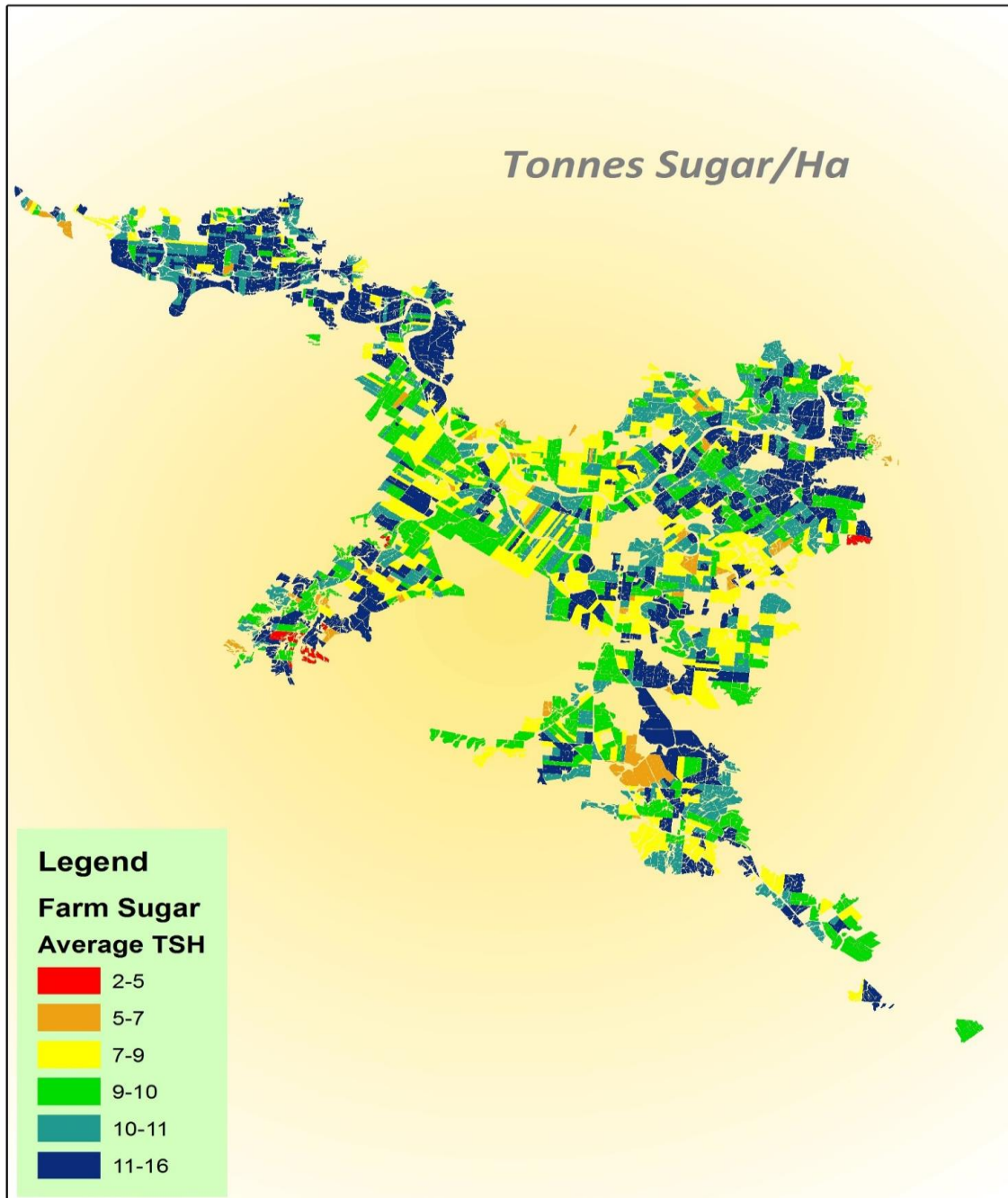
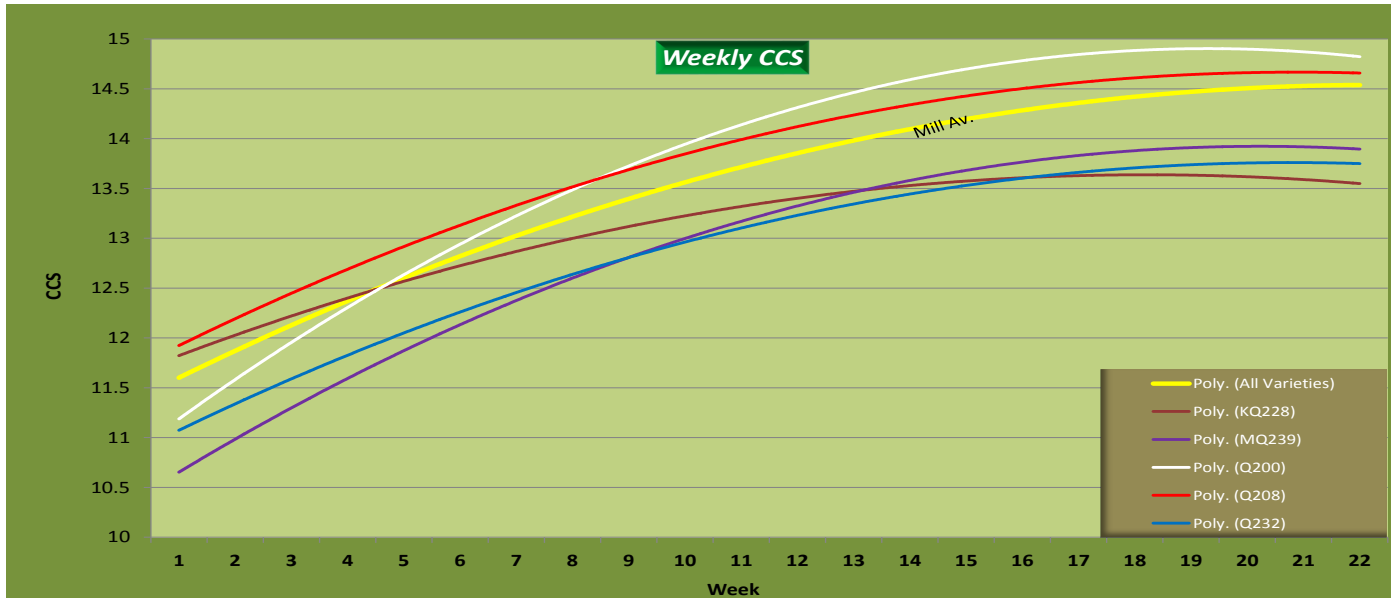




