

33rd Annual Conference of the Australian Society of Sugar Cane Technologists 2011

**Mackay, Queensland, Australia
4 – 6 May 2011**

ISBN: 978-1-61782-921-5

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by Australian Society of Sugar Cane Technologists
All rights reserved.

Printed by Curran Associates, Inc. (2011)

For permission requests, please contact Australian Society of Sugar Cane Technologists
at the address below.

Australian Society of Sugar Cane Technologists
PO Box 5596
Mackay Mail Centre
QLD Australia 4741

Phone: (07) 4959 9100
Fax: +61 7 4959 9100

assctadmin@ozemail.com.au

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

AGRICULTURE SESSION

A Brief History of Disease Epidemics in Queensland of Some Economic Outcomes	1
<i>RC Magarey, A Royal, DJ Williams, JI Bull</i>	
Sugarcane Quarantine Disease Screening in Australia	13
<i>Nicole Thompson, Elizabeth Wilson, Barry Croft</i>	
Survey of Sugarcane Pests their Natural Enemies on the Atherton Tableland, Far North Queensland	23
<i>N Sallam, DJW Burgess, GE Lowe, Dr Peck</i>	
Irrigation Scheduling in the Central Region: Making Every Drop Count	31
<i>SJ Attard, NG Inman-Bamber</i>	
The Davco Groundwater Project—A Grower Initiated Multidisciplinary Approach To Groundwater Management in the Burdekin District	40
<i>Evan Shannon, Gary Ham, Amy Haller, David Cox</i>	
Impact of Sugar Cane Farming Practices on Water Quality in the Mackay Region	54
<i>JR Agnew, K Rohde, A Bush</i>	
Sampling Plans for Greyback Canegrub, Dermolepida Albohirtum, to Aid Management Decisions at Farm District Level.....	63
<i>PR Samson, N Sallam, FA Drummond</i>	
suSCon® MaxiControl of Childers, NegatoriaSouthern One-Year Canegrubs in Sugar-Cane.....	72
<i>KJ Chandler, GR Tucker</i>	
Insecticides for Control of Greyback Canegrub in New Planting Systems.....	82
<i>PR Samson, TN Staier, AN Eaton</i>	
The Herbert Information Portal: Delivering Real-Time Spatial Information to the Herbert River Sugar Community.....	91
<i>R De Lai, G Packer, M Sefton, R Kerkwyk, AW Wood</i>	
Have We Reached Peak CCS?	100
<i>Geoff Inman-Bamber, Phillip Jackson, Graham Bonnett, Terry Morgan</i>	
Yield Losses from Sugarcane Smut: Indications from Herbert Mill DataFrom Individual Crop Assessments.....	109
<i>RC Magarey, TJ Sheahan, M Sefton, RR Kerkwyk, JI Bull</i>	
Incidence Versus Severity—What Difference Would It Make to Smut Screening.....	118
<i>SA Bhuiyan, BJ Croft</i>	
Video Mediated Social Networks: A Future Adoption Pathway for the Australian Sugar Industry?.....	126
<i>WHP Thomas</i>	
Investigation of Crop Losses Due to Moth Borers In Indonesia	136
<i>FR Goebel, E Achadian, A Kristini, M Sochib, H Adi</i>	
Screening for Borer Resistance Among Sugarcane Varieties in Papua New Guinea, 2003–2008.....	145
<i>KT Korowi, PR Samson, LS Kuniata</i>	
The Influence of two Pachymetra Root Rot Resistance Screening Methods on the Ratings of Standard Varieties.....	154
<i>RC Magarey, JI Bull, KJ Lonie, BJ Croft</i>	
The Relationship Between Glasshouse Field-Derived Resistance Ratings for Pachymetra Root Rot	162
<i>RC Magarey, JI Bull</i>	
In-Field Measurement of Sugarcane Composition for Drying-off on the Tabelands.....	169
<i>David Donald, Steve Staunton, Drewe Burgess</i>	
Are Genotype By Row Configuration Interactions of Consequence in Cultivar Development for Wide Row Production?	179
<i>B Salter, AL Garside, N Berding, J Perna, G Park</i>	
Evaluation of Crop Growth Modelling to Support Estimates of Seasonal Cane Yield for Three Mill Zones in Southern Queensland	188
<i>G Kingston</i>	
The Economic Value of Conditioning Harvest Start Date on Long-Lead Seasonal Climate Forecasts.....	197
<i>JA Osborne, NE Stoeckl, YL Everingham, NG Inman-Bamber, R Welters</i>	
Efficacy of Pre-Emergent Herbicides on Fresh Trash Blankets—Results on Early-Harvested Rations.....	206
<i>Emilie Fillols, Barry Callow</i>	

Historical Analysis of Rodent DynamicsDamage Using Queensland Sugarcane Industry Monitoring Data.....	222
<i>BC Dyer, SJ Fuller, I Williamson</i>	
Resistance to Plant-Parasitic Nematodes (Pratylenchus ZeaeMeloidogyne Javanica) in Erianthus Crosses Between Erianthus Sugarcane	230
<i>GR Stirling, MC Cox, J Ogden-Brown</i>	
Regulation of Genetically Modified (GM) Sugarcane in Australia.....	238
<i>HJ Mitchell</i>	
Sugarcane Nutritional Analysis to Enable Food Safety Assessment of GM Cultivars—Approaches to Establishing a Baseline	246
<i>AL Rae, GD Bonnett</i>	
An Introduction to Multivariate Adaptive Regression Splines for the Cane Industry	255
<i>YL Everingham, J Sexton</i>	

