PROCEEDINGS

of the

2001 CONFERENCE

of the

Australian Society

of

Sugar Cane Technologists

held at

MACKAY, QUEENSLAND

From 1st May 2001 to 4th May 2001

Edited by D.M. Hogarth

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TWENTY-THIRD CONFERENCE
MACKAY 2001

PROGRAM

The Official Opening, Annual General Meeting, General Session, and some Technical Sessions of the Conference will be held at the Mackay Entertainment Centre, Gordon St. Balance of the sessions will be in the Senior Citizen’s Hall and the Trade Display will be held in a Hoecker Pavilion adjacent to the Senior Citizen’s Hall.

TUESDAY, 1st May 2001

Registration at the Mackay Entertainment Centre, Gordon St. from 7.30 a.m.

MORNING SESSION—9.00 a.m.
Chairman: Dr Vic Mason

OFFICIAL OPENING
OF THE CONFERENCE

by

DR ROBIN BATTERHAM
CHIEF SCIENTIST
DEPT OF INDUSTRY, SCIENCE AND RESOURCES
CANBERRA

10.00 a.m.—10.30 a.m. Morning tea

GENERAL SESSION
Chairman: Dr G.E. Bullock

Paper: 10.30 a.m.—11.00 a.m. The research process from an engineering perspective, by Terry F. Dixon 1
Paper: 11.00 a.m.—11.30 a.m. The research process—canegrub management in the Australian Industry, by Peter G. Allsopp 9
Paper: 11.30 a.m.—12.00 noon Science, technology, extension and innovation—interdependent building-blocks of sustainable development, by Joe Baker 17

Paper will be distributed at Conference

12.00 noon Official opening of the Trade Display
12.15 p.m.—1.30 p.m. Lunch

AFTERNOON SESSION—1.30 p.m.

GENERAL SESSION
Chairman: Dr G.E. Bullock

Paper: 1.30 p.m.—2.00 p.m. Research and development management at the Centro de Tecnologia Copersucar (CTC), by I.C. Macedo and M.R. Lima Verde Leal 18
Paper: 2.00 p.m.—2.30 p.m. Imperatives that control R&D by an agchem company, by L. Radunz 21
Paper: 2.30 p.m.—3.00 p.m. Taking an option on research outcomes. An alternative view of R&D funding, by V. Mason 24

3.00 p.m.—3.30 p.m. Afternoon tea
GENERAL SESSION
Chairman: R. Sutherland

Paper: 3.30 p.m.–4.00 p.m. Strategic planning in the Australian sugar industry, by J.A. Baker .................................................. 32
Paper: 4.00 p.m.–4.30 p.m. Harvester roster optimisation: case studies in the Mackay region, by A.J. Higgins and D.A. Langham .......................................................... 37
Paper: 4.30 p.m.–5.00 p.m. An assessment of the 5 phase SOI climate forecasting system to improve harvest management decisions, by Y.L. Everingham, R.C. Stone and R.C. Muchow .................................................. 44

5.00 p.m.–6.00 p.m. Presentation of the Sugar Industry Innovator Awards/Research Awards

6.00 p.m. Welcome function

WEDNESDAY, 2 MAY 2001

MORNING SESSION–8.00 a.m.

AGRICULTURE SESSION
Chairman: T.G. Willcox

Paper: 8.30 a.m.–9.00 a.m. Quick field test for lime rates of pyritic drain-spoil in NSW canefields, by G.E. Rayment, M. Raymond and T. Balakrishnan .................................................. 58
Paper: 9.00 a.m.–9.30 a.m. Minimising the risk of pesticide runoff—what are the options? by Bruce Simpson, Lesley Ruddle, Robert Packett and Grant Fraser .................................................. 64

9.30 a.m.–10.00 a.m. Morning tea

AGRICULTURE SESSION (concurrent)
Chairman: T.G. Willcox

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Paper: 10.30 a.m.–11.00 a.m. Nitrate in groundwaters in Mackay and Burdekin regions, Queensland, by J.S. Biggs, P.J. Thorburn, K.L. Weier and M.L. Hopp .......................................................... 77
Paper: 11.00 a.m.–11.30 a.m. Estimation of groundwater recharge and nitrogen leaching under sugarcane in the Ripple Creek catchment, Lower Herbert, by H.P Bohl, C.H. Roth, D. Tetzlaff and J. Timmer .......................................................... 84

AGRICULTURE SESSION (concurrent)
Chairman: D.V. Calcino

Paper: 10.00 a.m.–10.30 a.m. Pre-harvest season productivity of sugarcane in different regions of Queensland, by Lisa McDonald and Andrew Wood .......................................................... 90
Paper: 10.30 a.m.–11.00 a.m. Spatial variation of sugarcane productivity in the Tully mill district: Is it worth worrying about? by R.A. Lawes, R.J. Lawn, M.K. Wegener and K.E. Basford .......................................................... 97
Paper: 11.00 a.m.–11.30 a.m. The effect of ripeners on the CCS of 47 sugarcane varieties in the Burdekin, by Lisa McDonald, Terry Morgan and Phil Jackson .......................................................... 102