HERBERT SUGAR INDUSTRY REPORT 2014



CROP PERFORMANCE 2014



The 2014 district average yield was 74.41 tchp with a ccs average of 13.62, with the district harvesting 4.15 million tonnes. The 2013/2014 wet season was mild with little heavy rain falling, except when Cyclone Ita passed by on the 12th of April. Cyclone Ita flattened the crop and caused damage to infrastructure, especially in the Abergowrie and Lower Herbert areas. The lodged crop made harvesting and milling difficult, especially where stools rolled out of the ground. The lodged crop made harvesting and milling difficult, especially where stools rolled out of the ground. The area impacted by Yellow Canopy Syndrome (YCS) increased significantly throughout the district. The worst impacted sub-districts were Victoria Estate, Palm Creek, Trebonne, Hamleigh and parts of Abergowrie. Yield reductions caused by YCS were significant on some farms with some growers recording the lowest crop yields in history on their own individual farms. HCPSL launched its Target 85 program in October, in an attempt to increase the district average yield to 85 tchp. In the past six years we have seen the district's average yield well below the 85 tchp target, hence the initiative to increase the district's average yield potential. The HCPSL Target 85 program will bring together many research, development and extension providers (like HCPSL, SRA, Universities, QDAFF, etc.) to work together to seek to achieve improvements in cane yield for the region.

