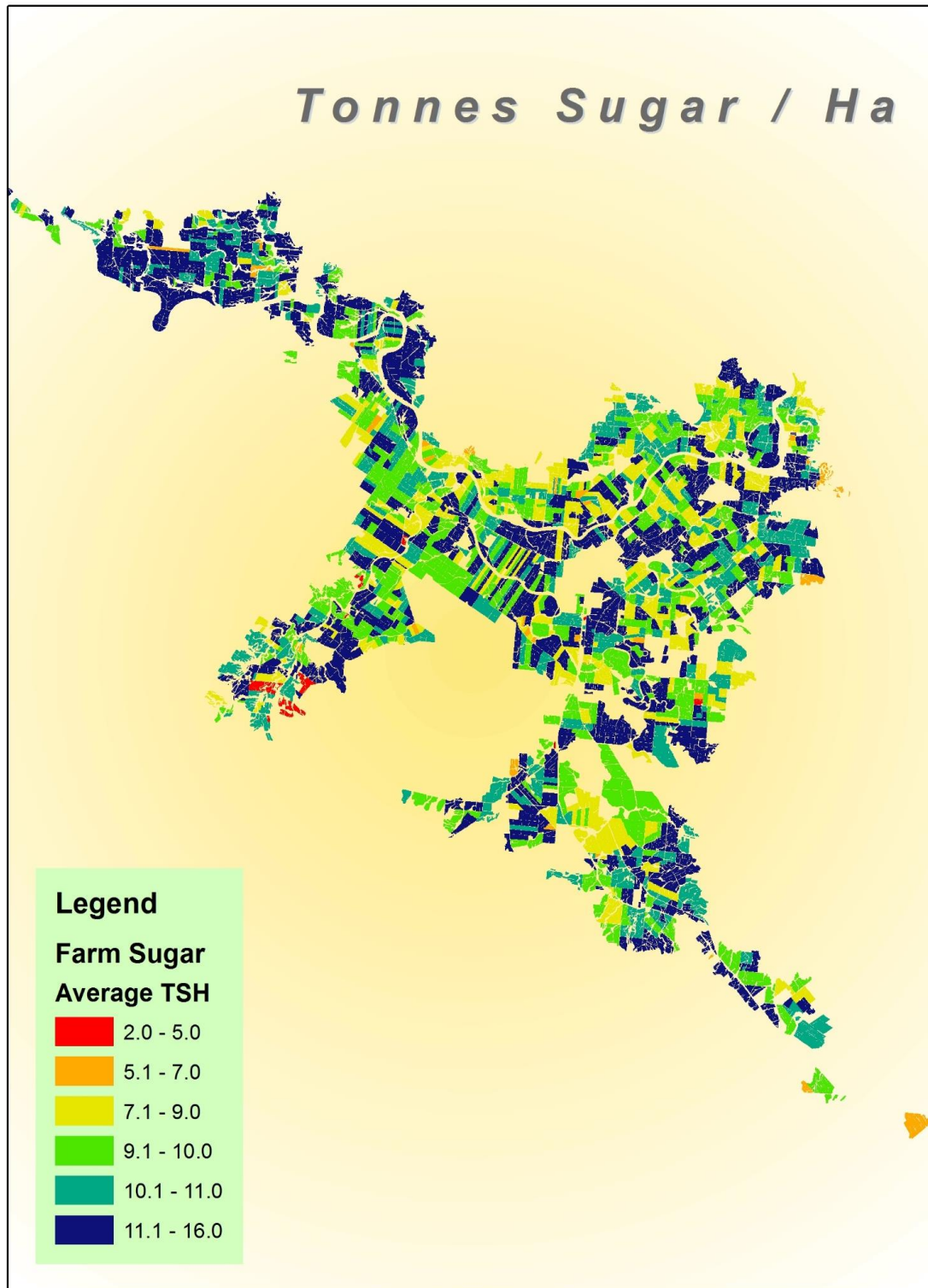
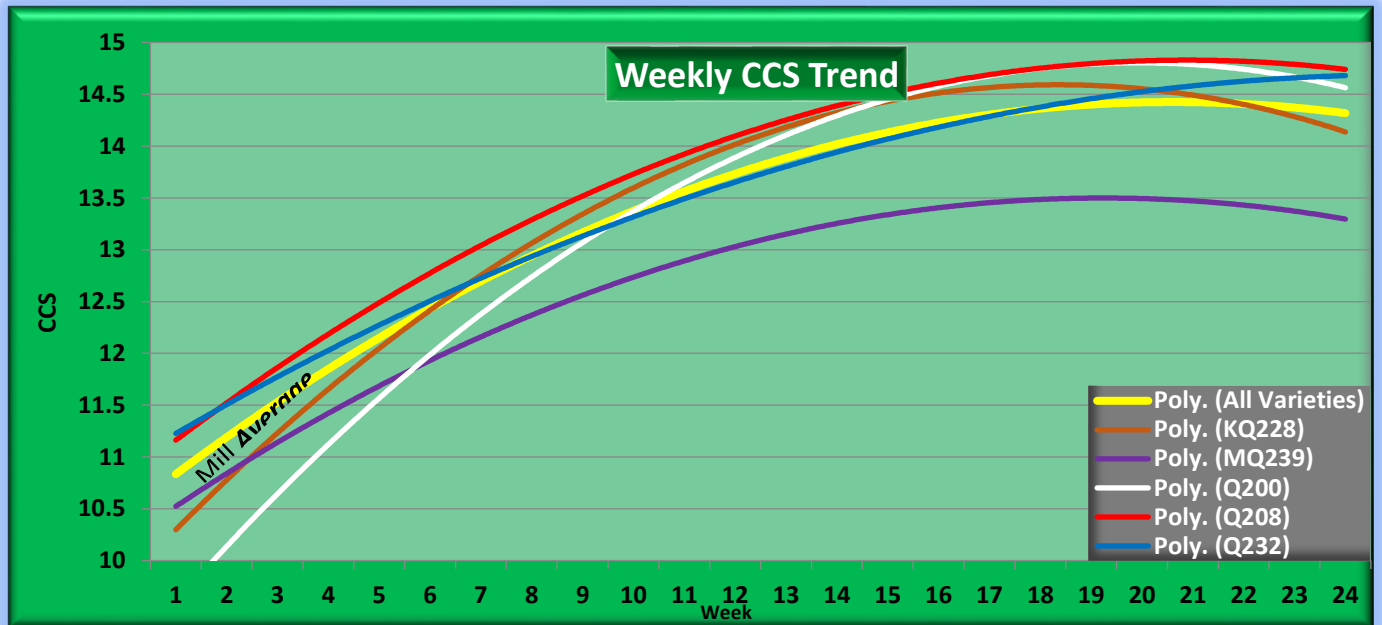




# HERBERT SUGAR INDUSTRY REPORT 2015



## CROP PERFORMANCE 2015



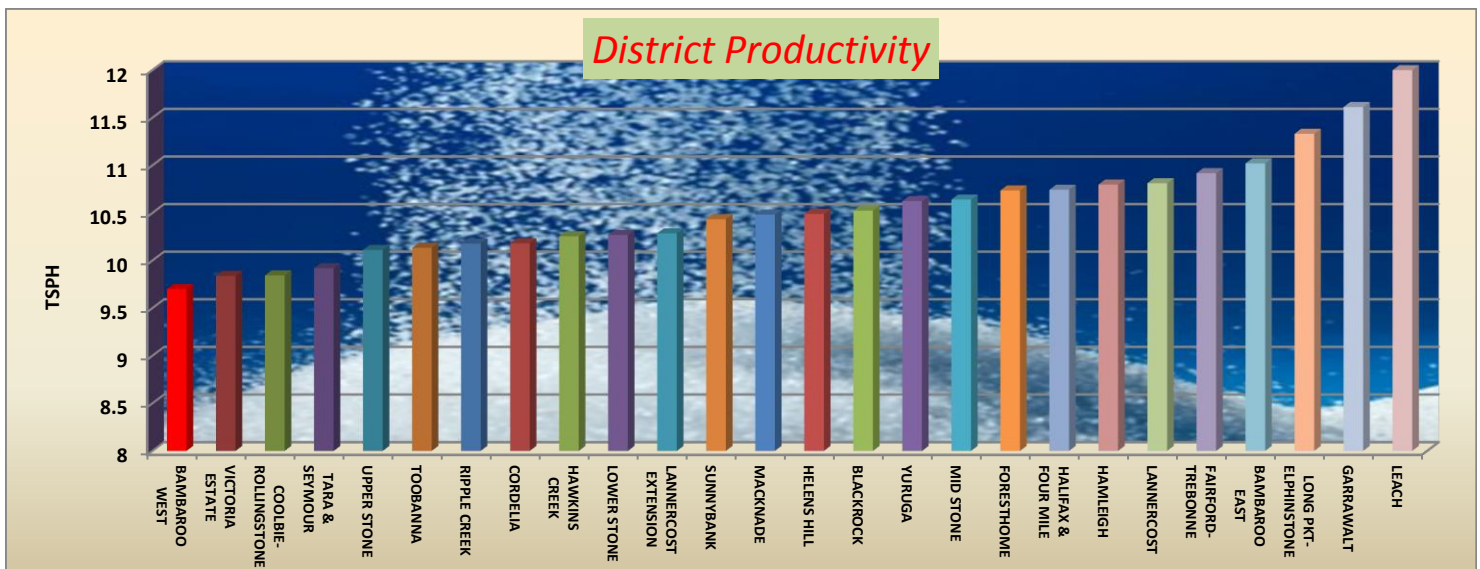
The prolonged dry experienced early in the crop's growth, YCS impacts and pest pressures, all contributed to the cane and sugar yields experienced for the 2015 harvested crop. The end result was much better than expected. The 2015 district average yield was 78.77 tchph with a CCS average of 13.41, with the district harvesting 4,459,593 tonnes. The 2014/2015 wet season was very mild with little heavy rain falling. Good rains in June 2015 allowed the crop to grow on throughout the very mild winter months. The yield was the highest yield experienced for the region in the past 5 years. The area impacted by Yellow Canopy Syndrome (YCS) increased significantly throughout the district. The worst impacted sub-districts were Victoria Estate, Macknade, Ripple Creek, Palm Creek, Trebonne, Hamleigh, and parts of Abergowrie and Hawkins Creek. Yield reductions caused by YCS were significant on some farms, with some growers recording the lowest crop yields and CCS in history on their own individual farms. The lowest CCS experienced at harvest was 3.2 due to YCS, just north of Ingham.

