

32nd Annual Conference of the Australian Society of Sugar Cane Technologists 2010

**Bundaberg, Australia
11-14 May 2010**

ISBN: 978-1-61738-827-9

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© (2010) by Australian Society of Sugar Cane Technologists
All rights reserved.

Printed by Curran Associates, Inc. (2010)

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

SUGARCANE SEXUAL REPRODUCTION IN A COMMERCIAL ENVIRONMENT: RESEARCH TO UNDERPIN REGULATORY DECISIONS FOR GENETICALLY MODIFIED SUGARCANE	1
<i>G D Bonnett, J J Olivares-Villegas, N Berding, T Morgan</i>	
OVERVIEW OF SUGARCANE INDUSTRY BIOTECHNOLOGY WORKSHOPS	10
<i>Suzanne E Morris</i>	
ASSET MANAGEMENT AND ELECTRONIC CONSIGNMENT	20
<i>S Marrero, S Ponce, A Guerrer, M Sefton, A Camacholi, L P Bella, R Di Della, R. De Lai, A Girgenti</i>	
ENVIRONMENTAL BENEFITS AND TRADE-OFFS OF PRODUCING BIO-ENERGY AND BIO-MATERIALS FROM AUSTRALIAN SUGARCANE	28
<i>M A Renouf, R J Pagan, M K Wegener</i>	
SUGARCANE SMUT AFTER THREE YEARS: A POLICY RETROSPECTIVE	38
<i>G Antony, R Magarey, B Milforf</i>	
EFFICACY OF BIOCANETM AGAINST SOUTHERN ONE-YEAR CANEGRUB, ANTITROGUS CONSANGUINEUS	50
<i>P R Samson, G S Bade, W J Harris</i>	
STATUS OF WINTER CEREALS, OTHER ROTATION CROPS AND COMMON WEEDS AS HOSTS OF LESION NEMATODE (PRATYLENCHUS ZEAE)	62
<i>G R Stirling, N V Halpin, A Dougall, M J Bell</i>	
QUANTIFYING SPATIAL MOVEMENT OF THE GREYBACK CANE BEETLE IN THE SUGARCANE LANDSCAPE: DATA AVAILABLE AND RESEARCH NEEDS	71
<i>F R Goebel, N Sallam, P R Samson, K Chandler</i>	
SUSCON® MAXI AND CONTROL OF GREYBACK CANEGRUB IN SUGARCANE	84
<i>K J Chandler, G R Tucker</i>	
EFFECT OF ZERO AND ZONAL TILLAGE ON CANE GROWTH AND YIELD ON A HEAVY CRACKING CLAY SOIL IN THE HERBERT VALLEY	97
<i>G Park, A L Garside, B Salter, J M Perna</i>	
ASSESSMENT AND POSSIBLE ADAPTION OF THE DOUBLE-DISC OPENER PLANTER TECHNIQUE IN THE WET TROPICS	110
<i>A P Hurney, D M Skocal</i>	
INTERACTIONS BETWEEN ROTATION BREAKS, TILLAGE AND N MANAGEMENT ON SUGARCANE GROWN AT BUNDABERG AND INGHAM	119
<i>M J Bell, A L Garside, N. Halpin, B Salter P W Moody, G Park</i>	
AN EVALUATION OF THE POSSIBILITY OF USING MINIMUM TILLAGE IN A CANE/PEANUT ROTATION FARMING SYSTEM: A GROWER GROUP PERSPECTIVE	140
<i>D J Halpin, N V Hapin, D Randell, L Pippia, D Randell, A Chapman</i>	
IMPACT OF TILLAGE AND RESIDUES FROM ROTATION CROPS ON THE NEMATODE COMMUNITY IN SOIL AND SURFACE MULCH DURING THE FOLLOWING SUGARCANE CROP	152
<i>G R Stirling, N V Halin, M J Bell, P W Moody</i>	
IPM STRATEGIES FOR PEST AND DISEASE CONTROL IN INDONESIA: PROJECT OVERVIEW AND OUTCOMES FROM RECENT ACIAR-FUNDED RESEARCH	169
<i>R C Magarey, A Kristini, N Sallam, P R Samson, E Achadian, P J McGuire, R Goebel, K J Lonie</i>	
MONITORING SUGARCANE MOTH BORERS IN INDONESIA: TOWARDS BETTER PREPAREDNESS FOR EXOTIC INCURSIONS	181
<i>Nader Sallam, Etik Achadian, Ari Kritisini, Muchamed Sochib, Herwan Adu</i>	
DISTRICT YIELD POTENTIAL: AN APPROPRIATE BASIS FOR NITROGEN GUIDELINES FOR SUGARCANE PRODUCTION	193
<i>B L Schroeder, A W Woof, M. Sefton, A P Hurney, D M Shocaj, T Stainlay, P W Moofy</i>	
FARMING SYSTEMS AND THEIR EFFECT ON THE RESPONSE OF SUGARCANE TO NITROGEN	210
<i>B Salter, B Schroeder, J Perna</i>	
OPPORTUNITIES FOR IMPROVING THE EFFICENCY OF USE OF NITROGEN FERTILISER IN THE AUSTRALIAN SUGAR INDUSTRY	221
<i>A W Wood, B L Schroeder, R. Dwyer</i>	
PURSUNG HIGHER EFFICACY FOR MANAGED PHOTOPERIODIC INITIATION OF SUGARCANE FLOWERING IN THE TROPICS	234
<i>Nils Berding, Rhylee S. Pendrigh, Vivien Dunne</i>	