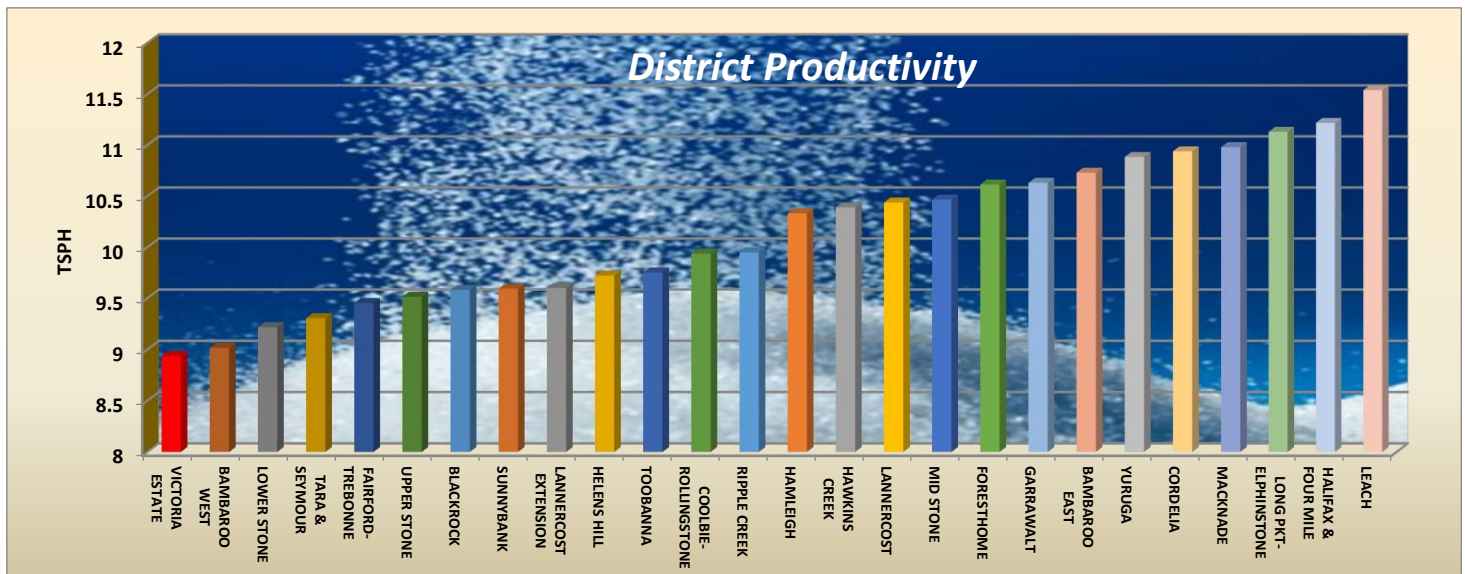
HISTORICAL DATA

Year	Tonnes	Ha Harvested	CCS	Cane Yield	Sugar Yield
1995	4908214.85	50051.86	13.05	98.06	12.80
1996	5251285.67	53513.30	13.21	98.13	12.96
1997	5272421.61	57328.33	13.37	91.97	12.29
*1998	4191272.31	48669.90	11.46	86.12	9.87
**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