### HISTORICAL DATA

| Year   | Tonnes     | Ha Harvested | CCS   | Cane Yield | Sugar Yield | Year   | Tonnes     | Ha Harvested | CCS   | Cane Yield | Sugar Yield |
|--------|------------|--------------|-------|------------|-------------|--------|------------|--------------|-------|------------|-------------|
| 1996   | 5251285.67 | 53513.30     | 13.21 | 98.13      | 12.96       | 2006   | 4900084.45 | 57658.50     | 12.62 | 84.98      | 10.72       |
| 1997   | 5272421.61 | 57328.33     | 13.37 | 91.97      | 12.29       | 2007   | 4287010.73 | 57158.66     | 13.84 | 75.00      | 10.38       |
| *1998  | 4191272.31 | 48669.90     | 11.46 | 86.12      | 9.87        | 2008   | 4688595.64 | 55061.21     | 13.54 | 85.15      | 11.53       |
| **1999 | 4151741.51 | 59955.95     | 12.73 | 69.25      | 8.81        | 2009   | 3920941.21 | 51171.33     | 14.79 | 76.62      | 11.33       |
| 2000   | 2802049.39 | 58379.16     | 13.01 | 48.00      | 6.24        | *2010  | 3274402.07 | 39567.98     | 12.85 | 82.75      | 10.64       |
| 2001   | 3311004.97 | 56876.94     | 14.34 | 58.21      | 8.35        | **2011 | 2920400.98 | 52364.64     | 12.89 | 55.77      | 7.19        |
| 2002   | 4243591.27 | 54892.20     | 14.40 | 77.31      | 11.13       | 2012   | 3625680.08 | 50394.18     | 13.57 | 71.95      | 9.77        |
| 2003   | 4051558.05 | 56975.69     | 13.90 | 71.11      | 9.89        | 2013   | 4000685.4  | 54017.57     | 13.95 | 74.06      | 10.33       |
| 2004   | 4641372.86 | 56410.75     | 13.56 | 82.28      | 11.16       | 2014   | 4152315.8  | 55800.99     | 13.62 | 74.41      | 10.13       |
| 2005   | 5553359.05 | 57078.93     | 13.11 | 97.29      | 12.76       | 2015   | 4459593.6  | 56615.75     | 13.41 | 78.77      | 10.56       |

\* Standover Left

\*\* Standover Harvested



## HCPSL YEAR IN REVIEW

The local industry faced the challenge of a low sugar price in 2015. The wet season was late in arriving, however June rains allowed for crop grow on. The cane yield was significantly higher than initially expected with 78.77 tchp being achieved. 2015 was another busy year for HCPSL servicing the needs of the Herbert cane industry. The HCPSL Target 85 program, aimed at getting the Herbert industry back on track to achieving high productivity, achieved a number of milestones during 2015. The most notable HCPSL achievements were:

- The completion of the Pachymetra root rot survey. This survey highlighted that there was considerable high levels of the disease in the soils throughout the district. Growers on impacted farms are urged to plant resistant varieties to manage the issue.
- The undertaking of a district wide harvester survey and associated trials to assess the impact of harvesting on productivity. HCPSL, Wilmar and SRA were joint project partners. There is a realisation that there are a number of issues that needed to be addressed to ensure that the crop yield in the field is actually realised.
- The continuation of the joint funded HCPSL/SRA Ratoon Variety Trials. These trials were established in 2013 to assess varieties on difficult environments in the Herbert region. These trials complement the SRA core plant breeding program.
- The commencement of the Terrain NRM and HCPSL funded soil mapping project with the University of New South Wales. This project is investigating ways to increase productivity through the use of electronic soil mapping equipment.
- Assisting SRA funded projects on YCS. HCPSL also made its own investment into a trial to assess management practices to better manage YCS in 2015.
- Provision of over 800 tonnes of approved seed cane to growers, with the bulk of this cane being supplied as whole stalk.
- Sale of approximately 2500 tissue cultured plants to growers.
- Supported SRA to establish cane seedlings at the HCPSL Macknade Research Farm and assisted SRA establish four Introgression plant breeding research trials throughout the district.
- Supported SRA through a SRA funded project to investigate productivity drivers for the Herbert, while developing tools to allow growers to utilise varieties better.
- Continued funding the Hinchinbrook Community Feral Pig Management Program leading to a significant reduction in feral pig damage to cane crops.
- Continuation of the HCPSL Yield Mapping project, mapping over 20,000 hectares annually. The maps generated are now being used by industry to site specific managed cane blocks within a farm.
- Continued support of data management to ensure accurate cane consignment and the analysis of data to base decisions upon.
- Continuation of laser levelling surveys and dumpy level surveys to improve in-field drainage.

HCPSL was also involved with the following productivity/environmentally focussed projects:

- The Queensland Government funded Project NEMO. This project works with growers through farm demonstration plots to investigate farming systems and fertiliser products that could lead to improvements in water quality outcomes, while remaining profitable.
- The Terrain NRM funded Wet Tropics Sugar Industry Partnership (WTSIP) program to deliver targeted training and extension for growers across the Wet Tropics region.
- The Queensland Government and HCPSL water quality monitoring project. The data from this project is used to inform growers of their environmental impacts.
- The Herbert Demonstration Farm Project. This project assessed the impact of enhanced efficiency nitrogen products in the field and in a glasshouse experiment.
- A new ICL Controlled Release fertiliser trial assessing a number of new products was established at the HCPSL Macknade Research Farm in 2015.
- HCPSL was contracted by Arysta for 2 trials to assess a new residual herbicide called Amitron, which could be used to replace Diuron within a farming system.

A significant highlight for HCPSL was the invitation to the Manager to undertake a presentation on his research paper titled: "Targeted Extension Strategies to Improve Water Quality Outcomes in the Australian Sugarcane Industry". The paper was presented at the Global Forum for Rural Advisor Services (GFRAS) conference in Kyrgyzstan in September, 2015 (by HCPSL Manager - Lawrence Di Bella) and at the Australasian Pacific Extension Network (APEN) conference in Adelaide in November, 2015 (by HCPSL Extension Officer - Adam Royle). The paper highlighted the extension processes and activities associated with the Herbert Water Quality Monitoring Project and its success in achieving positive environmental and industry outcomes. The paper was well received by all.

The HCPSL Board and staff would like to sincerely thank its members for their continued support in 2015 and look forward to providing a high quality service again in 2016.



Left – Lawrence Di Bella with a Kyrgyzstan farmer and his child



Right - Lawrence Di Bella with Kyrgyzstan potato workers



## VARIETY PERFORMANCE & RECOMMENDATIONS

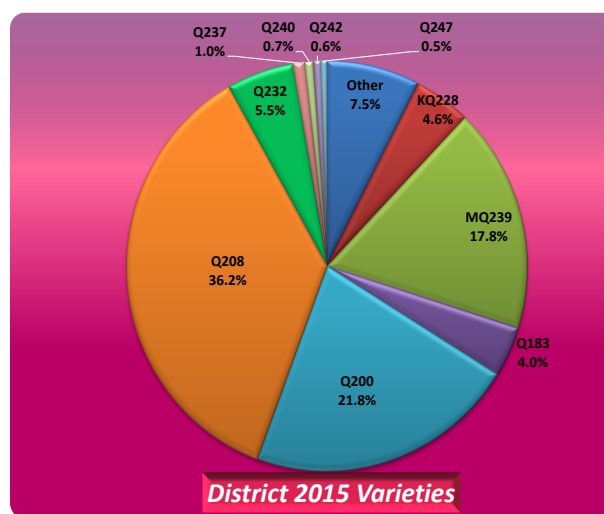
The varietal performance for 2015, saw the overall CCS trend start off lower than normal, due to our early dry & late wet. These conditions caused the majority of varieties to remain in a vegetative state, at the beginning of the season, (the plants energy goes into growing instead of producing sugar). This also resulted in the flowering being very low in comparison to normal years.

Towards the end of the season, 200,000 tonnes of cane was added to the District's estimate. The CCS also picked up and finished off being closer to a normal year, with Q200<sup>ph</sup> and Q208<sup>ph</sup> being above the mill's average and Q208<sup>ph</sup> being the top performer as expected.

YCS has not left us yet and we are all still at the helm of the unknown, continuing to monitor changes. Pachymetra has proven to be just as big of a concern, with the only benefit being we have the resources to manage it.

A Pachymetra sample is only \$55.00 and the resulting information is vital when planning your plant varieties. A District survey has been undertaken, giving us a general overview, although it is strongly advised to carry out the tests on your own blocks. We have witnessed sample results from the same area (different blocks) come back with great differences. One block was alarmingly high at around 700,000 spores /kg (which could result in thousands of dollars lost in productivity if the wrong variety is planted) and another as low as 6,000 spores/kg which broadens the horizon on variety selection & keeps the focus on productivity.

