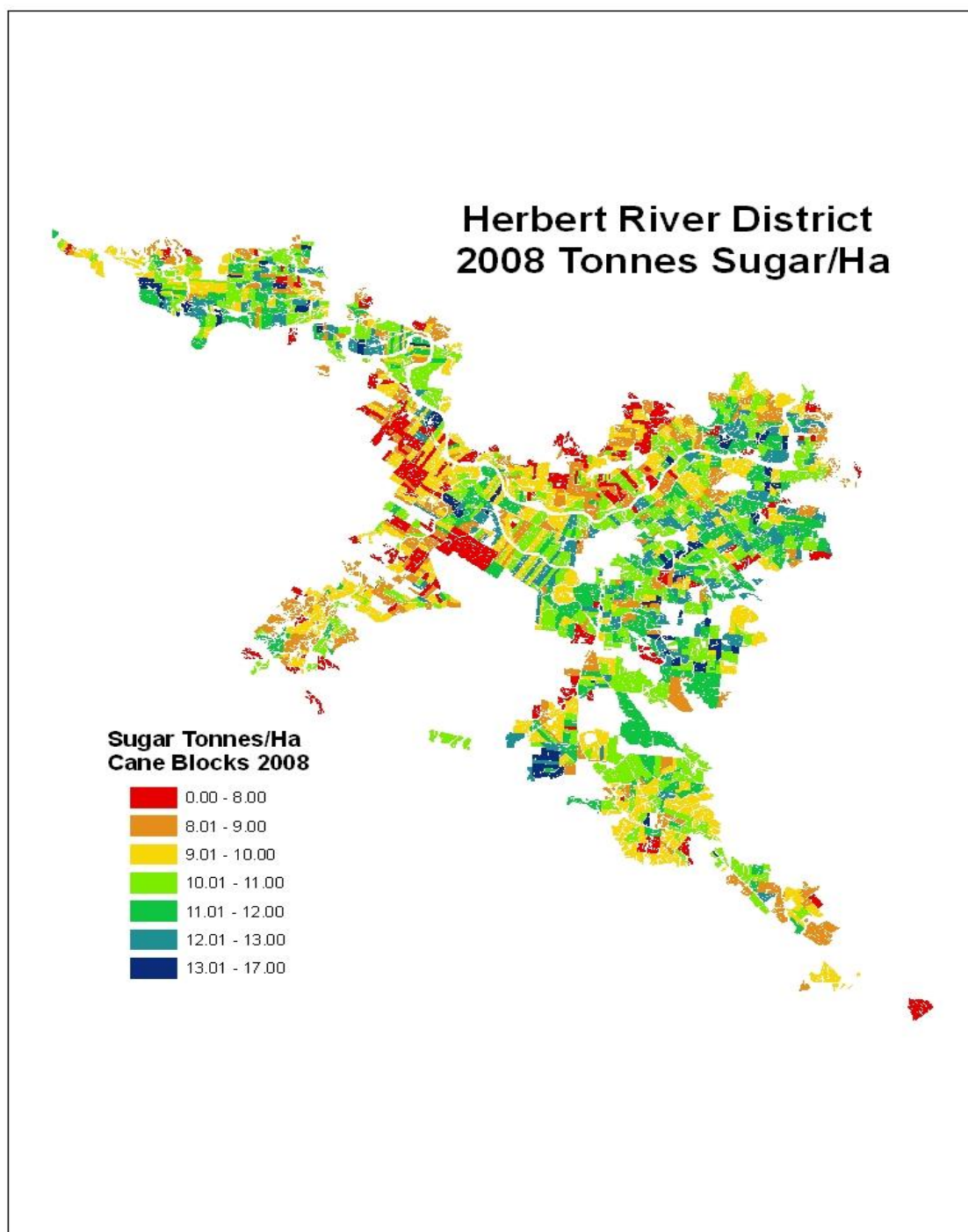


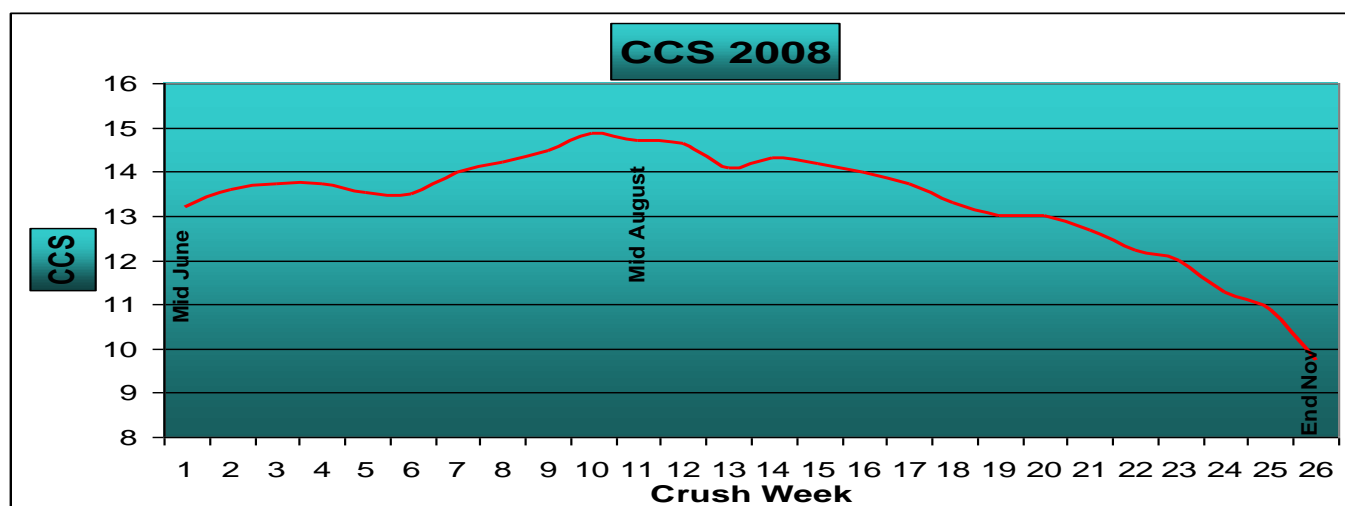


HERBERT PRODUCTIVITY REPORT 2008



This is the seventh Herbert Productivity Report produced as part of the Herbert Cane Productivity Initiative. This report provides details of the 2008 crop and many projects and initiatives aimed at enhancing industry productivity and profitability. We hope that the contents of this report will assist growers to make informed decisions on what variety to plant, when to harvest different blocks and what crop management practices and pest and disease control measures are appropriate for your farm. Much of the material in this report will be explained in more detail at Productivity Forums. We encourage you to attend the forums covering your part of the district or drop into the office. We would like to thank the growers and harvesting crews for supplying the cane block and cane consignment data on which this report is based upon. This data is pivotal for cane payment and provision of accurate data reporting.