11.30 a.m.–12.00 noon Agriculture AGM

12.00 noon–1.00 p.m. Lunch

MANUFACTURING SESSION
Chairman: N. Skippen

Paper: 8.00 a.m.–8.30 a.m. The development of a density measurement system for cane payment analysis, by D.H. Sanders, R.B. Tyson and D.L. Mackintosh .......................................................... 304
Paper: 8.30 a.m.–9.00 a.m. Process measurement and control with a microwave dry substance device, by S.N. Vigh, T. Diringer, M. Blain, V. Carmelito, R.M. Stobie and J.V. Edwards .......................................................... 311
Paper: 9.00 a.m.–9.30 a.m. The application of discriminant analysis to on-line near infrared spectroscopy of prepared sugar cane, by F.M. Fiedler, L.A. Edye and L.J. Watson .......................................................... 317
Paper: 9.30 a.m.–10.00 a.m. High molecular weight (HMW) colorants and their impact on the refiinability of raw sugar. A study of Australian and overseas raw sugars, by P.F. Lindeman and M.G. O’Shea .......................................................... 322

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Chairman: N. Skippen

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Paper: 11.30 a.m.–12.00 noon Pseudoplastic and viscoelastic behaviour of molasses, by Y.K. Leong, G.D. McBain, S.Y. Chu and B.C. Ong ......................................................... 341

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12.00 noon–12.30 p.m. Administrative AGM

12.30 p.m.–1.30 p.m. Lunch

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AGRICULTURE SESSION (concurrent)
Chairman: T.G. Willcox

Paper: 1.00 p.m.–1.30 p.m. Field responses to irrigation in the Ord sugar industry, by R.C. Muchow, T. Triglone, G.M. Plunkett, J.H. Sherrard, A.W. Wood and J.H. Engelke .................. 109

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Paper: 2.00 p.m.–2.30 p.m. Factors contributing to low application efficiency of furrow irrigation in the Bundaberg district, by A.I. Linedale, M.G. Haines and J.L. Collins .................. 122

AGRICULTURE SESSION (concurrent)
Chairman: D.V. Calcino

Paper: 1.00 p.m.–1.30 p.m. An appraisal of early generation selection in the central Queensland sugarcane improvement program, by C.A. Kimbeng, D. Froyland, D. Appo, A. Corcoran and M. Hetherington 129

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Chairman: T.G. Willcox

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Chairman: T.G. Willcox

3.30 p.m.–5.00 p.m. Agricultural posters

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Chairman: N. Skippen

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Chairman: N. Skippen

4.30 p.m.–5.30 p.m. Surviving with reduced maintenance expenditure
THURSDAY, 3 MAY 2001

MORNING SESSION—8.00 a.m.

AGRICULTURE SESSION (concurrent)
Chairman: T.G. Willcox

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Paper: 8.30 a.m.–9.00 a.m. Effect of compaction and trash blanketing on rainfall infiltration in sugarcane soils, by M.J. Bell, N.V. Halpin, D.N. Orange and M. Haines ......................................................... 161
Paper: 9.00 a.m.–9.30 a.m. An overview of green cane trash blanketing research undertaken in the Proserpine mill area, by Geoff Newell, Marcus Hardie and Mandy Adams ............................................. 168
Paper: 9.30 a.m.–10.00 a.m. Trash conservation increases cane yield in the Mackay district, by L.S. Chapman, P.L. Larsen and J. Jackson .......................................................... 176

AGRICULTURE SESSION (concurrent)
Chairman: D.V. Calcino

Paper: 8.00 a.m.–8.30 a.m. Changes in cane soil properties from applications of sugarmill by-products, by G.A. Barry, G.E. Rayment, A.J. Jeffrey and A.M. Price ......................................................... 185
Paper: 8.30 a.m.–9.00 a.m. Economics of sugar mill by-products as a source of nutrients in the Australian sugar industry in Mackay, by M.E. Qureshi, M.K. Wegener and F.M. Mason ........................................ 192
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Chairman: J. Jones

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11.30 a.m.–1.00 p.m. Lunch—Manufacturing

AFTERNOON SESSION—12.30 p.m.

AGRICULTURE SESSION (concurrent)
Chairman: T.G. Willcox

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AGRICULTURE SESSION (concurrent)
Chairman: D.V. Calcino

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MANUFACTURING SESSION
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FRIDAY, 4 MAY 2001

MORNING SESSION—8.00 a.m.

AGRICULTURE SESSION (concurrent)
Chairman: D.V. Calcino

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Chairman: T.G. Willcox

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AGRICULTURE SESSION
Chairman: T.G. Willcox

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Paper: 11.00 a.m.—11.30 a.m. Plant cane responses to silicated products in the Mossman, Innisfail and Bundaberg districts, by S. Berthelsen, A. Hurney, G. Kingston, A. Rudd, A. Garside and A.D. Noble ................................................................. 297
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Chairman: J. Jones

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Paper: 8.30 a.m.–9.00 a.m. Modelling the compression, shear and volume behaviour of final bagasse, by F. Plaza, H.D. Harris and J.M. Kirby 428

Paper: 9.00 a.m.–9.30 a.m. Fundamental studies into the dewatering of prepared cane and bagasse between grooved surfaces, by D.J. Kauppila, J.G. Loughran and G.A. Kent 437

9.30 a.m.–10.00 a.m. Morning tea

MANUFACTURING SESSION
Chairman: J. Jones

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Paper: 11.00 a.m.–11.30 a.m. A model to estimate milling unit throughput, by G.A. Kent 457

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