Tissue Culture is a great low risk way to propagate varieties. This is a very effective way to source clean seed, as not all varieties respond well to Hot Water Treatment. The cost ranges from \$1.50 - \$2.00 per seedling and most QCanes are available. If you are interested in tissue cultured cane, please contact HCPSL.



| Herbert Recommended Varieties x Soil Type     |   |   |  |
|---|---|---|--|
| Dry Zone                                      |   | Wet Zone  |  |
| Terrace Loamy Soils                           | Q200 <sup>ph</sup> , Q247 <sup>ph</sup> , Q208 <sup>ph</sup> , SRA3 <sup>ph</sup> , Q237 <sup>ph</sup> , Q238 <sup>ph</sup> , Q240 <sup>ph</sup> , Q242 <sup>ph</sup> | Alluvial Soils                                  | Q238 <sup>ph</sup> , Q200 <sup>ph</sup> , Q208 <sup>ph</sup> , SRA3 <sup>ph</sup> , Q237 <sup>ph</sup> , Q240 <sup>ph</sup> , Q247 <sup>ph</sup> , Q250 <sup>ph</sup>  |
|   | Q200 <sup>ph</sup> , Q208 <sup>ph</sup> , Q242 <sup>ph</sup> , Q232 <sup>ph</sup> , Q226 <sup>ph</sup> , Q238 <sup>ph</sup> , SRA3 <sup>ph</sup> , Q253 <sup>ph</sup> |   | Q242 <sup>ph</sup> , Q200 <sup>ph</sup> , Q208 <sup>ph</sup> , SRA3 <sup>ph</sup> , Q237 <sup>ph</sup> , Q240 <sup>ph</sup> , Q247 <sup>ph</sup> , Q250 <sup>ph</sup>  |
| Clay Soils                                    | Q208 <sup>ph</sup> , Q232 <sup>ph</sup> , Q226 <sup>ph</sup> , Q238 <sup>ph</sup> , Q242 <sup>ph</sup> , Q253 <sup>ph</sup> , Q240 <sup>ph</sup> , Q183 <sup>ph</sup> | Terrace Loamy Soils                             | Q242 <sup>ph</sup> , Q237 <sup>ph</sup> , Q200 <sup>ph</sup> , Q208 <sup>ph</sup> , Q240 <sup>ph</sup> , Q232 <sup>ph</sup> , SRA3 <sup>ph</sup> , Q247 <sup>ph</sup>  |
| Sandy Soils                                   | Q208 <sup>ph</sup> , Q247 <sup>ph</sup> , Q226 <sup>ph</sup> , Q232 <sup>ph</sup> , Q238 <sup>ph</sup> , Q242 <sup>ph</sup> , Q253 <sup>ph</sup> , SRA3 <sup>ph</sup> | Clay Soils                                      | Q200 <sup>ph</sup> , Q208 <sup>ph</sup> , Q240 <sup>ph</sup> , Q232 <sup>ph</sup> , SRA3 <sup>ph</sup> , Q247 <sup>ph</sup>  |
| Hill Slope Soils                              |   | Seymour Soils                                   | Q200 <sup>ph</sup> , Q240 <sup>ph</sup> , Q250 <sup>ph</sup> , Q226 <sup>ph</sup> , Q208 <sup>ph</sup> , MQ239 <sup>ph</sup> , Q242 <sup>ph</sup> , Q253 <sup>ph</sup> |
| Varieties Displaying Tolerance of Sodic Soils |   | Q138, Q215 <sup>ph</sup> , Q226 <sup>ph</sup> * |  |

Note – Recommendations for Q226<sup>ph</sup>, Q231<sup>ph</sup>, Q240<sup>ph</sup>, Q242<sup>ph</sup>, Q247<sup>ph</sup>, Q250<sup>ph</sup> and Q253<sup>ph</sup> are based on limited information

### DISEASE RATINGS FOR RECOMMENDED VARIETIES IN THE HERBERT

|                     | Brown rust | Chlorotic streak | Leaf scald | Orange rust | Pachymetra root rot | RSD | Red rot | Smut | Yellow spot |                     |
|---------------------|------------|------------------|------------|-------------|---------------------|-----|---------|------|-------------|---------------------|
| Q183 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q183 <sup>ph</sup>  |
| Q200 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q200 <sup>ph</sup>  |
| Q208 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q208 <sup>ph</sup>  |
| Q215 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q215 <sup>ph</sup>  |
| Q190 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q190 <sup>ph</sup>  |
| Q226 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q226 <sup>ph</sup>  |
| KQ228 <sup>ph</sup> |            |                  |            |             |                     |     |         |      |             | KQ228 <sup>ph</sup> |
| Q231 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q231 <sup>ph</sup>  |
| Q232 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q232 <sup>ph</sup>  |
| Q237 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q237 <sup>ph</sup>  |
| Q238 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q238 <sup>ph</sup>  |
| MQ239 <sup>ph</sup> |            |                  |            |             |                     |     |         |      |             | MQ239 <sup>ph</sup> |
| Q240 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q240 <sup>ph</sup>  |
| Q242 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q242 <sup>ph</sup>  |
| Q247 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q247 <sup>ph</sup>  |
| Q250 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q250 <sup>ph</sup>  |
| Q253 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | Q253 <sup>ph</sup>  |
| SRA3 <sup>ph</sup>  |            |                  |            |             |                     |     |         |      |             | SRA3 <sup>ph</sup>  |



= Resistant



= Intermediate



= Susceptible



= Unknown/In Trial

# VARIETY PERFORMANCE & RECOMMENDATIONS

## 2015 RELEASE VARIETIES

### SRA3<sup>Φ</sup> (QN86-2214 X Q200<sup>Φ</sup>)

2015 Release SRA3<sup>Φ</sup> comes from the Northern Plant Breeding Program, where it was known as QN02-777. It is recommended for the Herbert's Alluvial, Clay and Terrace Loamy Soils. SRA3<sup>Φ</sup> is resistant to Brown Rust and Red Rot, but is intermediate for Leaf Scald, Smut and Pachymetra, therefore a block rotation with a Pachymetra resistant variety is suggested.

The variety is a good germinator, with moderate to high CCS and is suggested to be harvested mid to late season. It is described as having "similar results as Q208<sup>Φ</sup>", with a better canopy cover. The variety has been found to be sensitive to herbicides, Flame and also to 2,4-D when applied at a low water rate. Plant and 1<sup>st</sup> ratoon will be available from HCPSL Plots in 2016.

## PROMISING VARIETIES FOR THE FUTURE

### QNO4-668 (H72-8597 X QN89-109)

QNO4-668 is a promising variety that could be released in the near future. In 3<sup>rd</sup> ratoon FAT trials under extreme conditions, the variety ratoons have shown strong vigour. If it is released, will be suggested for extreme areas such as very wet or very dry soils. The variety has shown below average CCS levels under trial conditions. HCPSL will investigate if CCS levels could be improved by varying N rates or crop ripeners.

In appearance, it has a large thick stalk and grows quite tall. Lodging is not expected to be a problem as it survived Cyclones Yasi and Ita in the FAT trials. It is known to sucker towards the end of the season, and has shown to have the best CCS levels mid to late in the season. QNO4-668 is **Resistant** to Red Rot and Mosaic, and **Intermediate** to Pachymetra, Smut, Leaf Scald and Brown Rust. A possible decision concerning the release of this variety could be made at the 2016 Herbert Variety Meeting.

## SRA OPTIMISES SUGARCANE VARIETY SELECTION WITH QCANESELECT™

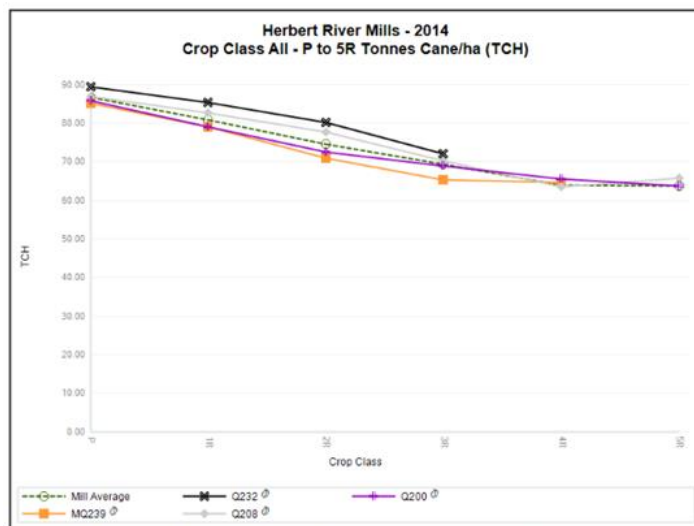
Optimising sugarcane variety selection for different soil types, environments and management targets is important to maximise productivity and profit for growers and millers. QCANESelect™ found on the SRA website [www.sugarresearch.com.au](http://www.sugarresearch.com.au) was developed to provide growers with interactive, up-to-date advice and information on varieties for their individual situations.

Growers can define the soil type, diseases of concern and management options and get recommendations for an individual block or for their whole farm. The system also provides variety information sheets that are linked to the SRA plant breeding database with live updates as new information is entered into the database.

Variety information page where you can tailor your preferences for variety suggestions.

QCANESelect™ provides reports in a range of formats on actual variety performance from mill statistics. Recent developments have extended the variety performance reports for Herbert, Tully, Mackay and South Johnstone mills. The new variety performance reports allow users to examine variety performance by sub-district, crop class and by soil type.

By examining actual performance, growers and advisors can make better recommendations and can make better decisions for their farm. QCANESelect™ has been widely used by advisors and growers and has been heavily promoted by SRA. On-going development has been facilitated by an SRA funded project led by SRA Senior Researcher Joanne Stringer called "Optimising productivity and variety recommendations through analysis of mill data".



Mill Average is the average for all Varieties for the selected Region or District, Crop Class and Soil Type.

Typical report that can be generated on variety performance by region, year, crop class and soil type.

## VISITORS TO THE HERBERT

During 2015 the Herbert cane industry received the following official delegations to view our industry practices first hand:

- 21<sup>st</sup> - 22<sup>nd</sup>. April - NSW sugarcane industry delegates review farming practices and trials.
- 22<sup>nd</sup>. April - Indian delegate Narendranath Mullapudi to discuss harvesting systems and variety exchange.
- 16<sup>th</sup>. June - SRA Board visit.
- 12<sup>th</sup>. August - Professor Geoff Garrett (Chief Advisor to the Minister for the Great Barrier Reef) visit to joint HCPSL and DNRM trials on managing Reef Water quality.
- 13<sup>th</sup>. August - ABC Radio National, Gregg Borschman to review industry practices in relation to Reef Water quality management and interview with HCPSL Manager.
- 18<sup>th</sup> - 19<sup>th</sup>. August - Brazilian delegation led by CASE to look at harvesting and farming systems.
- 24<sup>th</sup>. August - Delegates from ICL Australia and overseas to view first hand their funded HCPSL trial at the HCPSL Macknade Farm. The delegation also discussed local research undertaken on enhanced efficiency nitrogen products.
- 24<sup>th</sup> - 25<sup>th</sup>. August - Dr. Anna Hime from Louisiana State University, Homua Research Station. Anna reviewed SRA research into introgression plant breeding research and introgression trials in the Herbert.
- 6<sup>th</sup>. October - Delegates from WWF Australia visited farms within the region to discuss with grassroots growers activities they were undertaking to manage Reef Water quality issues. The visit was organised by HCPSL and Nick Heath (WWF) was invited as a guest speaker that evening at its AGM.

HCPSL also hosted two university students during 2015. These students worked with HCPSL staff on trials, extension activities, and in the Approved Seed plots.