MANAGING VARIETY IMPROVEMENT PROGRAM OPERATIONS USING AN INTEGRATED DATABASE AND HANDHELD COMPUTERS TO IMPROVE EFFICIENCY AND REDUCE ERRORS	251
<i>Phil Lethbridge, Mike Cox</i>	
EVALUATION OF COMMERCIAL PERFORMANCE AND ATTRIBUTES OF Q200A IN NORTH QUEENSLAND	262
<i>Nils Berding, Ross K McIntyre</i>	
ASSESSMENT OF A CONSTRUCTED WETLAND TO REDUCE ACIDITY DISCHARGE IN CANELAND DRAINS	278
<i>R G Quirk, A S Kinsela, I. White, B C T Macdonald, M D Melville</i>	
LINKING MEASURED CARBON DIOXIDE EXCHANGE BY SUGARCANE CROPS AND BIOMASS PRODUCTION	286
<i>O T Denmead, B C T Macdonald, I White, D W T Griffith, G Bryant, T Naylor, S R Wilson, W J Wang</i>	
INTERACTION OF IRON AND NITROGEN CYCLES: IMPLICATIONS FOR FERTILISER MANAGEMENT AND GREENHOUSE GAS EMISSIONS	293
<i>B C T Macdonald, I White, O T Denmead</i>	
SCREENING FOR DOWNY MILDEW RESISTANCE AT RAMU AGRI-INDUSTRIES, GUSAP, PNG 1986–2008	301
<i>L S Kuniata, R C Magarey, G R Rauka, S Suma, J I Bull</i>	
SCREENING FOR RAMU STUNT RESISTANCE AT RAMU AGRI-INDUSTRIES, GUSAP, PNG 1986–2008	312
<i>L S Kuniata, R C Magarey, G R Rauka, S Suma, J I Bull</i>	
WATERSENSE WEB BASED IRRIGATION SCHEDULING AND CLIMATE INTERPRETIVE TOOL SUPPORTS ADAPTIVE MANAGEMENT STRATEGIES APPROACH	322
<i>M G Haines, S J Attard</i>	
A CASE STUDY ON THE ECONOMICS OF OVERHEAD IRRIGATION IN THE LOWER BURDEKIN	333
<i>M J Poggio, C Hesp, S J Attard, T Cameron</i>	
YIELD LOSSES CAUSED BY SUGARCANE SMUT IN SEVERAL CROPS IN QUEENSLAND	347
<i>R C Magarey, J I Bull, T Sheahan, D Denney</i>	
VARIETAL RESISTANCE OF SUGARCANE TO NATURAL INFECTION OF SMUT—PRELIMINARY RESULTS	355
<i>Shamsul A Bhuiyan, Barry J Croft, Mike C Cox, George Bade</i>	
ON-SITE RAPID SCREENING FOR SUGARCANE SMUT RESISTANCE USING NEAR-IR (NIR) SPECTROSCOPY	366
<i>De Purcell, J P Oxley, M C Cox, B J Croft, M G O'Shea</i>	
THE AUSTRALIAN SUGARCANE SMUT EPIDEMIC: EPIDEMIOLOGICAL CONSIDERATIONS AND PREDICTIONS FOR THE FINAL STAGES	375
<i>R C Magarey, D Denney, T Sheahan, J I Bull</i>	
AGDAT: SPATIAL APPLICATIONS TO IMPROVE HARVEST MANAGEMENT, DATA RECORDING AND REPORTING, AND DATA EXCHANGE BETWEEN ORGANISATIONS	388
<i>Robert Crossley, John Markley</i>	
STABILITY OF SPATIAL PATTERNS DEFINED BY ELECTRICAL CONDUCTIVITY MAPPING OF SOILS WITHIN SUGARCANE PADDOCKS	397
<i>R J Coventry, J R Hughes, A E Reid, P McDonnell</i>	
ASSESSMENT OF SUGARCANE YIELD MONITORING TECHNOLOGY FOR PRECISION AGRICULTURE	410
<i>T Jensen, C Baillie, R Bramley, L Di Bella, C Whiteing, R Davis</i>	
MACHINE VISION-BASED WEED SPOT SPRAYING: A REVIEW AND WHERE NEXT FOR SUGARCANE?	424
<i>Cheryl McCarthy, Steven Rees, Craid Baillie</i>	
FIBRE DETERMINATION BY HYDRAULIC PRESSING—WHICH METHOD IS CORRECT?	433
<i>Nils Berding</i>	
OPERATIONAL VALIDATION OF THE EFFICACY OF SPECTRACANE™, A HIGH-SPEED ANALYTICAL SYSTEM FOR SUGARCANE QUALITY COMPONENTS	445
<i>Nils Berding, David H Marston</i>	
EFFICACY OF PRE-EMERGENT HERBICIDES ON FRESH TRASH BLANKETS – RESULTS ON LATE-HARVESTED RATOONS	460
<i>Emilie F J Fillols, Barry G Callow</i>	
CONFIRMATION OF NITRATE LEACHING POTENTIAL OF SELECTED SOILS IN THE BURDEKIN DELTA REGION	474
<i>G Kingston, M C Anink</i>	