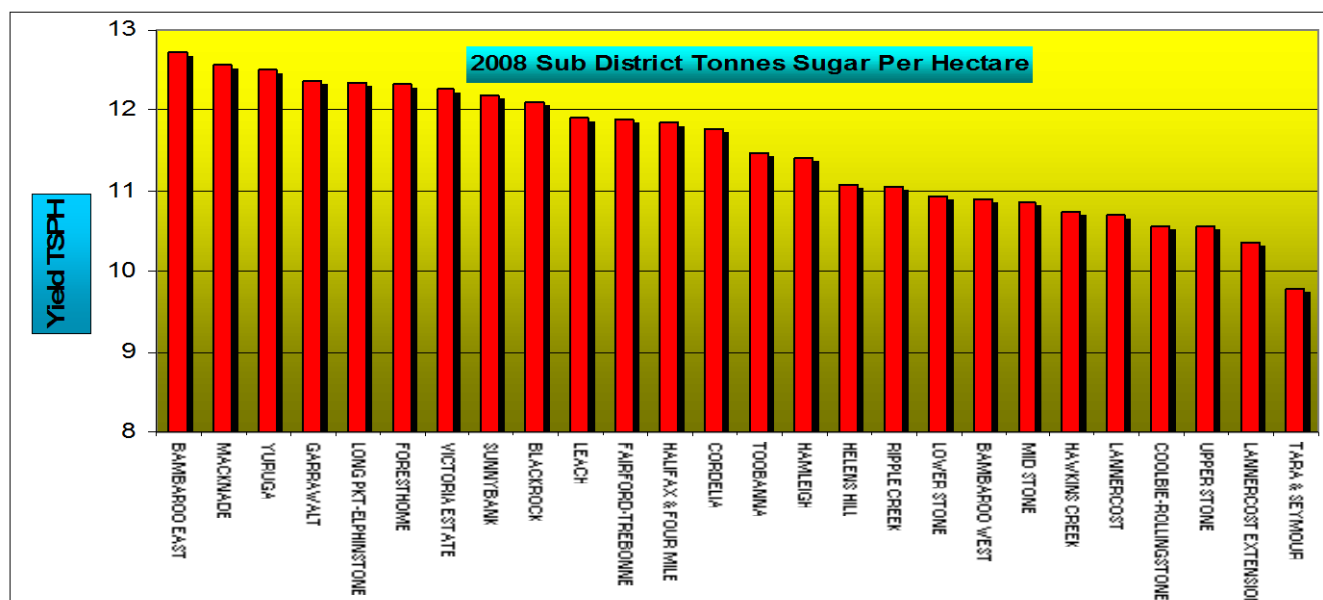
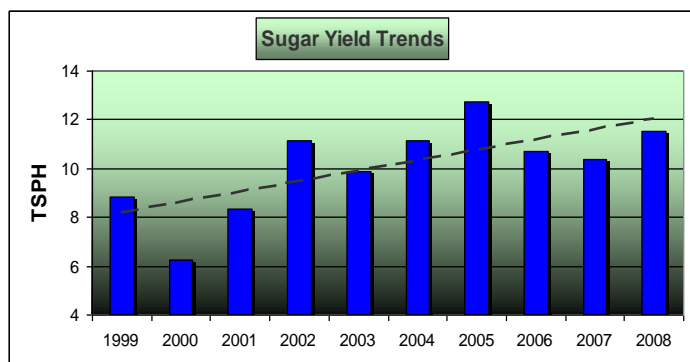
CROP PERFORMANCE 2008



The 2008 crop was surprising for several reasons. The crop exceeded most expectations and if the 16,000 tonnes of standover had all been harvested, the crop would have exceeded 4.7 million tonnes at a reasonably good 85.2 tonnes per hectare average yield.

The very high and unheard of early CCS however was followed by a dramatic fall after the peak in Week 11. Analysis of the above CCS graph supports research undertaken in the region.

| Year | Tonnes | Ha Harvested | CCS | Yield Cane | Yield Sugar |
|------|------------|--------------|-------|------------|-------------|
| 1999 | 4151741.51 | 59955.95 | 12.73 | 69.25 | 8.81 |
| 2000 | 2802049.39 | 58379.16 | 13.01 | 48.00 | 6.24 |
| 2001 | 3311004.97 | 56876.94 | 14.34 | 58.21 | 8.35 |
| 2002 | 4243591.27 | 54892.20 | 14.40 | 77.31 | 11.13 |
| 2003 | 4051558.05 | 56975.69 | 13.90 | 71.11 | 9.89 |
| 2004 | 4641372.86 | 56410.75 | 13.56 | 82.28 | 11.16 |
| 2005 | 5553359.05 | 57078.93 | 13.11 | 97.29 | 12.76 |
| 2006 | 4900084.45 | 57658.50 | 12.62 | 84.98 | 10.72 |
| 2007 | 4287010.73 | 57158.66 | 13.84 | 75.00 | 10.38 |
| 2008 | 4688595.64 | 55061.21 | 13.54 | 85.15 | 11.53 |



CANE PRODUCTIVITY INITIATIVE

PRODUCTIVITY FORUMS

Three rounds of productivity forums were held during the year. More than 200 growers attended forums throughout the year.

The first round of forums was held in mid February covering the following topics:

- Smut and the rate of spread of the disease.
- Feral pig management and associated programs.
- The industry was informed that all harvesters in 2008 would be tracked live through a next G modem and data sent back to HCPSL for processing.
- The growers also reported back the research findings from the CANEGROWERS SRDC funded water quality monitoring project. The growers involved in the project demonstrated how easy it is to access water quality coming from cane lands.



The second round of forums were held in mid March which covered the following topics:

- New variety update
- Which varieties to choose for planting and their smut ratings
- The BSES computer program - Q cane select, which assists growers select the right variety for a block.
- Accessing seed cane and new varieties from HCPSL and BSES plots
- Final results from the Time of Harvest trials conducted in the district over a 4 year period.

The third round held in early May, focussed on a range of topics:

- Cost effective fertiliser programs in light of the high fertiliser prices experienced.
- Herbert District and Sub-district Productivity Reports
- Effective weed control
- Harvesting best practice research findings were presented
- The growers got their first glimpse of the precision agriculture research and development that HCPSL was working upon. Growers were amazed when they were exposed to cane yield maps for the first time. The yield maps highlighted the significant yield variation noticed in cane blocks from in the region.
- Cane consignment procedures for 2008 season.