- Sarah Jane Connor (4<sup>th</sup> year student from the University of Queensland - Gatton campus) for 2 weeks in July, 2015.
- Morgane Le Bris (2<sup>nd</sup> year student from Ecole Supérieure d'Agriculture d'Angers, France) for 3 months from July - September, 2015.



Sarah, student from UQ, working on glasshouse experiment at HCPSL Macknade Research Farm



Morgane, student from France, explaining results of glasshouse experiment at HCPSL Macknade Research Farm

## 2014 HERBERT SUGAR INDUSTRY AWARDS

| Award   | Recipient   |
|---|---|
| <b>Grower of the Year</b><br>(Sponsored by HCPSL)                             | Burnside Pty Ltd – Mario Porta  |
| <b>Young Grower of the Year</b><br>(Sponsored by QSL)                         | Mark Girgenti   |
| <b>Mangrove Jack Award</b><br>(Sponsored by Herbert River Catchment Group)    | Lawrence Di Bella   |
| <b>QMCHA Harvesting Efficiency Award</b>                                      | Chiesa Brothers   |
| <b>Innovation Award</b><br>(Sponsored by Rabobank)                            | Len Mancinelli  |
| <b>Farm Presentation Award</b><br>(Sponsored by CAMECO)                       | Sartor Brothers   |
| <b>Improved Farm Layout Award</b><br>(Sponsored by Canegrowers Herbert River) | Walter Giordani   |
| <b>Consistent High Productivity</b><br>(Sponsored by QSL)                     | Celotto Investments<br>Kirkwood, RW<br>Spano, C & NA<br>Mizzi Enterprises<br>Nowak, B & L<br>Tua, ES & CM |
| <b>R&amp;D On-farm Co-operation</b><br>(Sponsored by HCPSL)                   | Vince Russo<br>Alan Robino<br>Matthew Pappin<br>Karl Accornero  |
| <b>Lifetime Achievement Award</b><br>(Sponsored by HCPSL)                     | Peter & Rex Carr  |



"Grower of the Year" – Mario Porta of Burnside Pty Ltd

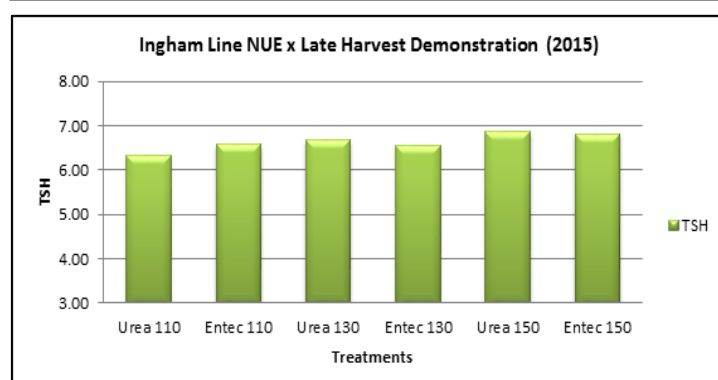
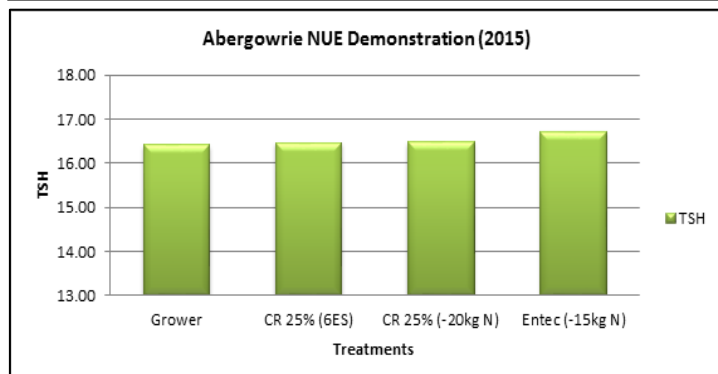
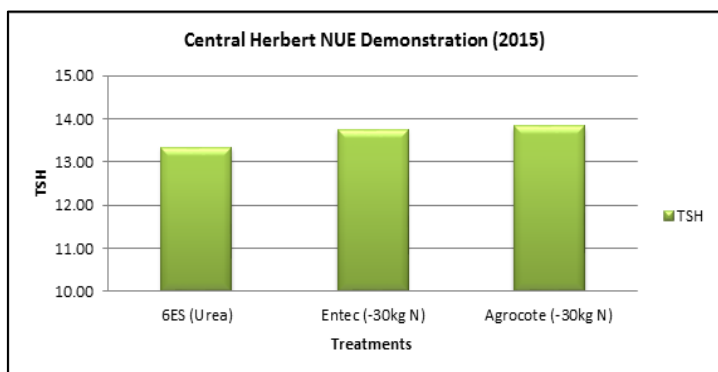


## PROJECT NEMO

Project NEMO, or Nitrogen Efficiency Management On-farm, is an initiative of the State Government and is funded by the Federal Government. The aim of the project is to demonstrate and promote nitrogen use efficiency (NUE) through different on-farm nutrient management practises and farming systems.

Project NEMO also funded the continuation of the Herbert water quality monitoring project (HWQMP) and a new rainfall simulation trial, conducted in partnership with the Department of Natural Resources, to look at how different farming practises influence the water quality run-off.

In 2015, two farming system demonstrations were established, five NUE demonstrations were harvested and a sixth NUE site was established in the Herbert. The results from some of the NUE demonstrations harvested in 2015 are shown in the following charts.



*Note:*

6ES = Six Easy Steps

CR 25% = Agrocote® blended product (25% Agrocote®, 75% urea)

Agrocote = Agrocote® blended product (25% Agrocote®, 75% urea)

Grower = standard grower practise for applying nitrogen

TSH = Tonnes Sugar per Hectare



Australian Government



Queensland Government

## THE HERBERT SUSTAINABLE FARMING SYSTEMS GROUP (HSFSG)

The HSFSG met twice during 2015 on the 8<sup>th</sup> of May and 7<sup>th</sup> of December with over 90 different people attending the meetings. The meets consisted of indoor and outdoor activities.

Topics covered during the meets were:

- The Herbert Water Quality Monitoring Program results
- Inspection of the Herbert Catchment Landcare Group – Insulator Creek project
- Inspection of a feral pig trapping site and discussion concerning the Hinchinbrook Community Feral Pig Management Program
- Inspection of the Hinchinbrook Wetland Alliance project site at lower Insulator Creek
- A final report on the biochar projects undertaken by JCU and HCPSL in the district
- A final report on the SRDC/ SRA funded Grower Group project- “Increasing Productivity on Heavy Clay soils”
- An update on Project NEMO
- Soil mapping research undertaken by the University of NSW
- A update on research undertaken on YCS
- Enhanced efficiency fertilisers

The group continues to drive and focus on local priorities to improve productivity, air, soil and water health of the region.



Herbert Sustainable Farming Systems Group Workshop



Herbert Catchment Landcare Group – Insulator Creek Project

## HARVESTING RESEARCH

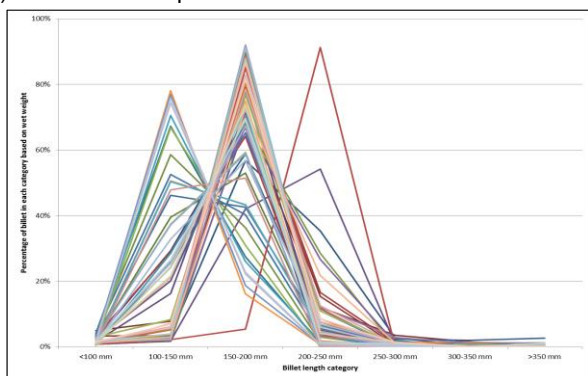
The last two productivity reports highlighted that minimising harvesting losses is a high priority. The 2015 Herbert harvesting forum discussed a number of key trials in which the region wanted to investigate further. These included:

- Whole of industry value chain - Payment system
  - o Economics for harvesting speed returns – whole of value chain
- Survey of billet size and bin weight - linkage to transport cost
- Collective data analysis
- New technologies i.e. Blakey's basecutter discs and EHS chopper drums
- Cane cleaning

### Cane Supply Quality Survey

In the 2015 harvest season, SRA, Wilmar and local productivity services conducted a cane supply quality survey for the Herbert, Burdekin, Proserpine and Plane Creek regions. The project was initiated to gain a better understanding of the quality of cane supplied to the mill for each respective region.

The project was undertaken in accordance with standards set by the ISSCT- Agricultural Engineering Committee and involved multiple samples being taken from each group between 7am – 9am. Data collected included important block information such as variety, ratoon and crop condition as well as the billet quality rating, billet length and extraneous matter (EM) for all bins sampled.



### Billet deterioration

The cane supply quality survey identified high levels of mutilated and damaged billets in the cane supply. A trial was undertaken to assess whether sugar contained in these billets remains constant over a normal cut to crush time frame. The purpose of the trials was to test the impact of time, simulating cut to crush, on the quantity of sugar contained in billets of 150mm and 200mm length:

- Sound billets
- Damaged billets
- Mutilated billets
- Mixed billets.

The billet deterioration trials will continue in 2016 with a trial conducted at the beginning of the season and another at the end, to assess deterioration over the season length.

### Cane cleaning plant

The aim of this trial was to evaluate the potential benefits of an alternative approach to cane cleaning. Research has shown that producing clean cane using the harvester extractor results in high levels of cane loss. An alternative

approach adopted by a number of offshore sugar industries has been to minimise extractor losses in the field through reduced fan speed and then extract excess extraneous matter using a cane cleaning plant (either siding or mill based).

The trial involved measuring infield sugar loss, EM levels, CCS, yield, bin weight, dollars/hectare and the impact on milling parameters for different harvest, transport, and milling scenarios. The treatments involved:

- Current practice (using a high fan speed to produce acceptable bin weights/EM levels but with high cane loss).
- Low fan speed (minimal cane loss but bin weight/EM at unsustainable levels for millers)
- Low fan speed plus cane cleaning plant (minimal cane loss to maximise crop yield with EM removed by the cane cleaning plant to produce minimal EM levels and high bin weights).

### Ground speed trials and the effect on follow ratoons and basecutter height trials

The purpose of this trial was to understand and promote the linkage between harvester damage and ratooning to address the current trend towards faster harvesting speeds driven by cost pressures and lack of harvesting capacity. Two long term harvester operation vs ratooning study sites were established in the Herbert to monitor the effect of harvester operational settings on subsequent yields. The harvester parameters which are being studied are the impact of high vs moderate groundspeeds and the impact of shallow vs deep cutting heights on subsequent yields.