CARBON PARTITIONING IN THE SUGARCANE STALK	486
<i>F C Botha, Z A McDonald</i>	
A CASE OF HOW THIS OCCURRED IN THE AUSTRALIAN SUGAR INDUSTRY	497
<i>W H P Thomas</i>	
WIELDING THE CANE: OUTCOMES FROM THE CRC SIIB'S POSTGRADUATE EDUCATION PROGRAM	507
<i>Suzanne E Morris</i>	
ACHIEVING LOW STEAM ON CANE WITH DIRECT CONTACT JUICE HEATERS	517
<i>B Tyson, T Drury, D Heck</i>	
FORMATION OF THERMODYNAMICALLY UNSTABLE CALCIUM OXALATE DIHYDRATE IN SUGAR MILL EVAPORATORS	522
<i>Christopher P East, William O S Doherty, Christopher M Fellows, Hong Yu</i>	
THE IMPLEMENTATION OF A MILL MUD AND ASH DELIVERY STRATEGY IN MACKAY	534
<i>J Markley, A Raines, P Everitt, R Crossley</i>	
ESTIMATING BAGASSE PRODUCTION	546
<i>G A Kent</i>	
THE EFFECT OF WHOLE CROP PROCESSING ON SUGAR RECOVERY AND SUGAR QUALITY	559
<i>G A Kent, D J Moller, P D Scroope, R Broadfoot</i>	
WHOLE CROP PROCESSING AT BROADWATER MILL: IMPACTS ON PROCESS OPERATIONS	573
<i>D Moller, R Broadfoot, S Bell, H Baker</i>	
CARBON CAPTURE WITH SUGARCANE TECHNOLOGY	588
<i>Griff Thomas, Wayne A Davies</i>	
THE POTENTIAL FOR ETHANOL PRODUCTION FROM SUGARCANE IN AUSTRALIA	600
<i>I M O'Hara</i>	
INCREASED PROFITABILITY THROUGH PRODUCT DIVERSIFICATION AND IMPROVED SUGAR QUALITY	610
<i>Bandu Wijesinghe, Ram Mereddy, Roger Stanley</i>	
A FURTHER STEP IN THE MODELLING OF THE MECHANICAL BEHAVIOUR OF BAGASSE	621
<i>F Plaza</i>	
PREDICTING THE EFFECTS OF FUEL PROPERTIES ON COMBUSTION PERFORMANCE	629
<i>A P Mann</i>	
ELECTRICAL FAULT LEVEL REDUCTION AT FARLEIGH MILL	638
<i>Reg Millett</i>	
FACTORY RELIABILITY IMPROVEMENT THROUGH DOWNTIME MONITORING AND DEFECT ELIMINATION	646
<i>I Letizia, R Brown</i>	
CSR SUGAR TURBINE MANAGEMENT PROGRAM	655
<i>Geoff Masotti</i>	
BOILER INDUCED DRAFT FAN OPTIMISATION	665
<i>Rhys Thompson, Dane Wong</i>	
ACHIEVING CONSISTENT LOCOMOTIVE BRAKING PERFORMANCE	679
<i>G A Kent, N J McKenzie, D E Koppen, C McCallum</i>	
MILLING TRAIN MACERATION CONTROL UTILISING NIR TECHNOLOGY	688
<i>T Lloyd, S Eastment, P Mitchell</i>	
MODELLING POPULATION DYNAMICS OF GREYBACK CANEGRUB	696
<i>Peter Samson, Frank Drummond</i>	
HORIZONTAL ROTARY CULTIVATION AS A MEANS OF PRODUCING A SEED BED IN A SINGLE PASS	697
<i>John Wilkinson, Graham Jorgensen</i>	
COMPOSITION OF SELECTED NITROGEN-RELATED MICROBIAL COMMUNITIES IN A TROPICAL SOIL UNDER SUGARCANE	698
<i>J Holst, C Paungfoo-Lohienne, R Mondav, N Robinson, R Bracken, P Lakshmanan, P Schenk, S Schmidt</i>	
EVALUATION OF NEMATODE RESISTANCE OF SUGARCANE VARIETIES	699
<i>J Ogden-Brown, G Stirling, M Cox, P Jackson</i>	
A PRACTICAL APPLICATION OF PA TOOLS IN THE BARRON RIVER DELTA	700
<i>T. Parker, M Savina, Derek Sparkes, Dave Morrison, Kristjan Sorenson, Lawrence Dibella</i>	
COMPARING PRECISION AGRICULTURAL TOOLS AND THEIR USEFULNESS IN THE AUSTRALIAN SUGAR CANE INDUSTRY	701
<i>L P Di Bella, R J Coventry, P McDonnel, J Hughes, T Parker, E Ponce, M Sefton</i>	

