from the stalks, leaving behind the bagasse used solely to fire the furnace.

On a recent Field Day, SASTA members listened in rapt silence as Ed Grantham explained the process he used on his Felixton farm to produce jaggery, which he later turns into toffee with a difference. Three batch pans consists of about 660 litres of cane juice, boiled down to produce 80-120 kg of jaggery. During the cooking process colloids in the cane juice are physically separated, leaving a syrup rich in potassium, calcium and iron, and not simply sucrose, as is present in most commercially available sweets. The syrup is collected in buckets which are emptied onto a cooling table, after which glucose, milk and palm oil are added. The group was shown through the factory, where long sausages of toffee are manipulated between various machines until they reach the ultimate, a machine which by a process too fast for the eye to follow tosses out neatly cut and wrapped sweets at a mesmerising rate of 750 per minute!

Ed Grantham's family has interacted with local small scale growers for over 100 years, and he buys and uses their sugarcane to make his toffees, which the SASTA members on the Field Day will confirm tasted very 'more-ish'. Ed firmly believes that, with the right advice and a friendly helping hand, even the smallest grower can become a sustainable entity.

The next stop on the Field Day was Empangeni, where Rusty Tedder manages two farms on which green cane harvesting is practised. There the group saw heavily protected women going along the rows and pre-trashing the cane. Anyone who thinks this is an easy task should try it! To do the job, one has to have the expertise to hack the leaves off without damaging the cane stalks. Rusty feels that it will take a commercial estate at least five years to convert from burning to green cane harvesting, but that the benefits of increased cane quality, better weed control and less eldana damage by far outweigh the teething problems. The local Extension Officer, Tom Fortmann, was proud to say that at least 30% of the cane delivered to the Felixton Mill is harvested green.

The group moved from Rusty's healthy fields to the Umfolosi Country Club, where local grower Errol Harrison gave a most informative presentation which outlined the long road one must tread before being registered as an organic farmer. The stringent requirements have to be in place for at



least three years before registration will be considered, and proof has to be supplied that no inorganic fertilisers, herbicides, insecticides, nematicides or ripeners have been applied to the crop over that period. A visit to the Harrison family farm confirmed Errol's claim that microbial activity in his soils is high and encourages earthworms, which in turn attract moles that provide aeration/drainage channels. There has been no eldana in the Harrison cane for the past five years, also no diseases and no nutrient deficiencies. What there is, is better water holding capacity, increased resistance to drought and higher RV than both the local ward and mill percentages. Errol replants his fields after the third ratoon, which is harvested in April/May, followed by three to four passes by a disc harrow to break down the stools and trash. The disc harrowing is repeated in September, after which the field is planted to a green manure crop of sunn hemp. When additional nutrients are required, a product called 'BounceBack' is used. BounceBack is organic chicken litter which Errol obtains from Neutrol.

Like Ed Grantham, the Harrisons use a crusher/mill to extract the juice from the cane. An open pan system then produces a syrup much in demand by jam makers and bakeries because of its clarity and purity. However, on the Harrison farm all the bagasse from the crusher is returned to the fields and forms part of the regeneration cycle. The family plan to make organic sugar available in the near future.

Achieving registration as an organic crop producer is not an easy task, and reduced income must be expected for four years and longer while the change-over takes place. And expect the labour problems that Rusty Tedder experienced when introducing green cane harvesting! Registration has to be renewed yearly, and random inspections are made for the presence of inorganic products and chemicals. Weed control can also be more costly because no herbicides are allowed. Green cane harvesting and organic farming may mean doing things the hard way, but the improvement in soil quality alone make them well worth while!

Article written by Dorothy Carslow



Rusty Tedder (with microphone) explaining harvesting techniques.



Inspecting the soil at Errol Harrison's 'organic' farm.



Ed Grantham's (inset) open pan jaggery production.

CONGRESS 2004

DATES AND FIRST CALL FOR PAPERS

Dates for the 78th SASTA Congress in Durban/Mount Edgecombe are: 27-30 July 2004

Diarise Now!

Deadlines for authors:

Papers and short communications: Titles and abstracts of approximately 250 words must reach the SASTA Administrator by 31 January 2004 and full papers and communications by 23 March 2004.

Posters: Titles and abstracts to be submitted by 31 January 2004, stating clearly that "this is a poster submission". A 1200 word summary to be submitted by 26 April 2004.

Titles, abstracts and full papers should be sent to:

Email: sasta@sugar.org.za

or to:

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The guidelines for authors will be sent out electronically to all members whose e-mail addresses we have. If you would like a copy of the "Guidelines for authors", please send a message to that effect to sasta@sugar.org.za and one will be mailed to you electronically, or give us your address for snail-mailing.



ISSCT Forthcoming Events

Workshops

Section: Entomology

Venue/Organiser: Sugar Industry Research Institute of the Sugar Industry Authority of Jamaica, JAMAICA. Contact: Trevor Faloon

Theme: New advances in pest management

Dates: 23-27 November 2003

Section: Processing

Venue/Organiser: The Sugar Technologists Association of India (STAI), Goa, INDIA. Contact: Vinay Kumar

Theme: New technologies for manufacture of quality sugar

Dates: 10-12 November 2003

Conferences

ISSCT XXV Congress: Guatemala 30 January – 4 February 2005

Remember to budget for this!

Deadline for papers for ISSCT in Guatemala 2005 is 15 January 2004! See website for all the details (<http://issct.intnet.mu>)

NOTICEBOARD

Laboratory Manuals: R150.00

SASTA Ties: R30.00

Congress Proceedings: 2000, 2001, 2002, 2003 on CD: R100.00 each

Sugar spoons: R100.00

All items obtainable from the SASTA Administrator

SASTA Administrator:

Danile Macdonald was appointed to a half-day position to assist SASTA Council to administer the affairs of SASTA. She needs your co-operation to get your current and correct details.

E-mail addresses:

SASTA Correspondence is now mainly done through e-mail. If we do not have your e-mail address, please send a message to sasta@sugar.org.za and you will be added to the electronic address list.