### Quantify relative magnitude of sugar loss from the EHS alternative chopper system design vs a standard chopper system in the same field.

The EHS system has smaller chopper drums which almost double the gap that the cane bundle passes through which should significantly reduce crushing and therefore juice loss. Preliminary results were of the EHS system fitted to a harvester in Dalbeg (Burdekin) for the 2014 crush and was tested alongside a standard chopper system within the same block/variety.

Two trials were conducted in the 2015 season with the EHS chopper drum being fitted to a Case 8000 and was tested alongside a standard chopper system (Case 8000) within the same block/ system. Please note: Both machines were setup to produce the same length billet to give a fair comparison. Trash samples from both machines were used to compare the relative magnitude of sugar loss between the two systems. Billet quality from both systems were also assessed. Trials will continue in the 2016 season.

### Comparison between Blakey basecutter discs and standard basecutter discs

Two trials were conducted in the Herbert and Tully region quantifying whether there are benefits to the Blakey basecutter discs. The trials conducted assessed soil in cane supply and wear of basecutter blades. Trials will continue throughout the 2016 season assessing the same parameters as well as potential yield for the following ratoons.

All results from the 2015 harvesting trials will be presented at the Herbert harvesting forum on the 3<sup>rd</sup> of May.



## SRA HERBERT PLANT BREEDING PROGRAM

SRA has started improvements to the sugarcane plant breeding program in the Herbert with the appointment of two new staff in Ingham. The appointments follow the recommendations of a review into SRA's plant breeding activities in the Herbert, with one of the recommendations being the appointment of additional staff to assist with SRA's work in this area.

SRA announced the appointment of Andrea Bryan as Farm Manager for SRA's Herbert station and new Plant Breeding Technician, Melanie Adams. They join the current Herbert SRA team of Heidi Clements, Fulvio Gori, Vince Blanco, Glen Park, Megan Zahmel, and Phil Patane, with the breeding program overseen by SRA breeder Dr Felicity Atkin (Meringa). The appointments are a response to increased activities in the variety selection program and the new staff form part of the bigger picture of improving the Herbert plant breeding program.

The main extra Herbert activity will be in stage-2 selection trials, called Clonal Assessment Trials or CATs. This will allow SRA to more quickly select clones that are adapted to the needs of the Herbert region. These clones will then be tested in regional Final Assessment Trials (FATs) and Ratooning Variety Trials (RVT's), the latter in collaboration with the Herbert Cane Productivity Services Limited. The first CAT Propagation, as well as additional from other regional programs, will be established in 2016 to plant the 2017 CAT.

The Herbert Plant Breeding team successfully established four Final Assessment Trials (FATs) across the region, as well as harvested all FATs (including some in older ratoons) during the 2015 planting and harvest season. Along with CCS samples, numerous observations from presence of disease, germination, management issues and shoot counts were collected. The release of SRA3<sup>®</sup> also occurred and with several possible clones in advance stages to be considered for release, the Herbert program is going from strength to strength.



The above variety QN04-668 is under review for release



A commercial harvester cutting an RVT – Note the different varieties in the field

## HERBERT RATOONING VARIETY TRIALS (RVT'S)

Herbert RVT's are conducted by a combined effort from Heidi Clements of SRA and Sam Sellick of HCPSL. These trials were introduced into the area after a review of the Herbert Plant Breeding Program when concerns were raised regarding varietal performance in problematic soil types. The RVT's allow us to survey which varieties will grow in these areas, and also to trial which varieties will ratoon under commercial harvesting conditions. The decision was made to run and survey these trials beyond the 2<sup>nd</sup> Ratoon (as long as these blocks are financially viable). All of the varieties in the RVT's are also trialled in the FAT's, although only to 2<sup>nd</sup> ratoon.

The RVT's began in 2013 and below is a quick review of where we are up to with the trials:

- 2013 - 2 Trials planted - 1 in a dry clay block at Helens Hill and the 2<sup>nd</sup> in a wet clay block at Seymour.
- 2014 – 2 Trials Planted - 1 in a wet clay block in the Trebonne area and the 2<sup>nd</sup> in a sandy block at Stone River.
- 2015 – 2 Trials Planted - 1 in a heavy clay block at Blackrock and the 2<sup>nd</sup> in a sandy block at Abergowrie.
- 2016 - Another 2 trials will be planted with a focus on the Hawkins Creek and Yuruga areas.

Approximately 20 of the top performing varieties from the FAT's are put into the trials, along with some standard varieties that suit the soil type, to compare against. Each block is monitored for –

- Germination ratings
- Disease inspections
- Stalk counts
- CCS curves (samples are taken throughout the year for the plant blocks)
- CCS samples are taken before harvest for the ratoon blocks
- In a plant block, weights are taken for each variety, by getting a 10 stalk sample
- In a ratoon block, weights are collected with the use of a weigh tipper.

All of this data is then collected and used in the recommendation of approval of varieties for the area.

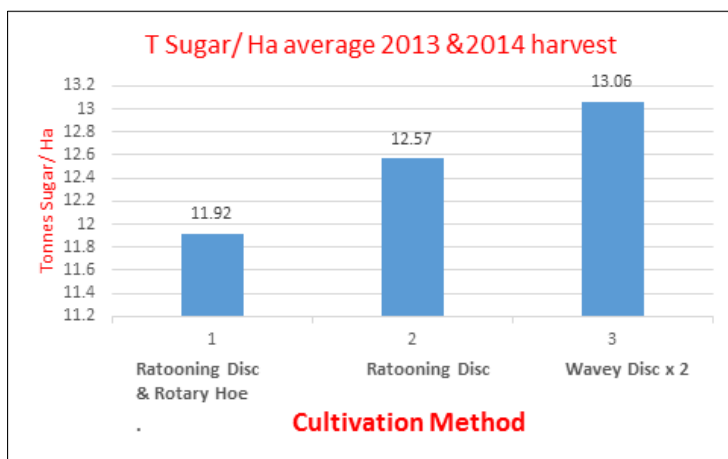


## PROJECT CATALYST 2015

Now in its seventh year, Project Catalyst is an innovation program that supports 72 cane growers to undertake projects designed to test and validate management practices that improve the growers' bottom line as well as water quality impacting the Great Barrier Reef. It is supported by a unique partnership including Reef Catchments, NQ Dry Tropics and Terrain NRM, WWF, the Coca-Cola Foundation and other partners and sponsors.

This year saw results from several projects in the Herbert, including those undertaken by Norm Reid.

### Evaluating Methods of Preparing Existing 1.9m Controlled Traffic Beds for Planting, using Double Disc Opener Planter



This trial investigated tillage methods after a poor legume crop, due to extreme rain events. The old ratoon was sprayed out and cowpeas direct drilled into trash blanket. After the wet season, legumes and weeds were sprayed out and each of the three tillage methods were carried out on 3 x 6 row strips (0.62 ha each). Each strip was harvested individually in plant and 1<sup>st</sup> ratoon with the combined results presented above.



Glen Park, SRA and Lawrence Di Bella, HCPSL addressing Catalyst growers on a field tour to Wet Tropics at HCPSL's Macknade Research Facility

## REEF GRANTS WINDING UP – WHAT'S NEXT?

The Australian Government's Reef Programme (formerly Reef Rescue) is finally coming to an end after eight years of hard work and practice change. The programme has opened minds and wallets to achieve on-farm best practice, improve productivity, and look after the health of our waterways and reef.

Terrain NRM (Terrain) administers the Programme on behalf of the Australian Government and has been working with HCPSL and other industry partners to establish best practice guidelines and support the delivery of projects on-ground.

HCPSL's Reef Programme Grants Officer Linda Di Maggio is funded through Terrain to support farmers in the application and delivery of their projects. She said, "The Programme has allowed farmers to co-invest in new land management technologies and practices, delivering environmental and economic benefits. I've been very busy helping as many Herbert growers as I can to ensure their projects are achievable and on track. It's a great sense of satisfaction to see the positive change in attitudes and farm management practices across the region as a result."

Terrain's Reef Programme Manager, Deb Bass said, "In the eight years of the Reef Programme, a total of 633 applications have been received from the Herbert region with 400 projects receiving funding to improve land management practices within the Great Barrier Reef catchments. These are some of the 972 cane projects across the Wet Tropics region who are reducing soil loss and sediment and nutrient runoff to the Reef." She said, "The Programme has injected \$8.5 million into the Herbert region with farmers matching the investment dollar-for-dollar."

HCPSL's Lawrence Di Bella said, "Farmers have contributed significantly in time and dollars. They have managed to afford their practice changes as result of the grants. It's been valuable partnering with Terrain who has worked hard to bring partners together and administer the grants. Friendships have been forged as a result of the Reef Programme which will enable us to take industry, environment and our economy into the future in a positive and productive way."

Terrain has been working with partners to draw up a proposal for the Australian Government to provide continued funding support to farmers for practice change and water quality improvement. Terrain is working with scientists and government to collect data on water quality across the region. This is expected to shed some light on the impact of the Programme. Information will be available in due course via the Reef Report Card and Water Quality Improvement Plan which will be available on Terrain's website ([www.terrain.org.au](http://www.terrain.org.au)).

For information about the Programme, go to <http://www.terrain.org.au/Projects/Wet-Tropics-Agriculture/Reef-Programme> or contact Deb Bass on [deb.bass@terrain.org.au](mailto:deb.bass@terrain.org.au) or (07) 4095 7106.



## HERBERT DEMONSTRATION FARM #2

The Herbert Demonstration Farm #2 project ran for three years (2013-2015) and followed on from the Herbert Demonstration Farm #1 site on the Marino farm. The project was funded under the Paddock to Reef program with the trial site established on Tom Gilbert's farm. The aim of the trial was to compare two sub-surface applied nitrogen fertiliser products, Urea and Agrocote®, in relation to run-off and the potential benefits to water quality.