ALTERNATIVE SCREENING FOR SUGARCANE SMUT RESISTANCE USING HISTOPATHOLOGY	702
<i>V J Barden, S A Bhuiyan, B J Croft, M C Cox</i>	
CRYSTALLISATION AND ANALYSIS OF SUGAR FROM GENETICALLY MODIFIED SUGARCANE PLANTS	703
<i>Priya Joyce, Son-Quang Dinh, Liz Burns, Michael O'Shea</i>	
HIGH PERFORMANCE SCREENS FOR CONTINUOUS CENTRIFUGES	704
<i>Paul Wassing</i>	
DEVELOPMENT OF SMUT CAUSED BY USTILAGO SCITAMINEA IN SUGARCANE	705
<i>G S Bade, S A Bhuiyan, B H Croft, M C Cox</i>	
TRANSGENIC MODIFICATION OF SUGARCANE FOR CELLULOSIC ETHANOL PRODUCTION	706
<i>Mark Kinkema, Kylie Shand, James Dale</i>	
ENHANCING TRANSGENE EXPRESSION IN MATURE SUGARCANE	707
<i>Brett Williams, Anthony Brinin, Anthony Palupe, James Dale, Mark Kinkema</i>	
DEPOSITION OF HYDROXYAPATITE AND CALCIUM OXALATE DIHYDRATE ON A HEAT EXCHANGER TUBE	708
<i>C P East, W O S Doherty, C M. Fellows, H. Yu</i>	
PHOSPHORUS FERTILISER REQUIRMENTS FOR SOILS WITH VERY HIGH PHOSPHORUS SORPTION CHARACTERISTICS	709
<i>A P Hurney, B L Schroeder, D M Skocai</i>	
EVALUATION OF A READILY BIODEGRADABLE CHELATING AGENT FOR REMOVING CALCIUM SCALE FROM FOULED EVAPORATORS	710
<i>Cris Robb, Corine De Wolf, Josine Bemelaar</i>	
MODELLING SCENARIOS FOR BIOMASS OPPORTUNITIES IN SUGARCANE	711
<i>Anne L Rae, David Lam, Michael G O'Shea</i>	
PRELIMINARY ASSESSMENT OF CCS VARIABILITY WITHIN A SUGAR BLOCK AND HOW THIS RELATES TO YIELD	712
<i>N Nawi, T Jensen, L Di Bella, C Whiteing, C Baillie</i>	
USING SPATIAL MAPPING LAYERS TO UNDERSTAND VARIABILITY IN PRECISION AGRICULTURAL SYSTEMS FOR SUGARCANE PRODUCTION	713
<i>A Robson, J R Hughes, R J Conventry</i>	
BOILER TUBE DEFECTS CAUSED BY VIBRATION WEAR	714
<i>Charles Panos</i>	
Author Index	