RESEARCH AND DEVELOPMENT TEAMS

Harvesting Research in the Herbert

Harvesting Best Practice (HBP) has been shown to significantly reduce infield sugar losses. BSES researchers have developed best practice recommendations to minimize cane loss with earlier model harvesters, however there is limited data for the current model CaseIH anti-vortex and 5 foot John Deere extractor systems. During the 2008 harvest season a number of harvester trials were conducted to collect field residue samples from new CaseIH and John Deere harvesters as part of a BSES project which is developing a new infield sugar loss measurement system. Unlike the inaccurate blue tarp method or the time consuming mass balance process, this new method involves sampling all the material left in the field (trash, billet fragments, etc), mulching it, blending with water to obtain a liquid extract and then analysing that extract to determine total sugar loss per hectare.

Researcher Cam Whiteing hopes to develop a compact, mobile system to measure harvesting losses. Such a device would make fine-tuning harvesters to minimize sugar loss a quick and simple process. With a number of these systems available for use by extension staff industry wide, there would be a significant positive impact on harvesting losses. During the 2009 harvest there will be harvester trials conducted in the Herbert and Burdekin regions to gather data on fan speed/cane loss interactions. Trial results and best practice recommendations from this project will then be presented at industry workshops.

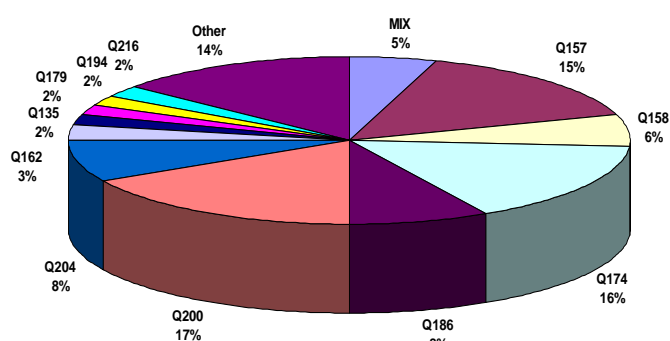


The **Variety Adoption** team met five times in 2008. Activities included:

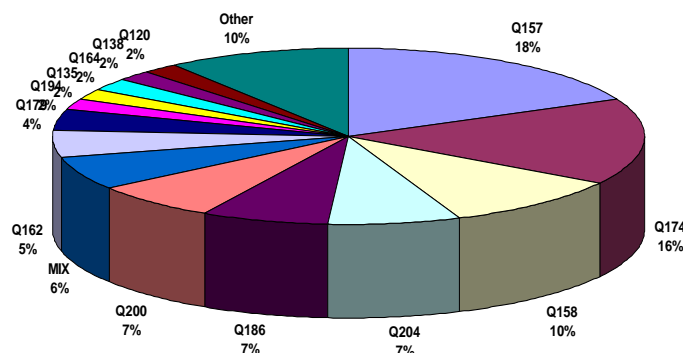
- Reviewed new varieties for release
- Recommended changes to the approved and recommended variety list for the Herbert
- Monitored and managed the Herbert smut management action plan
- Facilitated importation of smut resistant varieties from other regions
- Implemented "Grower dating service" to assist growers in accessing smut resistant seed cane
- Assisted with establishment of new variety strip trials
- Implemented tissue culture technology for rapid propagation of new varieties
- Assisted the development of QCANESelect™
- Developed variety guide, info sheets etc
- Assisted Moddus x Variety trial work
- Assisted with the BSES Limited Epidemiology trial work.

VARIETY PERFORMANCE & RECOMMENDATIONS

Varietal Composition of the Area Under Cane in 2008



Varietal Composition of the Area Under Cane in 2007



Herbert District Climatic Zones Map



Not surprisingly, Q200[♢] had the largest gain in area under cane increasing from 7% (2007) to 17% (2008). Along with its known performance history in the Herbert, growers are getting a better understanding of the calcium/magnesium management required to successfully grow this variety, making it more acceptable than KQ228[♢]. KQ228[♢] is showing mixed results but due to its susceptibility to Ametryn during high periods of growth, some growers are showing caution before planting. Despite these characteristics, KQ228[♢] will find a place in the Herbert and potentially become a productive variety.

Q208[♢] is also showing potential in the Herbert and is more soil diverse than KQ228[♢]. Growers should avoid planting Q208[♢] in cold, wet conditions and source planting material from vigorous seed cane, preferably while the trash is still clinging to the stalk. This should help to avoid the poor plant establishments some growers produced in 2008 from this variety.

One variety showing resurgence is Q183[♢]. Despite having an intermediate-susceptible smut rating, Q183[♢] has performed well over the last 12 months and many growers are starting to include this variety once again in their planting selection. Q183[♢] is best suited to clay soils, and should be harvested early.

As anticipated, Q158 was the main variety to be ploughed out in 2007 with its area under cane dropping from 10% (2007) to 6% (2008). With smut now spreading through many Q174[♢] blocks, it is expected that its area under cane will also start to decrease.

From June 1 2008, QDPI&F announced that planting of any smut susceptible variety had become illegal and the appropriate changes to the Approved variety list for the Herbert were made. The revised Recommended and Approved list is included below, combined with the recommended soil types for each variety.

2009 Herbert Recommended Variety List (Soil type x Environment)

| Dry Climatic Zone | | | | | Wet Climatic Zone | | | |
|---|-----------------|--|------------|---|-------------------|---|-------------|--|
| Granite Hills | Colluvial Apron | Broad Ridge | Depression | Terrace | River Levee | Floodplain | Terrace | Cardwell Colluvial Range Apron |
| | | | | Stone River | Herbert River | | Black Swamp | |
| Hill slope soils | | Sandy soils | | Clay soils | | Terrace loamy soils | | Seymour soils |
| ★ Q190 [♢] ★ Q208 [♢] ★ Q219 ^{♢*} ★ KQ236 ^{♢*} | | ★ Q190 [♢] ★ Q200 [♢] ★ Q208 [♢] ★ Q219 ^{♢*} ★ KQ236 ^{♢*} | | ★ Q183 [♢] ★ Q190 [♢] ★ Q200 [♢] ★ Q208 [♢] ★ Q219 ^{♢*} ★ KQ228 [♢] | | ★ Q135 ★ Q172 [♢] ★ Q183 [♢] ★ Q200 [♢] ★ Q208 [♢] ★ KQ228 [♢] ★ KQ236 ^{♢*} | | ★ Q190 [♢] ★ Q183 [♢] ★ Q200 [♢] ★ Q208 [♢] ★ Q219 ^{♢*} ★ KQ228 [♢] |
| | | | | ★ Q172 [♢] ★ Q183 [♢] ★ Q200 [♢] ★ Q208 [♢] ★ Q219 ^{♢*} ★ KQ228 [♢] ★ KQ236 ^{♢*} | | | | ★ Q190 [♢] ★ Q183 [♢] ★ Q200 [♢] ★ Q208 [♢] ★ Q219 ^{♢*} ★ KQ228 [♢] |

★ = Resistant to Sugarcane smut

★ = Intermediate resistance to Sugarcane smut

* = Based on limited data

Other Approved varieties of note for the Herbert District in 2009

★ CASSIUS, ★ Q96, ★ Q99, ★ Q119, ★ Q120, ★ Q177[♢], ★ Q199[♢], ★ Q215[♢], ★ Q220[♢], ★ Q230[♢], ★ Q231[♢], ★ Q232[♢], ★ Q233[♢], ★ Q237[♢].