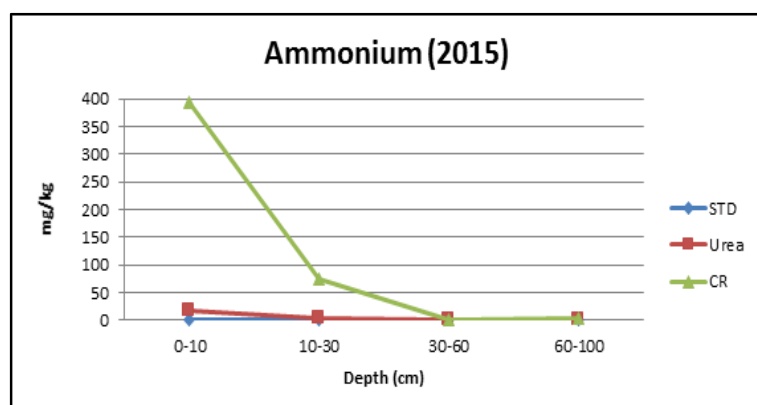
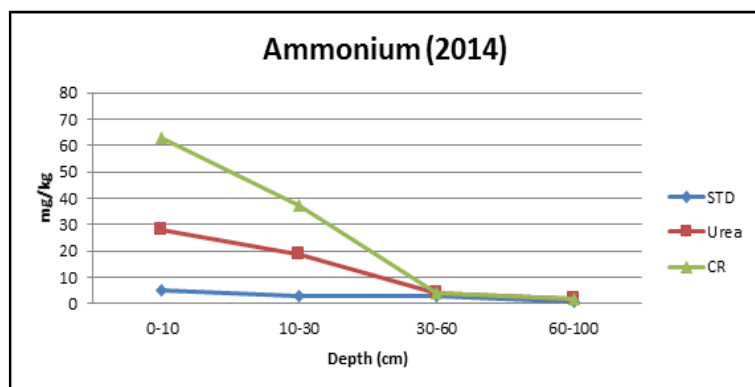
Along with run-off sampling, the trial included assessments of soil nitrogen, crop biomass and productivity.

The key findings indicated that -

- Nitrogen in runoff accounted for <2% of applied nitrogen for both the Urea and the Agrocote® treatments when applied sub-surface.
- The Agrocote® treatment contained higher levels of nitrogen in the soil for longer but that it was predominantly in the more stable ammonium form.
- There was no measurable movement of nitrogen horizontally and limited movement vertically in the soil profile, particularly past 30 cm.
- There was little difference in both productivity and in-crop nitrogen levels between Urea and Agrocote® treatments.

These findings highlighted not only the benefits of using the Agrocote® product, but in particular the benefits to water quality of applying nitrogen fertiliser sub-surface.

The tables below show the relationship between sub-surface applications of Urea, Agrocote® (CR) and zero nitrogen (STD) in the soil 2-3 months after sub-surface application.



## NITROGEN USE EFFICIENCY POT TRIAL

Following on from the Paddock to Reef's Demo Farm #2 project on Tom Gilbert's farm, HCPSSL, in partnership with the State and Federal Governments, have established a nitrogen use efficiency (NUE) pot trial on the Macknade Research Station.

The NUE pot trial will help the industry to better understand nitrogen movement, in particular the losses associated with leaching and waterlogging, while comparing conventional urea with enhanced efficiency fertilisers such as Agrocote and Entec.

### Pot Trial Objectives

- Determine the form (urea, ammonium, nitrate) and rate of supply of nitrogen from enhanced efficiency fertiliser (EEF) products.
- Determine the nitrogen recovery from different EEF products over a period of 150 days from planting under different watering scenarios.
- Use a nitrogen budget approach to estimate the loss of nitrate-N by denitrification and leaching from EEF products over time.
- Investigate the use of natural abundance analyses to discriminate crop nitrogen recovery from fertiliser and mineralised soil.

The pot trial will continue into 2016 with the results being made available to the industry once all of the trial data has been collected and analysed.



Students from Ingham State High School and Gilroy Santa Maria College on a guided tour of the new pot trial project on the Macknade Research Station



Australian Government



Queensland Government



## INTROGRESSION

SRA, HCPSSL, Wilmar, MAPS, ISIS Productivity, NSW Sugar and QDAF are working on the collaborative Introgression Project which started in 2014.

The objectives of the Project are:

- Identify and exploit new germplasm for better ratooning, resistance to nematodes and *Pachymetra Root Rot*.
- Examine (ground – truth) identified clones that are resistant to nematodes in controlled-environment screening tests in field-based trials.
- Select clones with higher yield and ratooning ability under harsh conditions. Establish a clear pathway for future direction and investment in Introgression breeding.

Four trials have been established in the Herbert to assess the following traits:

- Pachymetra tolerance
- Root Lesion Nematode tolerance
- Seedlings (which are based at the Macknade HCPSSL farm) to investigate ratooning and vigour

All of these trials are progressing well with disease inspections and germination counts showing promising results.

## FALLOW ROTATIONAL CROPPING OPTIONS

Rice, soybeans, cowpeas and lablabs are being planted across the district as fallow crops.

In terms of a financial return, gross margins was generally good for rice in 2015. Also, rice grown in rotation with legume crops will have a higher return per hectare than growing rice in direct rotation with cane.

*Indica* varieties of rice are best suited to the Herbert's conditions. The Doongara variety is the most popular short-grained rice planted in the district.

Clay and loam soils are best for planting rice as they retain moisture best. Light sandy soils cannot hold moisture and result in yield loss. Sodic soils are also unsuitable. Bed preparation is very important prior to seeding. Ensure consistent soil structure, moisture and even tilth across the bed and furrow if possible. Consistent moisture is needed across the bed at sowing time.

In rice, a controlled-release fertiliser, such as an Entec, can be used where access to the bed is difficult due to wet conditions, high rainfall or poor drainage. The controlled-release fertiliser will allow a reduction in fertiliser application to two applications – at pre-plant and panicle initiation. However Entec fertiliser cannot be used at panicle initiation as the product needs to be applied sub-surface.

Weed history in a paddock can have a large impact on yields. If a paddock has been bare fallow, it is best to use a legume prior to planting rice. Residual herbicides previously applied to other crops in the paddock can damage the rice crop. Herbicides such as Atrazine (2,4-D), Simazine, Lusta (chlorsulfuron) and Ally (metsulfuron-methyl) will damage the rice roots if they come into contact with these residual herbicides. Also check plant back periods for other commonly used herbicides such as Balance, Flame, Velpar and Diuron.

If possible, irrigate the bed before sowing or cultivate prior to forecast rainfall. Apply a knock-down if needed before bed preparation. As always, read the herbicide labels to ensure the correct product and water rate is used and withholding periods for plant back and harvest are observed.

December to January is the best time for a wet season crop. This is the recommended option and fits well with plant cane and rainfall.

Also consider other fallow rotational crops such as legumes.

Soybeans are a popular option and are tolerant to waterlogging and can provide a great source of nitrogen for your next cane crop. They do however require good moisture and attention to detail at planting. Cowpeas and Lablab are easier to establish but generally provide less biomass and most varieties are susceptible to root rot under waterlogged conditions.

Most soils in the Herbert have a low pH, which can affect the establishment and growth of many legumes. By applying lime before you plant the legume crop, it is possible to increase the soil's pH and provide better growing conditions for the legume fallow crop.

Growing a legume fallow is about providing a good base from which to establish the next sugarcane crop. Remove weeds in the fallow crop, before they seed, to ensure a reduction in future weed pressure in the next cane crop.

Sugarcane volunteers are hosts to pests and diseases such as *Pachymetra* root rot. Using herbicides such as Verdict or Fusilade will remove these volunteers, but not your legume fallow crop.



Brendon Accornero inspecting a rice crop in the Herbert

## RATOON STUNTING DISEASE (RSD)

During 2015, HCPSL hot water treated 94.25 tonnes of cane and conducted over 600 seed inspections, with only 24 being confirmed with RSD. HCPSL believes the best way to manage RSD is to flood the region with Approved (clean) Seed and general hygiene. Growers are urged to ensure that they have sufficient Approved Seed planted annually on their farms to allow for commercial planting of blocks.

## FERAL PIGS

Feral pig numbers continue to remain static and crop damage at historical lows, since the inception of the Hinchinbrook Community Feral Pig Management Program (HCFPMP). The HCFPMP has been successful in getting numbers of feral pigs down, with over 1000 feral pigs being taken out in 2015.

HCFPMP was also successful in attracting State Government to manage feral pig impact on turtle populations along the coast areas within the Hinchinbrook Shire. This project has allowed aerial shooting and trapping in remote areas that previously could not be easily accessed by the HCFPMP and wider community.

## CANEGRUBS

The use of Imidacloprid occurred once again in 2014-15. The increased use of Imidacloprid did not align with the incidence of cane grub activity, hence causing HCPSL to contact all growers and resellers concerning the misuse issues associated with Imidacloprid.

The levels of cane grub damage was very low in historical impacted areas like Stone River, Pappin's Road and Abergowrie. This is probably due to the continued use of Imidacloprid in these areas. In 2015, crop damage occurred in the Toobanna, Halifax and Fourmile areas. These areas historically have not been problematic areas in the past. It is recommended that growers implement monitoring activities on farm and implement an Integrated Pest Management program when they have a grub issue.

## YELLOW CANOPY SYNDROME (YCS)

As we enter 2016, Yellow Canopy Syndrome (YCS) remains a complex problem for many Queensland cane growing regions, with researchers and growers grappling with the mysterious syndrome. At the end of the 2015 harvest, productivity service leaders agreed that YCS has had an impact on regional yields, particularly in the harder hit areas of Mackay, Proserpine and the Herbert. The majority of Queensland cane growing regions have experienced some degree of YCS, with a number of blocks devastated and cane unable to be harvested. Experience has shown that losses of over 40% can occur on very severe YCS blocks. While these cases are not common they do occur in all regions. However, some regions such as Tully remain relatively unaffected (although in 2016 Tully has reported a number of suspect blocks). Southern growing regions have not had confirmed cases of YCS.

Productivity services organisations in impacted regions have attempted to estimate district yield losses related to YCS, however this is difficult to do when looking at the large scale of an entire region. Losses at this broad level are complicated by overall losses from factors that growers are faced with around the State; such as the dry conditions experienced throughout 2015, cane grubs and high levels of Pachymetra.

Over the 2014/15 season, the SRA project Solving Yellow Canopy Syndrome, led by Davey Olsen, collected a detailed data set from 45 YCS affected blocks in the Burdekin and Herbert regions. The database contains detailed monitoring of YCS symptoms along with past and present management practice information, yield records, variety and soil type information. SRA has engaged Dr Geoff Bamber (formerly of CSIRO) to analyse the data using APSIM modelling to tease out all the variables that impact yield and isolate the YCS impact. This work currently in progress will help SRA and the sugarcane industry to understand the impact of YCS and the cost to the industry.