* Standover Left

** Standover Harvested

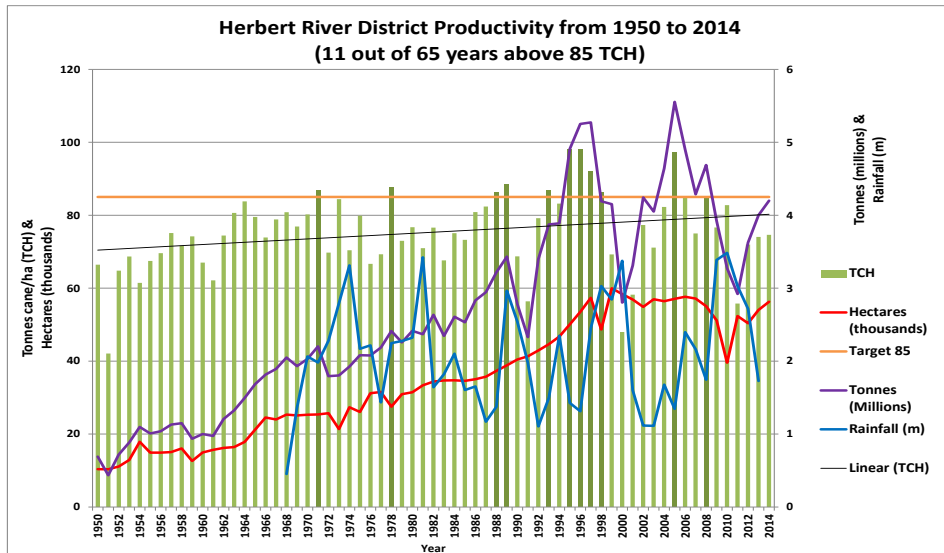
Year	Tonnes	Ha Harvested	CCS	Cane Yield	Sugar Yield
2005	5553359.05	57078.93	13.11	97.29	12.76
2006	4900084.45	57658.50	12.62	84.98	10.72
2007	4287010.73	57158.66	13.84	75.00	10.38
2008	4688595.64	55061.21	13.54	85.15	11.53
2009	3920941.21	51171.33	14.79	76.62	11.33
*2010	3274402.07	39567.98	12.85	82.75	10.64
**2011	2920400.98	52364.64	12.89	55.77	7.19
2012	3625680.08	50394.18	13.57	71.95	9.77
2013	4000685.4	54017.57	13.95	74.06	10.33
2014	4152315.8	55800.99	13.62	74.41	10.13





During the period 2013 – 2014, HCPSL was involved in a number of meetings and discussions concerning the local industry's current decline in productivity. From this work, on the 21st October 2014, HCPSL announced a new initiative called Target 85. Target 85 was established after much investigation from HCPSL and SRA into the local drivers of productivity in the Herbert.

Through this initiative, HCPSL hopes to return the average yield across the Herbert to 85 tch. While a target of 100 tch was deemed too unrealistic, historical evidence suggests that 85 tch is achievable.



The graph at left highlights that our district average yield between 1950 and 2013 was approximately 83 tch.

While varieties do play a role in productivity trends, it is recognised that the environment and annual weather fluctuations play a much larger role. Understanding these factors, along with many others, and implementing extension and research activities and strategies to promote more sustainable cropping systems and practices will be a key driver in reaching our local industry target of 85 tch.

HCPSL YEAR IN REVIEW

2014 for HCPSL was a busy year meeting the Herbert cane industry needs. HCPSL undertook the following activities during the 12 month period:

- HCPSL launched its Target 85 program. This program is aimed at getting the Herbert industry back on track to achieving high productivity, with an average of 85 tchph annually.
- Signed as a partner to the Wet Tropics Sugar Industry Partnership (WTSIP) program to deliver targetted training and extension for growers across the Wet Tropics region.
- Through the WTSIP program, HCPSL has also supported growers undertaking the Smartcane BMP program.
- Signed a contract with the Queensland Government and NQ Dry Tropics to deliver Project NEMO in the Herbert region. 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.
- Delivered an accurate crop estimate and a high quality harvest management system to the industry.
- Harvested the first Regional Variety Trials (RVTs) at Helens Hill and the Seymour. The second series of trials were planted in the Stone River and Hamleigh areas.
- Further develop its GPS basestation network to service the industry.
- Continued the yield mapping of approximately 20,000 hectares annually.
- Supported the industry following the impacts of Cyclone Ita.
- Supplied 1,200 tonnes of approved seed cane to growers, despite most plots being lodged following Cyclone Ita. This is the largest amount of cane supplied to growers in history, following up from the 660.4 tonnes provided the year before.
- Supplied approximately 2500 tissue cultured plants to growers.
- Undertook seed inspections for growers.
- Made investment into the feral pig management program.
- Was a signatory to the agreement with National Parks to manage feral pigs along the coastline in National Parks.
- Supported SRA and the University of Western Sydney investigate YCS.
- Supported SRA to obtain research into Introgression plant breeding research and a project to investigate productivity drivers for the Herbert, while developing tools to allow growers to utilise varieties better.
- Undertook research on the following:
 - Screened numerous varieties for herbicide phytotoxicity affects.
 - Managed 2 SRA funded Grower Group projects, which assessed the benefits of biochar and investigated farming systems to increase yield on heavy clay soils.
 - Undertook research as a part of the Herbert Demo Farm project.
 - Undertook research into Enhanced Efficiency Nitrogen fertiliser products.
 - Undertook research into biochar through a James Cook University led project.