VARIETY PERFORMANCE & RECOMMENDATIONS

NEW VARIETIES

KQ236^Φ (Origin – Ayr)

KQ236^Φ was released to Herbert growers in 2008. Forty tonnes of approved seed cane was distributed to growers through a new variety release plot on the BSES Limited research station. KQ236^Φ has average yield with exceptionally high early CCS and therefore is best grown as an early harvest variety. It is currently recommended on all soil types except low lying clays due to potential water logging problems. Yields have also shown to be reduced under prolonged dry periods so growers should show caution when planting KQ236^Φ on blocks in areas prone to these conditions.

Disease resistance

| | |
|------------|------------------------|
| Smut | Resistant |
| Pachymetra | Intermediate-resistant |
| Leaf scald | Resistant |

Q237^Φ (Origin – Northern region)

Q237^Φ has been tested in a number of northern BSES variety trials and to date has produced average yields with average to high CCS. While it has displayed varying adaptability its best results have been on fertile, well drained alluvials, sandy loams and red earths. Q237^Φ is still being trialed in the Herbert so growers would be well advised to test this variety on a smaller scale before proceeding to larger commercial plantings.

Disease resistance

| | |
|------------|------------------------|
| Smut | Intermediate-resistant |
| Pachymetra | Intermediate |
| Leaf scald | Intermediate |

Q232^Φ (Origin – Southern region)

A product of the Bundaberg breeding program, Q232^Φ has displayed the ability to produce high yields with average CCS on wide variety of soil types and environments. Whilst still in trial throughout the north, Q232^Φ has been approved ahead of trial results due to its good smut and other disease resistance and solid results in southern trials. Herbert growers will be able to access Q232^Φ through the BSES new variety release plot where distribution is planned in 2010.

Disease resistance

| | |
|------------|--------------|
| Smut | Resistant |
| Pachymetra | Intermediate |
| Leaf scald | Resistant |

PROMISING VARIETIES FOR THE FUTURE

MQ93-538 (PBR and final approval pending)

One of the last remaining clones from the old CSR variety program at Macknade, MQ93-538 is a high yielding, low CCS variety. Trials have indicated that MQ93-538 is best suited on poor-average soils in either of the wet or dry Herbert zones. A decision on the possible release of MQ93-538 will be made in 2009. Growers will receive further information once this decision has been made.

Disease resistance

| | |
|------------|--------------|
| Smut | Resistant |
| Pachymetra | Intermediate |
| Leaf scald | Resistant |

Q212^Φ (Final approval pending - 2010)

Another clone originating from the south of the state, Q212^Φ is currently being trialed in Herbert BSES variety trials. With only average yields and average to low CCS Q212^Φ real strength lays with strong disease resistant traits. Although Q212^Φ will be discussed for possible release to Herbert growers in 2010, it may depend heavily on how it reacts to northern conditions. Further information will be made available to growers as results from local BSES variety trials come to hand.

Disease resistance

| | |
|-------------|-----------|
| Smut | Resistant |
| Pachymetra | Resistant |
| Leaf scald | Resistant |
| Orange rust | Resistant |

TISSUE-CULTURE

In 2008 the Herbert industry witnessed the next step in the development of tissue-culture as a mechanism for producing approved seed cane and rapidly releasing varieties.

BSES Limited and Lows TC produced over 22,000 plants that were shipped to Mission Beach Foliage for potting out and hardening. The 20,000 KQ236^Φ plants have since been planted out into two approved seed plots at Bambaroo and Abergowrie. These plots will be used as approved seed to rapidly increase the commercial planting of this new smut resistant variety.

Also produced were 2000 Q212^Φ seedlings that have since been planted infield. This plot will be available to feed into a larger grower distribution plot if and when Q212^Φ is approved for release in the Herbert.

While a number of “growing pains” were encountered in 2008 it has proven to be an invaluable experience for those working on the project. Both the KQ236^Φ and Q212^Φ plots have proven to not only be valuable training aids for local growers and BSES and HCPSL staff but will be a great asset in combating the incursion of sugarcane smut for the Herbert industry.



Planting KQ236^Φ seedlings on Pace Farm

PESTS AND DISEASES

PESTS – ANIMALS AND INSECTS

Crop losses to animals and insects were generally average, and can be viewed in the below table.

| Pest | Tonnes Lost | Hectares Damaged |
|-----------------|-------------|------------------|
| Army Worms | 220 | 82 |
| Cockatoos | 1062 | 134 |
| Greyback Grubs | 12625 | 454 |
| Other Canegrubs | 400 | 17 |
| Pigs | 15553 | 1277 |
| Rats | 6371 | 652 |
| Wallabies | 500 | 63 |

There were significant Greyback beetle flights from November 08 until December. There were also some flights of frenchi beetles. Growers located in the light textured soil areas, with a history of grub damage, need to seriously consider apply suSCon or Confidor. The flights were quite widespread.

As in-crop weed control is generally very good, damage from cane rats will remain low. However with some isolated patches of standover and the current wet conditions, rat numbers could rapidly increase, along with increasing levels of losses. Growers are reminded a permit needs to be in place, prior to baiting.

Crop losses to pigs remain widespread. A permanent pig trapping co-ordinator will be appointed in January 2009. This position will report to Hinchinbrook Shire Council, and is funded by the majority of landholders, including the tree companies.

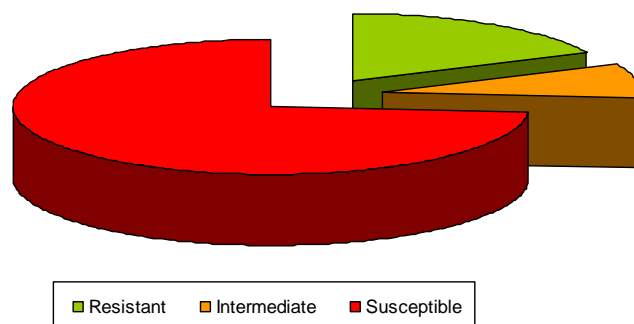


A 190 kg pig caught by Clay Romano

DISEASES

Sugar cane Smut has now been confirmed in all Queensland cane growing regions. It is expected that in the Herbert, all fields of susceptible varieties from 2nd ratoons and older, will be infected by the end of 2009. This situation though dire, will change over time. Each year, some nine thousand hectares are planted with resistant varieties, while an additional 9K ha of infected cane is ploughed out and fallowed.