MANUFACTURING SESSION

Estimating Sugarcane Composition using Ternary Growth Relationships	269
<i>S Staunton, D Donald, G Pope</i>	
Developing Laboratory Near Infra-Red (NIR) Instruments for the Analysis of Sugar Factory Products.....	278
<i>MG O'Shea, SP Staunton, D Donald, J Simpson</i>	
A Review of NIR Applications for Process Control Purposes.....	286
<i>J Simpson, S Staunton, M O'Shea</i>	
Effects of Loss of Cooling Tower Capacity on Factory Operations at Macknade Mill.....	294
<i>A Douglas, R Broadfoot, A Craig</i>	
Design Features for Direct Contactors Condensers	304
<i>PG Wright</i>	
Evaluation of Solid Bowl Johnson Screen in a Western States Continuous Low Grade Fugal.....	313
<i>G Pope, P Accatino, A Cramp, J Hold</i>	
Sugar Mill Boiler Cycle Chemistry: an Update on Best Practices.....	320
<i>David Rodman</i>	
Improving the Combustion Performance of the Farleigh No. 3 Boiler	328
<i>AP Mann, R Rasmussen</i>	
Overfire Air System Improves Biomass Stoker Boiler Operation.....	335
<i>R Bursey, R Lawton, I Jameel, D Maher</i>	
Advanced Controls for a Biomass Boiler	345
<i>D Moller, R Ironside</i>	
Optimisation of Low Load Boiler Operations	350
<i>AP Mann, SJ Scott</i>	
The Effect of Whole Crop Harvesting on Crop Yield.....	356
<i>PJ McGuire, M Inderbitzin, B Rich, GA Kent</i>	
The Composition of Sugarcane Juices Derived From Burnt CaneWhole Green Cane Crop	368
<i>CCD Thai, WOS Doherty</i>	
Phenolics in Sugar Cane Juice: Potential Degradation by Hydrogen Peroxide and Fenton's Reagent.....	377
<i>DMT Nguyen, WOS Doherty</i>	
An Additional Step Towards Modelling the Mechanical Behaviour of Sugar Cane Bagasse.....	387
<i>F Plaza</i>	
Microwave Modification of Sugar Cane To Enhance Juice Extraction During Milling.....	392
<i>Graham Brodie, Mohan V Jacob, Madoc Sheehan, Ling Yin, Megan Cushion, Gerard Harris</i>	
BenefitsCost Savings of In-House Condition Monitoring.....	400
<i>Paul Thompson</i>	
Reducing the Environmental Impact Optimising Nutrient Requirements for Mill Mud Applications in Cane Farming Operations.....	413
<i>J Markley, B Refalo</i>	
Pelleting Mill Mud Ash	424
<i>GA Kent, F Plaza, A Booth, P Quagliata</i>	
Centrifuging Rotary Vacuum Filter Mud at Tully Mill	434
<i>F Plaza, A Booth, J Xing, GA Kent</i>	
Adding Value to Sugarcane Bagasse using a Xylose Metabolising Yeast.....	446
<i>Arthur Kollaras, Paul Koutouridis, Michael Moore, Philip Bell, Paul Attfield</i>	

An Update on the Mackay Renewable Biocommodities Pilot Plant: Preliminary Trial Results	454
<i>HH Wong, PL Albertson, IM O'Hara</i>	
Delivering the Herbert 10 Tonne Cane Wagon	461
<i>LG Santarossa, PF Britton, D Edelman</i>	

POSTER SESSION

Evaluation of Soil Properties Constraining Sugarcane Productivity in Western Kenya	470
<i>RA Amolo, DO Sigunga, PO Owuor</i>	
Soil Renovation Rescue	471
<i>Andrew Dougall</i>	
Managing Spatial Variability in Sugarcane Production Systems	472
<i>JR Hughes</i>	
Production Preliminary Analysis of Biocrude from the Hydrothermal Liquefaction of Bagasse	473
<i>L Moghaddam</i>	
Characterisation of Saccharum – Erianthus Backcross Hybrids	474
<i>Nathalie Piperidis</i>	
Feasibility of Predicting Silicon, Carbon, Nitrogen, Phosphorus Potassium Levels in Mill Waste by-products using Near Infrared Spectroscopy (NIRS)	475
<i>DE Purcell</i>	
Paddock Regional Scale Yield Prediction of Cane Using Satellite Imagery	476
<i>Andrew Robson</i>	
Colobscribers: the Latest Generation of On-line Colour Analysers—a Smart High-tech Eye to Track Sugar Quality	477
<i>Coraline Trintignac</i>	
Nitrous Oxide Methane Fluxes from a Sugarcane Soil under Different Management Regimes	478
<i>WJ Wang</i>	
Author Index	