The above list is only some of the activities that HCPSL has achieved on behalf and for the industry. The HCPSL Board and staff would like to sincerely thank its members for their continued support in 2014 and look forward to providing a high quality service again in 2015.

VARIETY PERFORMANCE & RECOMMENDATIONS

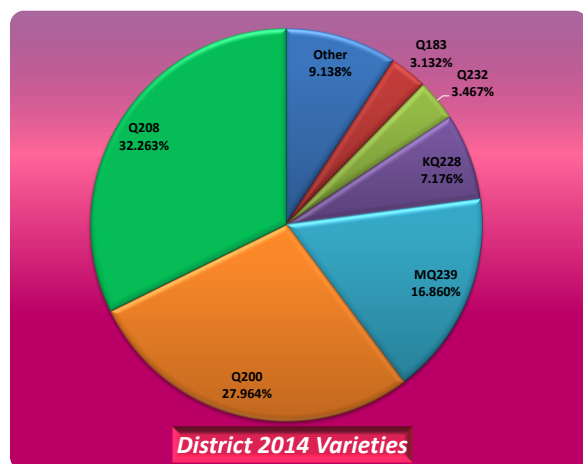
Several factors conspired to produce a year of mixed results for the Herbert region in 2014. All varieties tend to suffer from YCS at some stage of growth, although the symptom levels vary depending on the variety. It has been noted that some varieties displayed minimal symptoms in 2013, although suffered more severely in 2014.

One of the key factors which contributed to the mixed results were the severity of YCS within the blocks potentially having an effect on CCS and the yield of the crop. Another key factor was the long dry periods with very little rainfall received at the end of 2013. This affected the potential of the majority of plant cane and a percentage of ratoons which in respect affected the potential productivity for 2014.

Cyclone Ita hit the district in April. A high percentage of crops received damaged from the wind and or flood water, with parts of the district being more affected than others. HCPSL approved seed plots were not spared from Mother Nature's forces, leaving them in a state where it was impossible to get a whole stalk cutter into the majority of the varieties.

Even though all of the Seed Plots were affected by Cyclone Ita, HCPSL was still able to distribute a record amount of clean seed to growers. Another way growers have been introducing new varieties onto their farms is by the use of Tissue Culture. The number of growers ordering Tissue Culture in 2014 has increased from 2013.

A major benefit of the use of Tissue Culture is the reduced environmental risk, so no matter what Mother Nature decides to dish out, you know you will receive your clean seed. HCPSL have purchased a seedling planter, which is available to growers for those who pursue the Tissue Culture option.