Percentage of Smut Resistant Varieties in the Herbert in 2008



With the increased planting of Q200[®] and ploughing out of Q158 in 2007, the percentage of resistant, intermediate and susceptible varieties has changed significantly in 2008. 18% of the crop harvested in 2008 was resistant (up from 3% in 2007), 3 % was intermediate (same as 2007) and 74% susceptible (down from 88% in 2007). Predictions are that the current level of smut spread will remain constant over the next year at least.

Ratoon stunting disease or RSD is at the lowest level for many years, at < 3 percent infection by inspection. This is due to the replacement of varieties, initially Q124 for Orange Rust, and lately new varieties for Smut. Growers are reminded that good farm hygiene and planting only disease free cane, remains a priority.

Brown rust affected a few varieties mid year, without any real losses.

APPROVED SEED PLOTS AND HOT WATER TREATMENT

HCPSL supplied 264 tonnes of cane from the Approved Seed plots in 2008. Only varieties with smut ratings of 1-6 were available from the plots. Due to the increased smut pressure across the district, industry stakeholders have decided that varieties with smut ratings of 1-4 will only be propagated and available through HCPSL plots in 2009. New varieties KQ236 and MQ93-538 will be available from the plots in 2009 also.

In 2008, 81 tonnes of cane were long hot water treated through the hot water treatment tanks.

BSES released KQ236 from its new variety plot to growers. Only limited amounts were supplied to growers on a quota based system.

FARMING SYSTEMS

VARIETY X ROW SPACING TRIALS

BSES has been running a variety by row spacing trial at Mario Porta's Burnside property as a part of SRDC project BSS296 (Evaluation of genotypes for a controlled traffic farming system). Four varieties have been evaluated in plant and first ratoon.

They were planted in three different row configurations with stick planters. The table below presents the cumulative yield for plant and first ratoon. It shows that on average the 1.83m dual rows had significantly higher cumulative sugar yield than the single rows. The yields for the 1.83m single rows have been on average the same as the 1.63m singles. It is likely that gross margins returns per hectare are highest for the 1.83m single rows compared to the 1.83m dual rows and the 1.63m single rows. On this site a significantly lower yield was recorded for Q183[Ⓟ] compared to the other three varieties.

| Cumulative Yield - Porta Variety x Row Spacing (P + 1R) | | | | |
|---|-------------------|--------------|------------|---------|
| | Row Configuration | | | |
| | 1.63m single | 1.83m single | 1.83m dual | Average |
| Cane Yield (t/ha) | | | | |
| Q135 | 240 | 231 | 272 | 248 |
| Q174 [Ⓟ] | 243 | 233 | 230 | 236 |
| Q183 [Ⓟ] | 204 | 213 | 201 | 206 |
| Q200 [Ⓟ] | 221 | 236 | 251 | 236 |
| Average (ns) | 227 | 228 | 239 | |
| Sugar Yield (t/ha) | | | | |
| Q135 | 37.8 | 37.1 | 42.5 | 39.1 |
| Q174 [Ⓟ] | 39.4 | 37.4 | 37.4 | 38.1 |
| Q183 [Ⓟ] | 33.1 | 34 | 33.1 | 33.4 |
| Q200 [Ⓟ] | 36 | 38.3 | 41.3 | 38.5 |
| Average | 36.6 | 36.7 | 38.6 | |

NEW PLANTING SYSTEMS IN OPERATION IN THE HERBERT

In 2008 large areas of the district (especially in the Lower Herbert region) were planted by the new planters designed by Morellini and Mizzi. Both planters have different design concepts; however both attempt to achieve the same result in leaving the cane planted into a mound.

It was interesting that cane planted into a mound survived better than the conventional planted cane when significant rainfall fell during the planting season in 2008.

PAD FARMING PROJECT - MORELLINI PLANTER

This project is a Grower Group Innovation project funded (GGIP) through SRDC. PAD stands for Profile Attachment Device.

Daryl has constructed, tested and refined a billet planter that operates on 1.83m centers and is able to construct a bed and plant cane in the one pass, reducing the time taken, and cost of establishing a cane plant crop.

Replicated trials have been set up on Daryl's own farm, and on several other locations with growers who are part of the GGIP. Analysis of yield data for nett value per hectare is done through the FEAT programme by Mark Poggio of QDPI&F. To date, after one harvest there is little difference in nett income but the time to set up and manage the plant crop has been significantly reduced. This project will continue over a full crop cycle to take into account climatic conditions and variables.



Morellini Planting System

MIZZI LANDCARE PROJECT - MIZZI PLANTER

This project was funded through a National Landcare. Paul has constructed, tested and re-designed a billet planter that removes the dry soil from the field surface and plants the cane into a mound of moist soil which is suitable for cane establishment.

During 2008 considerable areas were planted throughout the district to assess the suitability of the planting system. On some farms conventional and Mizzi planted systems were planted side by side to monitor any differences.

The planters are now being produced commercially by Carta Engineering, with a number of the new concept planters being sold and ready for planting in 2009. The performance of this planter will be continually be monitored by industry over the next few years.



Mizzi Planting System

HARVEST MANAGEMENT AND COMMUNICATION PROJECTS

REAL TIME WIRELESS HARVEST MANAGEMENT

By now most growers would be aware that the Herbert has installed GPS Receivers, On Board Computers and Next G wireless modems on all our harvesters. Of interest is the fact that Tully Sugar (with whom we have been collaborating) and Brazil (our major competitor) - also have the same TechAgro technology.

What does this mean?

It means we can see the cane harvesters running up and down the paddocks as a point on a farm map on a computer screen. From this data, harvested areas can be calculated.

How did this come about?

The Herbert has for many years seen this as a priority. HCPSL did the work in applying for the RCP funding and managing the project. This system was paid for with real dollars by the federal government with matching in kind contributions from HCPSL and replaces the original harvester tracking paid for by the district.

What is it worth?