Sugar Research Australia continues to work to find the cause of YCS and is also running trials with HCPSL, MAPS, SSP and BPS to investigate possible management actions that could help to reduce the impact/yield loss incurred on individual farms. So far practices that help maintain moisture levels, such as application of mill mud, or additional irrigation in Proserpine, look to be providing some improvement to the cane crop, however this is not necessarily translating to a decrease in YCS symptoms. The improved crop growth is to be expected as the cane has had a better start with the additional moisture making a difference in the dry summer.

SRA is currently appraising all YCS research following a review of the current program undertaken by a panel of international experts in November, 2015. This report compiled by the panel will help to focus the research program over the next 12 months. For more information on the Yellow Canopy Research Program please contact Belinda Billing on: 0475 954 437 or email [bbilling@sugarresearch.com.au](mailto:bbilling@sugarresearch.com.au)

## PACHYMETRA ROOT ROT

As a result of the Recommended / Approved variety lists changing due to Smut, focus on Pachymetra has increased over the last 18 months. Currently, varietal resistance to Pachymetra is the only option available to control Pachymetra, with only two commercial varieties being susceptible to Pachymetra (Q237<sup>ph</sup> and SRA3<sup>ph</sup>). All other varieties are evenly split between resistant and intermediate resistance levels.

A district wide survey was conducted early in 2015, to get an indication of Pachymetra levels district wide. 200 blocks were sampled across the 26 productivity districts, trying to capture all soil types, focussing on 2<sup>nd</sup> ratoon Q200<sup>ph</sup>, Q208<sup>ph</sup>, KQ228<sup>ph</sup> or Q237<sup>ph</sup>. Samples were processed in Tully by SRA.

Results from the survey indicated that all productivity districts showed low, medium and high levels of Pachymetra, across all soil types. It should be noted that as only 200 blocks have been sampled, the results from this survey can only be used as an estimated indication, and as Pachymetra levels are influenced by crop history, individual blocks may show different Pachymetra levels.

The only option for controlling Pachymetra currently is the rotation of Pachymetra resistant varieties. For blocks where Pachymetra levels are low, varieties with either a resistant or intermediate level can be selected. If blocks contain moderate or high Pachymetra levels, varieties with a resistant level would be the preferred choice. As Pachymetra can survive in the soil for over 5 years, crop fallows have little effect on Pachymetra levels.



## GPS BASE STATIONS

With the support of the HCPSL Board, HCPSL have been upgrading the base station network. With network upgrades to all new digital radios in 2015, improvements were seen in the quality of the correction signal. The rest of the system will, over the next few years, undergo a maintenance and replacement program with at least one brand new Base Station being planned to replace the original units. The original assets are now 10 years old and need replacing. They have operated continuously and provided good service and are now starting to reach the end of their lifecycle.

Some issues involving AB lines moving when using the new Pinnacle Hill base station were eventually resolved and now it is accurately surveyed into the CMR+ network. Thanks to the growers who identified this as an issue.

Growers are continuing to find innovative ways that this technology can assist in improving their farming systems and lifestyle. The Herbert is starting to see a number of growers begin to understand the implications of site specific zonal management and variable rate inputs. Certain farming systems and zonal tillage made possible with GPS are now being adopted which are improving productivity. It is unfortunate that YCS is not allowing the full benefits to be realised and its impact also makes productivity analysis in general more difficult.



New technology Multi Constellation Choke Ring GPS Antenna on the left compared to old unit

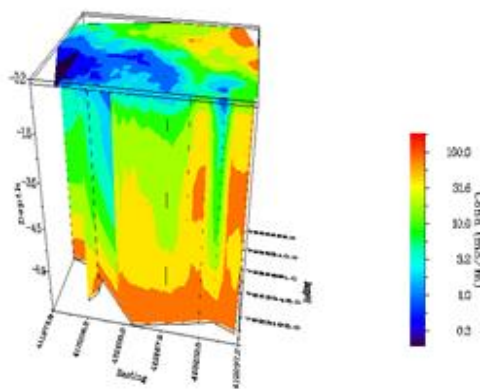
## EM MAPPING

HCPSL began a small Terrain funded project into the benefits of EM Mapping. Using both a Dual EM 421 and a Gamma Ray spectrometer, three blocks were intensively surveyed. This involved driving up every 4<sup>th</sup>. drill at about 15 KPH and collecting data from the sensors. The Herbert industry, through the project, has established some important relationships with experts in the field and some understanding of what is involved. Outputs can be 3D models of the block through the various soil horizons.



UNSW Experts with a Gamma Ray Spectrometer

3D Block Variation Map



Dual EM 421

BASE STATION UHF FREQUENCY TABLE

| GPS Base Config 2015 |                |               |     |           |
|----------------------|----------------|---------------|-----|-----------|
| Name                 | GPS Form. CMR+ | Location      | CH. | FREQ. MHZ |
| J Irvin              | B              | Warrens Hill  | 0   | 465.2750  |
| V Russo              | R              | Trebonne      | 0   | 465.2750  |
| A Pace               | R              | Mutarnee      | 3   | 466.7500  |
| R Pace               | B              | Bambaroo      | 3   | 466.7500  |
| V Castellani         | B              | Aberg         | 4   | 464.9000  |
| W & J Russo          | R1             | Herbert Vale  | 4   | 464.9000  |
| C Carey              | R2             | Dalrymple     | 4   | 464.9000  |
| G Accornero          | B              | Foresthorne   | 5   | 463.0750  |
| Water Tower          | R              | Halifax       | 5   | 463.0750  |
| S Harrigan           | R1             | Top Stone     | 6   | 463.6750  |
| Colin Guy            | B              | Bogottos Hill | 6   | 463.6750  |
| S Patane             | R2             | Lannercost    | 6   | 463.6750  |
| N Reid               | B              | Pinnacle Hill | 8   | 464.8500  |
| Lenzo Bros           | R              | Pappins Rd    | 8   | 464.8500  |



## YIELD MONITORING

HCPSSL will endeavour to process the Yield data for 2015 and (Post HRIC) are investigating a new system to process the data. This is fairly complex work and will take some time to efficiently process all the data. A project with CSIRO and SST (an agricultural spatial systems company) will hopefully add value to the Yield mapping process.

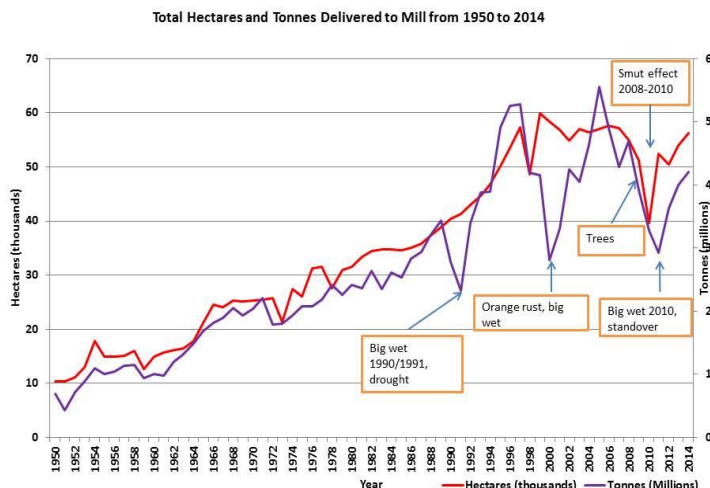
## DATA ANALYSIS

Data analysis is an important aspect of Precision Ag which is much more than a bunch of expensive gadgets. Much has taken place in this space in the last 12 months with a detailed report likely to be made public in the near future.