Herbert Recommended Varieties x Soil Type			
Dry Zone		Wet Zone	
Terrace Loamy Soils	Q232 [♂] , Q247 [♂] , Q208 [♂] , Q231 [♂] , Q237 [♂] , Q238 [♂] , Q240 [♂] , Q250 [♂]	Alluvial Soils	Q183 [♂] , Q200 [♂] , Q208 [♂] , KQ228 [♂] , Q237 [♂] , Q240 [♂] , Q247 [♂] , Q250 [♂]
	Q200 [♂] , Q208 [♂] , Q215 [♂] , Q232 [♂] , Q226 [♂] , Q238 [♂] , MQ239 [♂] , Q253 [♂]		Q183 [♂] , Q200 [♂] , Q208 [♂] , KQ228 [♂] , Q237 [♂] , Q240 [♂] , Q247 [♂] , Q250 [♂]
Clay Soils	Q208 [♂] , Q215 [♂] , Q226 [♂] , Q238 [♂] , Q242 [♂] , Q253 [♂]	Terrace Loamy Soils	Q242 [♂] , Q190 [♂] , Q200 [♂] , Q253 [♂] , Q226 [♂] , Q240 [♂] , Q232 [♂] , MQ239 [♂] , Q231 [♂]
Sandy Soils	Q208 [♂] , Q215 [♂] , Q226 [♂] , Q238 [♂] , Q242 [♂] , Q253 [♂]		Q200 [♂] , Q240 [♂] , Q250 [♂] , Q226 [♂] , Q232 [♂] , MQ239 [♂] , Q242 [♂] , Q253 [♂]
Hill Slope Soils	Q208 [♂] , Q215 [♂] , Q226 [♂] , Q232 [♂] , Q238 [♂] , Q242 [♂] , Q253 [♂]	Seymour Soils	Q200 [♂] , Q240 [♂] , Q250 [♂] , Q226 [♂] , Q232 [♂] , MQ239 [♂] , Q242 [♂] , Q253 [♂]
Varieties Displaying Tolerance to Sodic Soils		Q138, Q215 [♂] , Q226 [♂] *	

Note – Recommendations for Q226[♂], Q231[♂], Q240[♂], Q242[♂], Q247[♂], Q250[♂] and Q253[♂] 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 [♂]										Q183 [♂]
Q200 [♂]										Q200 [♂]
Q208 [♂]										Q208 [♂]
Q215 [♂]										Q215 [♂]
Q190 [♂]										Q190 [♂]
Q226 [♂]										Q226 [♂]
KQ228 [♂]										KQ228 [♂]
Q231 [♂]										Q231 [♂]
Q232 [♂]										Q232 [♂]
Q237 [♂]										Q237 [♂]
Q238 [♂]										Q238 [♂]
MQ239 [♂]										MQ239 [♂]
Q240 [♂]										Q240 [♂]
Q242 [♂]										Q242 [♂]
Q247 [♂]										Q247 [♂]
Q250 [♂]										Q250 [♂]
Q253 [♂]										Q253 [♂]

= Resistant
 = Intermediate
 = Susceptible
 = Unknown/In Trial

VARIETY PERFORMANCE & RECOMMENDATIONS

TSPH FOR PLANT AND RATOONS BY SOIL TYPE

Class	Variety	Alluvial	Clay	Hillslope	Sandy	Seymour	Terrace Loamy
Plant	KQ228	13.21	13.07	2.84	11.09		13.08
Plant	MQ239	11.24	11.65	10.19	10.52	11.96	11.89
Plant	Q200	12.88	11.44	9.64	13.09	9.99	11.76
Plant	Q208	12.94	12.07	12.04	11.91	12.05	12.93
Plant	Q232	12.38	11.49	12.82	11.50	11.02	11.94
Plant	Q240	13.60	17.70	9.96	12.71		10.61
Plant	Q242		12.94		12.56		14.60
Plant	Q247	15.30	11.75	13.16	11.18	11.79	11.86
1Ratoon	KQ228	10.48	10.76	5.68	10.73	8.19	10.44
1Ratoon	MQ239	11.36	10.42	9.22	10.27	10.56	11.19
1Ratoon	Q200	11.43	10.89	7.74	12.36	9.15	11.20
1Ratoon	Q208	11.65	10.94	10.41	11.16	11.33	11.84
1Ratoon	Q232	10.43	10.91	9.76	10.52	12.13	10.46
1Ratoon	Q240	13.37					
1Ratoon	Q242				13.59		14.37
1Ratoon	Q247	10.00	11.26				12.39
2Ratoon	KQ228	10.06	8.98	6.26	9.05	6.87	9.41
2Ratoon	MQ239	9.21	9.46	8.13	9.11	7.36	9.78
2Ratoon	Q200	10.52	9.72	8.02	10.40	10.52	10.42
2Ratoon	Q208	10.37	10.39	10.78	10.62	9.59	10.41
2Ratoon	Q232		9.49	10.59	9.66		9.58