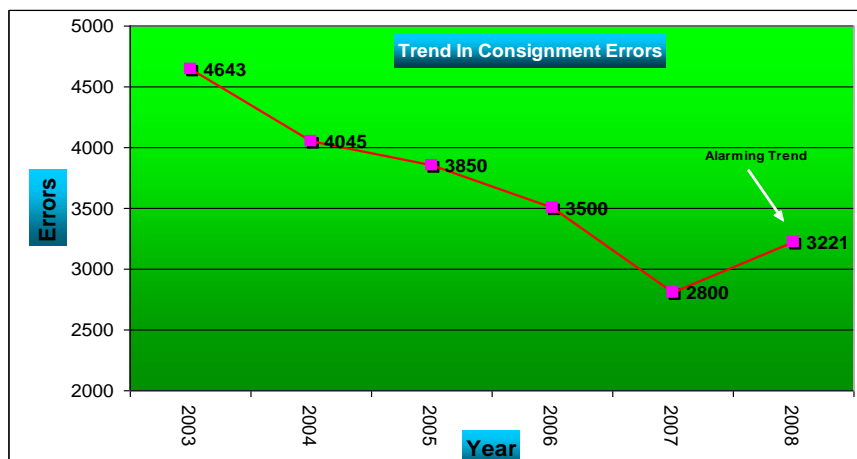
Even though the Herbert did not pay for it, to buy the system would cost around \$500,000.

What are the benefits?

The original harvester tracking used SD cards to collect the data. These cards were then supposed to be posted in. Many groups were unreliable in supplying their data to HCPSL and therefore their harvested areas were not calculated properly. The new system sends the data wirelessly through the Telstra network to a server where it can be accessed.

How does it work?

Once harvested areas are calculated for cane blocks, the system then links up with consignment note data and allocates an area to a block.



What are the issues?

Problems arise when the GPS has tracked a harvester in a block and no tonnes have been supplied to this block. One reason for this is the wrong block number could have been used. This causes additional work for HCPSL staff as tonnes then have to be transferred from one block to another. Due to the increasing and alarming number of consignment errors, it is difficult to rectify all the problems. As can be seen in the graph – consignment last year got worse. It is possible that some groups thought that tracking would eliminate the need to accurately consign, however the opposite is true – it is now more important than ever to consign properly.

What does the future hold?

The infrastructure now in place has enormous capabilities to add value – the project is just the start of much better harvesting, transport and agricultural information systems. We hope that in future using the HRIC Web Portal, growers can use their PC at home to see their harvesting groups progress displayed as coloured areas on farm maps in real time.

Ultimately the information from the harvesters can be linked to the mill traffic system to assist in traffic planning. It is hoped in time that the traffic office will be get an idea in real time of how many bins each group has filled at various parts of the day. The system is also a small step towards electronic consignment.

Acknowledgements

Many thanks to the Herbert harvest crews for being a part of this exciting project and to the TechAgro crew (Enrique, Angel and Santiago) for your professionalism dedication and friendship.
Viva Cuba !!!



On-Board computer in Robert Lyon's harvester

PRECISION AGRICULTURE

The commitment and investment by local industry and HCPSL into Precision Agriculture technologies (like yield monitoring systems, GPS base stations, auto steer systems, etc) has spear-headed the industry to become a sugar cane industry leader in precision agriculture globally. There are significant advances being made in this area in other Australian cane growing regions, in the USA and Brazil also. HCPSL and BSES staff are involved in two SRDC funded projects to investigate precision agricultural practices and site specific land management practices. These projects aim to investigate opportunities to implement precision agricultural techniques and improve farm sustainability across the region.

BASE STATIONS AND AUTO-STEER

During the year we saw additional tractors fitted with auto-steer commence work activities in the district. The Tabone family were the first to purchase and fit auto-steer to a cane harvester in the region. Another two auto-steer units have been purchased and are awaiting fitting for the commencement of the 2009 harvest season. HCPSL continued to maintain and support the community GPS base station program in the Herbert. This program has been successful with most GPS auto-steer units utilising the HCPSL base station network. Discussions have occurred with other GPS providers to provide access to the HCPSL network. HCPSL are still waiting to receive a reply from these companies.

VARIABLE RATE TECHNOLOGY

2008 saw the arrival of variable rate technology to the region with the construction of Liddles' variable rate fertiliser applicator and the first variable rate lime and gypsum applications occurring on an Ingham Line farm. Some of these units are still being commissioned or modified to meet user requirements. The use of variable rate fertiliser application in the sugarcane industry is still in its infancy globally. The basis for deriving variable rate fertiliser application rates is still being developed and further research to understand the drivers for yield variation are being investigated. Growers and resellers must be mindful that this technology is evolving and people are urged not to rush into purchasing equipment without considering practical uses.

YIELD MAPPING

During the 2008 harvest season 50 harvesters were fitted with Techagro or AgGuide yield monitors. The yield monitoring systems over the past two years have been used to identify yield variability in different parts of a cane block. To date over 30,000 hectares have been mapped in the region. Such information acquires value when it enables farmers to make better informed decisions. Yield monitoring data should not be used in isolation, but with complimentary information such as soil and plant tissue analysis data, soil and topographic maps, and other geo-spatially referenced data. This information will assist with decision making processes. To date, growers and local agronomists have used the spatial data to target problem areas and to identify yield limiting factors such as waterlogging, fertiliser application rates, soil sodicity, soil acidity, soil salinity, and varietal selection issues. Below are examples of blocks yield mapped over the past two years.

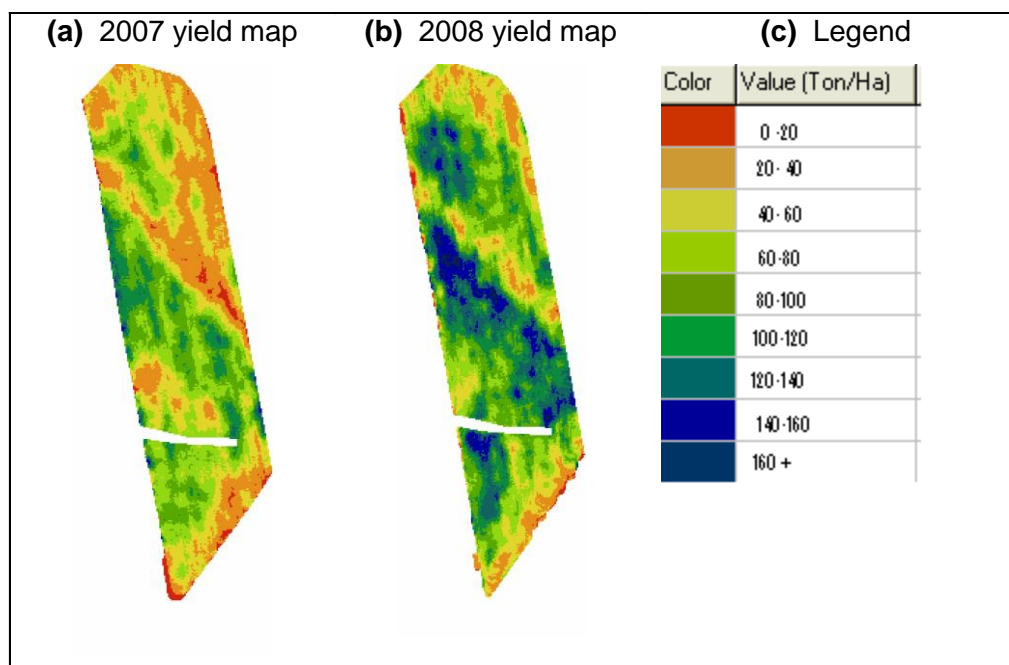


Figure 1: Yield maps produced by the Techagro yield monitoring system for the McKell site, Lannercost: **a)** 2007 harvest – cane block yield **b)** 2008 harvest – cane block yield **c)** Yield classes (tonnes of sugarcane / ha).