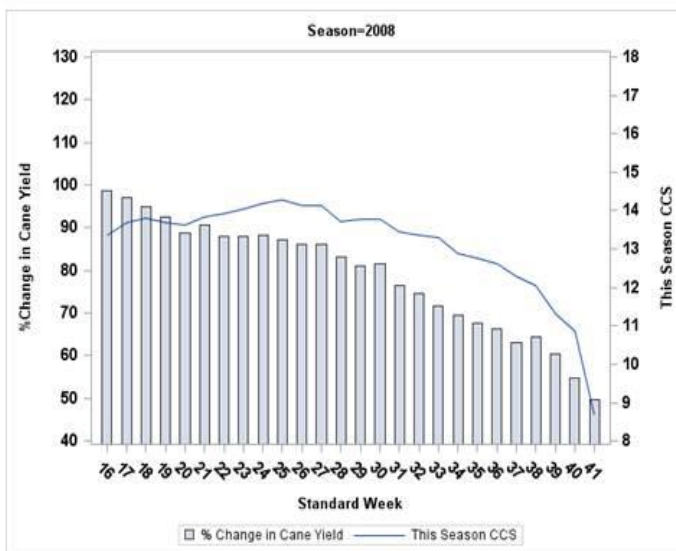
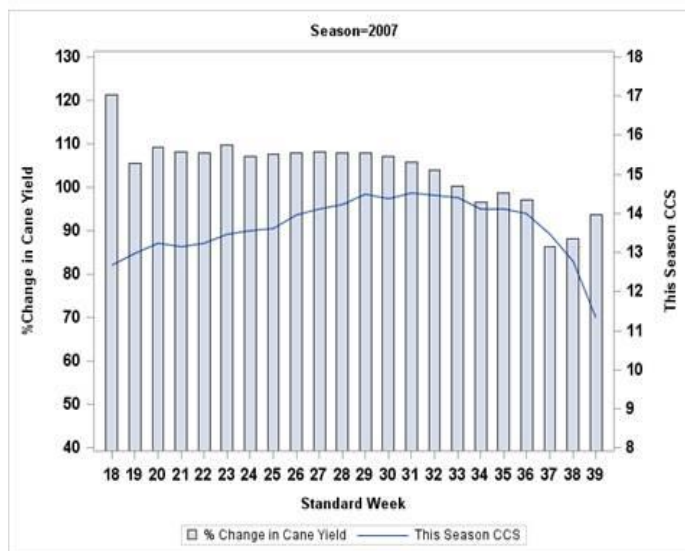
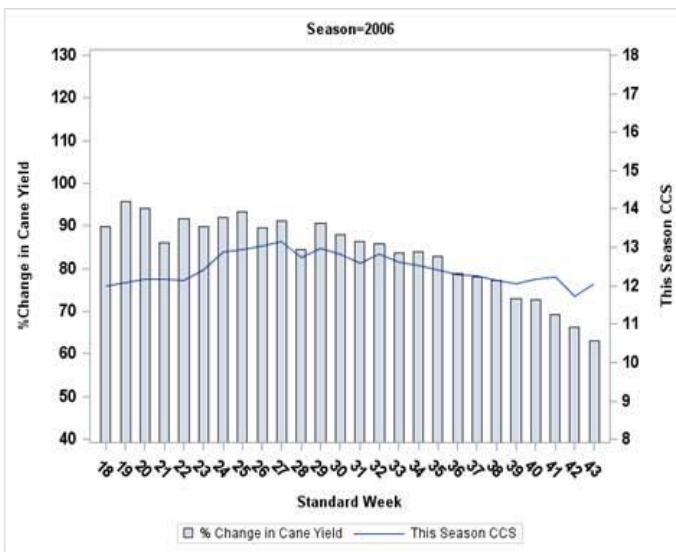
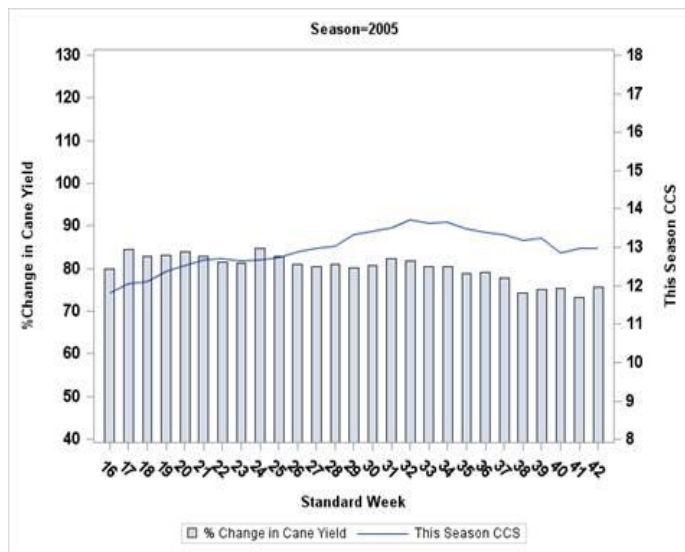
A team led by Dr Joanne Stringer from SRA has put some scientific rigour around previous discoveries by HCPSSL and in doing so uncovered some remarkable facts on productivity by mining and statistically analysing large amounts of productivity data. Watch out for the report.

An example of this was the data presented last year in the productivity report on page 15, Start time vs Ratooning, is now being analysed further by Jo Stringer and masters student George Russell. An example of this ongoing work shows change in yield the following year and CCS in the current year when we had our bigger crops and longer seasons. It shows in most years, early cut cane ratooning better whilst ccs often falls at the end.

## Herbert River Mills productivity from 1950 - 2014



It is important for the industry to fully understand this comprehensive report (once released) and the previous report by Dr Alan Garside. This research will enable us to improve productivity and make better decisions.



Note – The bars represent following ratoons as a percentage of previous yields

## Infield Grower Information Meetings

Forty-eight growers attended a series of infield grower information meetings which were held on the 30<sup>th</sup>. & 31<sup>st</sup>. March 2015, to provide the opportunity for growers to visit seed plots, trials and on-farm demonstration plots across the district. Four meetings were held in Abergowrie, Ingham Line, Stone River and Central-Lower Herbert.

Sites and topics visited and discussed included -

- The approved seed plots for 2015
- Nutrient and weed management plans
- An introgression trial site
- Several enhanced efficiency fertiliser (EEF) demonstration sites
- A Yellow Canopy Syndrome trial site
- Rotational cropping (rice & mung beans)
- Farming System demonstrations

## Grower Walk & Talk Day

The Herbert Walk & Talk field day held on 23<sup>rd</sup>. April 2015, is an initiative of HCPSL and SRA and was attended by over 150 growers and industry stakeholders. The tour was divided into three locations; the Macknade research station, the Accornero farm at Forest Home, and the Lee's Hotel, with growers travelling by bus between sites.

### Macknade Research Station

- Introgression trial (Dr George Piperidis, SRA)
- Pachymetra root rot (Graeme Holzberger, HCPSL and Dr Rob Magarey, SRA)
- Varieties (Heidi Clements and Felicity Atkins, SRA)
- Herbicides and spray equipment (Ash Benson, HCPSL and Alan Blair, DAF)
- Yellow canopy syndrome (Dave Olsen, SRA)

### Accornero Farm

- Rotational fallow cropping (Antony Vagg, Sunrice)

### Lee's Hotel

- Industry awards

## Grower Forums

HCPSL held five grower forums over two days on the 15<sup>th</sup>. & 16<sup>th</sup>. September 2015, with 49 growers and industry stakeholders attending. The locations were spread across the Herbert district and included -

- The Abergowrie Farm Centre, Abergowrie
- The CWA hall, Stone River
- The HCPSL office, Central Herbert
- Helen's Hill school, Ingham Line
- Macknade research station, Lower Herbert

A diverse range of speakers presented at each of the locations. The speakers and the topics covered included -

- Yellow canopy syndrome (Dave Olsen and Belinda Billing, SRA)
- Pachymetra root rot survey results (Graeme Holzberger, HCPSL)
- Nitrogen Use Efficiency (Adam Royle, HCPSL)
- Rotational Fallow Cropping (Antony Vagg, Sunrice)
- Irrigation Scheduling (Steve Attard, AgriTech Solutions and Alex Peachey, HCPSL)



Growers at the Walk & Talk Day at the Macknade Research Station



Grower Forum held at Abergowrie



Grower Forum held at Macknade



Industry Meeting held at the HCPSL Office





HCPSL has been an integral part of the Wet Tropics Sugar Industry Partnership (WTSIP) in 2015, an alliance of the key sugar cane industry groups and extension and training providers across the wet tropics, Ingham to Mossman and Tablelands. Agriculture, and in particular sugarcane in coastal north Queensland is scrutinised because of crop production inputs, past modification of landscapes, and close proximity to the Great Barrier Reef. WTSIP has been an industry training and extension focus on farming practice change and improvement, to deliver productivity gain and reduce sediment, nutrient and pesticide loadings that may be coming off farmland.

WTSIP is funded through Terrain NRM and Wet Tropics Reef Programme by the Australian Government, with Herbert River Canegrowers as the principal contractor. The WTSIP program has enabled extension providers to deliver a raft of training workshops throughout 2014 and 2015/2016, backed by five extension officers placed from Ingham to Mossman. Agronomy resources and the skills and knowledge base have been shared across regions on a fee for service basis.

HCPSL has delivered 16 Integrated Weed Management and Integrated Weed Management Refresher training workshops across the wet tropics in this period. The Herbert region has targeted a total of 240 growers to receive training and extension as part of this program. To date, 44 Herbert growers have attended nutrient management workshops, 39 growers have attended integrated weed management workshops, and 12 growers precision agriculture workshops. One hundred and sixty growers have attended the HCPSL district group field days with addresses relevant to farming practice change.

Concurrently, 81 Herbert region growers are in the process of implementing or updating a farm nutrient management plan, and 41 growers an integrated weed management plan. Overall, we have exceeded the Herbert region participation target by 22 growers. The WTSIP program supports the Herbert district's progress in productivity improvement, activities being undertaken to advance sugarcane use of new technology, and in the Smartcane BMP.

### **SMARTCANE BMP – DELIVERING A NEW BRAND OF SUSTAINABILITY FOR CANE GROWING**

Herbert River has been recognised as a leader across the State in registering and benchmarking growers with the grower farm practice program, Smartcane BMP. Well over half the region's cane farming land had been benchmarked in the three core modules at the time of writing, and the number of growers stepping up to participate continues to grow steadily.

This is a real sign that growers in the Herbert are keenly aware of taking control of their farming future. Growers in the Hinchinbrook would rather sign up to a system which works for their farm business than have someone else's system pushed on them. Growers across the State also realise that the time is coming fast when they will need to demonstrate to consumers and therefore the competitive world market, that their sugar is sustainably produced. They are backing Smartcane BMP as a solution which addresses all of these needs.

Growers who have been through the process report that it has generally been easier than they expected. There is excellent support locally for growers who sign up to the process. Growers are making full use of local facilitators to start and go through the process of benchmarking. The facilitators then work closely with growers to help them through the process of identifying what needs to be completed in preparation for pre-audit and full accreditation. There are now an enormous array of tools and templates to help growers towards the final steps. With this support, it is not surprising that a steadily increasing number is well advanced on the pathway to full accreditation.

The Smartcane BMP is industry-developed and industry-owned and its development has been supported with funding through the Queensland Government. CANEGROWERS has taken on management of the program, and is focussing on regional delivery to all cane growers across the industry.

Whilst there are a total of 7 modules available in the whole suite of competencies that could significantly help along the path towards a Diploma in Agriculture, the primary focus has been on the 3 core modules. These three modules are relevant to the key farm inputs of nutrient and herbicide management and soil and drainage management to have the best impact on runoff water quality at the end of the catchment where rivers and streams enter the lagoon of the Great Barrier Reef.

With Reef Water Quality Improvement being a high profile target of both the Commonwealth and Queensland governments in the government to government protocol known as Reef Plan there have been several initiatives since the 2008 Reef Rescue Plan with its incentive grants that are all aligned and consistent with Smartcane BMP supporting the thrust of a productive and sustainable industry.

More recently there has been emphasis on education and extension in the government support measures available to the industry delivered in the Wet Tropics and the Herbert region by the Wet Tropics Sugar Industry Partnership.

The successful roll out of Smartcane BMP across the industry is seen as key to achieving real results for farmers and the reef. With work behind the scenes, Smartcane BMP is being primed to be the robust system on which Australians can base their pride in our sugarcane growers on a global scale. It will become the platform of proof that can be used to show Australians and the world, the leading technology and practices for which our sugarcane growers are now renowned. For further information or to register to participate in the Smartcane BMP program contact Herbert River Facilitator Maria Battoraro at CANEGROWERS Herbert River 47765350 or mobile 0437 833 584.



**Herbert River growers proudly receiving a certificate of accreditation in Smartcane BMP**