2014 RELEASED VARIETIES

Q226^Φ (Q138 x CP57-614)

2014 release Q226^Φ comes from the SRA Central Plant Breeding Program and provides not only resistance to such disease as Smut, Leaf scald, Yellow Spot, Red rot and Orange rust but also offers moderate to high yields on the more difficult Herbert soils. CCS is below average to average and is best harvested early in the season. Q226^Φ in Central trials has been shown to be suited to poor soil types and environments including sodics. Q226^Φ is also intermediate to RSD, Brown Rust and Pachymetra therefore growers need to manage these diseases through block rotation, clean seed material and hygiene. Material will be available from HCPSL in 2015.

Q250^Φ (QN97-183 x QN89-1043)

2014 release Q250^Φ comes from the SRA Northern Plant Breeding Program and is recommended for the Herbert's fertile and free draining soils, though it has been seen to tolerate some waterlogging. Q250^Φ is resistant to Smut and Leaf Scald but is intermediate for Red rot and Pachymetra therefore block rotation with a resistant Pachymetra variety is suggested. A good germinator, Q250^Φ has a high CCS and is suggested to be harvested in the mid-late season. Material will be available from HCPSL in 2015.

Q253^Φ (Q120 x CP57-614)

2014 release Q253^Φ comes from the SRA Burdekin Plant Breeding Program and has shown to be suited in the Herbert to a wide range of soils types and environments but due to poor CCS we recommend that with its vigor it would be best

on the Herbert marginal country. Q253^Φ is resistant to the majority of major diseases in the Herbert including Smut and Pachymetra. It is however intermediate for Brown rust and this should be taken into account when considering this variety for planting. Material will be available from HCPSL in 2015.

Q252^Φ

2014 limited release Q252^Φ comes from the SRA Burdekin Plant Breeding Program and has shown to be suited in the Herbert to a wide range of soils types and environments but due to observations concerning smut infection rates, it is suggested that this variety be for the wet zone districts where there is lower smut pressure. Q252^Φ is resistant to Red Rot and Leaf Scald but is intermediate for Smut and Pachymetra therefore block rotation with a resistant Pachymetra variety is suggested.

For more Information on these varieties and others please visit QCANESelect via the SRA website at <http://www.sugarresearch.com.au>.

PROMISING VARIETIES FOR THE FUTURE

QN02-777 (QN86-2214 x Q200^Φ)

QN02-777 is a promising clone that could be released in the near future. Described as having "similar results as to Q208, it just has better canopy closure", this variety is intermediate for Pachymetra and Smut. QN02-777 has shown potential at all trial sites and in older SRA Final Assessment Trials (FATs), it has been observed to have some vigor. A possible decision concerning the release of this variety could be made at the 2015 Herbert Variety Adoption Meeting.

VISITORS TO THE HERBERT

During 2014 the Herbert cane industry received the following official delegations to view our industry practices first hand:

- 25th. June – Indian delegate Narendranath Mullapudi to discuss harvesting systems and variety exchange.
- 3rd. July – A Brazilian delegation to discuss Precision Ag Systems.
- 4th. July – A combined delegation from Brazil, Argentina and Columbia to look at harvesting and farming systems.
- 11th. September – Six delegates from Brazil (accompanied by John Deere) to discuss planting systems.
- 18th. September – Ramu Agricultural Industries from PNG visited to look at farming systems and equipment development.
- 10th. November – A visit from the Wilmar Myanmar agronomy staff.