REPRODUCIBILITY OF YIELD MONITOR DATA (MCKELL SITE)

The McKell site is located in the Lannercost area on clay soils. Yield maps for the 2007 and 2008 harvests show areas of similar yields in successive years. Areas with high yield in 2008 also gave the highest yields in 2007 and low yields were recorded on the same areas in both years but yields were higher in 2008 than 2007 in both high and low yielding areas. This is a positive result because it allows us to possibly consider site specific land management practices to be adopted in the future.

PRECISION AGRICULTURE

THE INFLUENCE OF SOIL PROFILE DRAINAGE (TROTTER SITE)

(a) Area of poor drainage and low sugarcane yield



The Trotter site is located at Mutarnee. The yield map highlights the effect of waterlogging and differences in soils type. Field observations indicate that the poor soil drainage conditions have persisted for a long time and that they have most likely caused the areas of poor yields that were detected by the yield monitor. Further research is underway to investigate if there are opportunities to manage these high and low zones differently.

(b) Area of good drainage and high sugarcane yield



Figure 2: Sugarcane yield controlled by soil profile drainage, Trotter site, Crystal Creek. **a)** Low-lying areas of poor drainage are evident in waterlogged patches after 150 mm of rain, and in low yields on the Techagro yield map. **b)** Slightly higher, better drained areas produced the higher yields that are evident on the Techagro yield map.

THE INFLUENCE OF NITROGEN APPLICATION RATE (WARING SITE)

A nitrogen trial (with rates of 24 and 140 kg of nitrogen / ha) was established in 2006 at the Waring site that is located in the Trebonne area. The site was harvested using a Techagro yield monitor in 2007 and the yield differences on the map corresponded accurately with the applied nitrogen treatments applied.

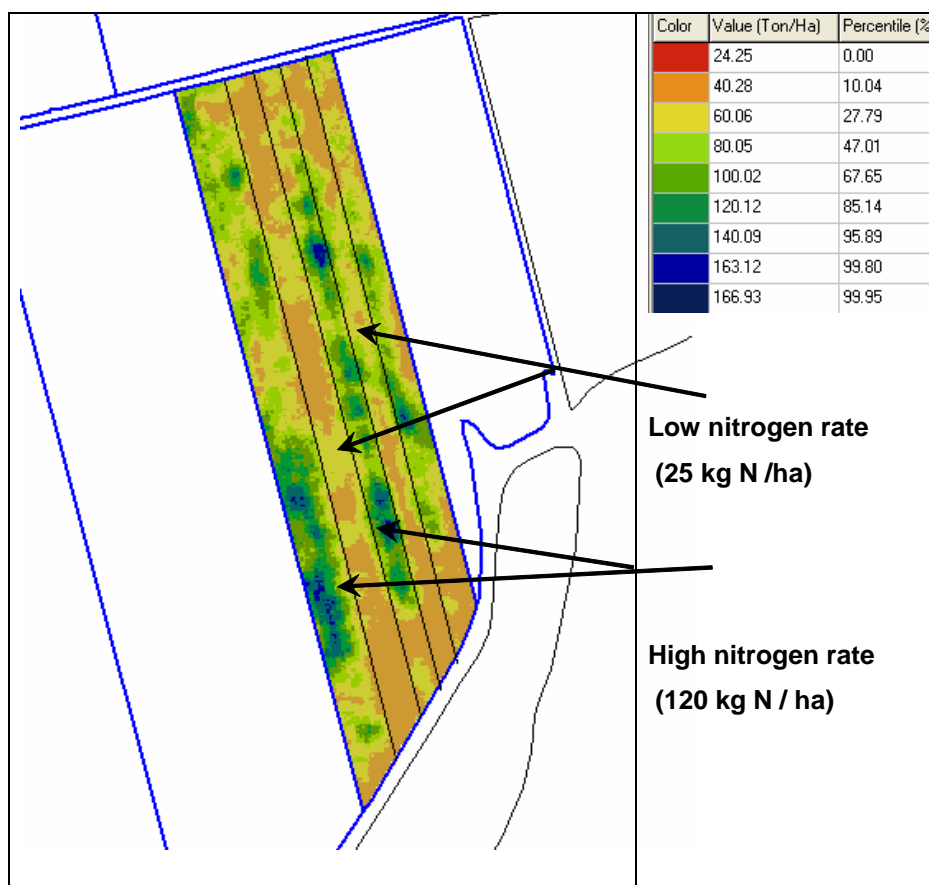


Figure 3: Techagro yield map made from 2007 harvest data for a nitrogen rate trial, Waring site, in the Trebonne area.

FARM BUSINESS PLANNING

FOCUSING ON FARM PROFIT

Last year saw the completion of the SRDC project aimed at enhancing the use of economics in the sugar industry. This project aimed at assisting growers to analyse their production costs and identify opportunities to improve profitability through the implementation of sustainable farming systems. The project focused on the Herbert and Burdekin regions; however work was also undertaken in sugar growing areas across Queensland. The need to focus on farm profitability through the use of economic tools and grower education is critical in maintaining a sustainable sugar cane industry. The recent introduction of derivative cane pricing mechanisms to growers is a good example of the importance in understanding production costs and business profitability over time.



Legume Workshop

During the project a total of eleven case study publications were produced on farming system topics identified by the 42 growers involved in grower groups. The publications included topics such as benchmarking, fallow management, legume fallow crops, sugarcane smut, crop gross margins, farming system change and the use of alternative irrigation systems in the Burdekin region. Each publication had direct grower involvement and was based on actual data which assisted in validating the results to other growers. Herbert region case studies were developed in 2008 focusing on the changes growers have made to their farming system and the effect on farm profitability. One of these case studies was presented at the ASSCT conference in Townsville last year.

The promotion of the Farm Economic Analysis Tool (FEAT) developed by DPI&F was also a critical part of this project. FEAT training and technical support was provided to growers and industry staff through workshops, field days and one-on-one extension. Since the programs inception the FEAT program has continually evolved with the addition of farm benchmarking, smut analysis section and the ability to automatically transfer mill data into the program. Workshops were held in Ingham during February 2008 to provide participatory training on the use of the FEAT program.



FEAT Workshop

A field tour was also held in 2008 relating to economic topics identified by growers in the Herbert region. Building industry knowledge capacity is a vital component of this project and a series of educational flyers and workshops were developed to promote the use of sound economic principles in the sugar industry. Each flyer and workshop aimed to stimulate growers to think analytically about their cane growing business and make decisions about farm practices using economic information and tools.

During the project linkages were also established with other industry projects to assist with the economic assessment of the trial results. These included the SYDJV project, BSES Canegrub Model and the Herbert BSES Farming System Trial. Acknowledgment is given to the strong collaborative support provided by BSES Limited, CSR Sugar, HCPSL, Canegrowers and CSIRO during the project period. Growers interested in obtaining a copy of the case studies or a copy of the FEAT program can contact Mark Poggio (DPI&F FutureCane) on 47763907 or 0428105109.



CANEGROWERS
Herbert River

FORWARD PRICING AND CROP INCOME

Crop income is the result of tonnes cane harvested and supplied to the mill, paid for at greater than 7 CCS, and multiplied by the price of cane. In the Herbert cane price for pool average CCS is determined by the following formula:
Price of cane = Sugar price net per tonne IPS x 0.009 (CCS – 4) + \$0.6353

It is possible to stabilise the sugar price component of the cane price formula by using the forward pricing tools now available for up to a maximum of 50% of an expected future season's crop. (The remaining percentage of crop is reserved after seasonal influences for pricing through in-season mechanisms) The forward pricing tools are governed by the New York No 11 contract, on which more than 80% of our sugar price is based, and the US to AUD currency exchange rate. Essentially, a grower is able to obtain a price fixation for a future season by nominating a sugar price in AUD terms per tonne actual that would be an acceptable price for a maximum of 50% of the expected cane production in one year forward or a maximum of 30% in 2 seasons forward which will be fixed if and when the futures market reaches the price nominated. Growers have an alternative to their individual decision as to a price to seek fixed in a Collective Managed Call Pool. Similar proportions of the crop may be designated for forward pricing at the discretion of the pool manager. A further option is available for an individually managed call pool.

Growers wishing to gain a better understanding of how the forward pricing system operates should contact CANEGROWERS Herbert River. They conduct regular small discussion groups where the essentials of forward pricing are discussed together with the mechanics of grower participation in the products on offer to growers in the Herbert River district.

The importance of CCS in influencing the price received for cane is apparent from the Herbert River cane price scale, which is available at CANEGROWERS Herbert River. This illustrates the cane prices available at a range of pool average IPS sugar prices and pool average CCS values.

REGIONAL INITIATIVES



WHAT IS GIVE?

GIVE is a **G**rower **I**nnovation **V**irtual **E**xpo which is a conference and expo unique to the Australian Sugarcane industry. There are over 40 grower groups throughout the Sugarcane Industry (Northern NSW to Far North Queensland) that have commenced or completed research and development projects aimed at addressing productivity, profitability and sustainability issues.

The aspects that make **GIVE** unique include:

- The event is hosted and coordinated by grower groups
- The presentations and field displays are conducted by grower groups
- This is the only event in the entire sugar industry that allows innovative growers to share their knowledge and practices with other growers

GIVE 2008 was held in Mackay with a large group travelling from Ingham to the event. Here are some comments from the Herbert growers who attended the GIVE 2008 function in Mackay.

"The GIVE event is worth attending to gain a better understanding of what grass roots growers are doing on their farm. It gave me the confidence to make some changes to my farming practices" - Errol Cantamessa, Hawkins Creek grower.

"It was worth attending the last GIVE event. I gained new ideas to try on my farm. I won't miss the next GIVE event" - Paul Mizzi, Braemeadows grower.

"The last GIVE event was one of the best sugarcane expos I have ever attended. It was great to see growers get up and talk about their successes and failures" - Victor Reinaudo, Ingham grower.

GIVE 2009 is being jointly hosted by the Tully and Ingham grower groups and sugarcane industry service providers on the **24th – 25th March 2009**. Over the 2 days, the Expo focuses on information sharing between growers through half hour presentations and field trips in the Tully and Ingham areas.



2008 GIVE Day in Mackay

REEF RESCUE

The investment of \$200 million over five years, towards Reef Rescue from the Australian Federal Government through the Caring for Country initiative, will benefit both Queensland farmers and the Great Barrier Reef. The water quality grants component (\$146 million) will provide funding to land managers to help implement improved management practices which reduce the amounts of nutrients, chemicals and sediments leaving their farms and thus impacting on reef water quality. The funding for the Wet Tropics area will be rolled out through Terrain Natural Resource Management across several industries including cane, cattle, dairy and horticulture from Crystal Creek in the south to the Bloomfield River in the north, and west to include most of the Atherton Tablelands. In the first year, 59 applications have been submitted for funding consideration from the Herbert, with over 200 applications being submitted from the cane industry in the Wet Tropics area. Anyone interested in making an application in the next round of funding should contact Leanne Carr at BSES to register your interest and get the application process started.



HRIC

The HRIC is very excited about implementing our new Enterprise GIS (Geographic Information System). The Enterprise GIS will allow us to better manage our extensive GIS data and allows us to distribute our data out via the internet. This will allow people on the ground such as farmers and extension staff access to our information. This investment has only been possible due to the unique partnership that exists between the HRIC partners: Hinchinbrook Shire Council; CSR Sugar; Herbert Cane Productivity Services Ltd; BSES; Canegrowers Herbert River; and Terrain NRM.

For example, it will allow a grower to access the yield data collected for their farm, and to overlay it onto the cane block data and soils. A harvester operator will be able to access the harvested areas data. Or you will be able to view the flood data for your farm. Non-confidential information will be open to the public, but confidential and private information will be password protected.

The beauty of our new system is that you will not require an expensive GIS program running on a farmers home PC to view and print the data. You will simply be able to use your favourite internet browser. You will be even able to view your data with Google Earth.

Please note the Herbert has many layers of information such as detailed and extensive yield and soil mapping and aerial and satellite photos that are unique to our district. The new HRIC website (www.hric.org.au) has some demo's of the new system capabilities. The first phase of the new system will be in place by July this year, and will include the ability to manage the data from HCPSL's Harvest Management and Yield Monitoring systems.