A delegation from Brazil to discuss PA Systems

2013 HERBERT SUGAR INDUSTRY AWARDS

Award	Recipient
Grower of the Year (Sponsored by HCPSL)	Girgenti, Joe, Carmel, Eric & Matthew
Young Grower of the Year (Sponsored by QSL)	Grottelli Brothers
Mangrove Jack Award (Sponsored by Herbert River Catchment Group)	Education Queensland
QMCHA Harvesting Efficiency Award	Tokalon Sugar
Innovation Award (Sponsored by HRIC)	SnE Plant Hire
Farm Presentation Award (Sponsored by CAMECO)	Glen Irlam
Improved Farm Layout Award (Sponsored by Canegrowers Herbert River)	Wilmar Sugar Herbert
Consistent High Productivity (Sponsored by QSL)	Celotto, R, N, B, D & SE Kirkwood, RW Zatta, RV & G Cantatore, GL & M Marino, AS & KL Tua, ES & CM
R&D On-farm Co-operation (Sponsored by HCPSL)	Orazio & Anthony Marino Geoff Morley Stephen & Brendan Accornero Ian Kemp
Lifetime Achievement Award (Sponsored by HCPSL)	Roy Pace



“Grower of the Year” – The Girgenti Family



“Young Grower of the Year” – The Grottelli Brothers



“Innovation Award” – SnE Plant Hire

PROJECT NEMO

In October 2014, HCPSL signed up to manage a new three year project in the Herbert named Project NEMO. NEMO, or Nitrogen Efficiency Management On-farm, is an initiative of the state government, funded by the federal government. The aim of the project is to demonstrate and promote the use of efficient nutrient management practises and farming systems.

HCPSL Extension Agronomist Adam Royle will lead the project in the Herbert, which is also being run in the Burdekin by Burdekin Productivity Services, where a number of enhanced efficiency fertiliser (EEF) and farming system demonstration plots will be established across the district. These plots will be monitored and assessed over the next three years. Aligned with these demonstration plots will be several pre-existing and new soil health, nutrient management and water quality trials and demonstration sites.

While the main emphasis will be on those areas within the Herbert more prone to nitrogen losses, all growers will benefit through both on-site visits of demonstration plots, as well as through the hard data these sites will provide.

There will also be a rainfall simulation trial conducted under Project NEMO. This trial will be run in partnership with the State Department of Natural Resources and will compare fertiliser practices between mound and furrow planting systems.

To compliment these demonstrations, several workshops have been conducted with more grower workshops and information meetings, as well as a grower soil health field tour, being planned for 2015.



A demonstration trial will be conducted on the Roveda Farm as part of Project Nemo



THE HERBERT SUSTAINABLE FARMING SYSTEMS GROUP (HSFSG)

The joint Herbert – Tully Sustainable Farming Systems group met twice in 2014. The first meeting was organised and chaired by Tully Cane Productivity Services on the 24th March 2014 with four HCPSL representatives present. The second meeting, held in the Herbert, was organised and chaired by HCPSL on the 19th November 2014. Forty local and Tully based growers and industry representatives attended the November meeting.

Topics covered during the meeting held on the 24th March 2014 included –

- Phosphorus trials
- Pig control program
- Variety trials
- Pachymetra root rot survey
- Imidacloprid update
- Fertiliser practices in the Wet Tropics
- Paddock to Reef Program

Topics covered during the meeting held on the 19th November 2014 included –

- Enhanced efficiency nitrogen fertilisers
- Herbert Water Quality Monitoring Project (HWQMP)
- Project NEMO
- Target 85
- Legume fallows
- Local Grower Group project results
- Soil microbes studies



Enhanced efficiency fertiliser trials

CANE CLEANING TRIAL IN THE HERBERT INVESTIGATES WAYS TO REDUCE CANE LOSS

The Australian sugar industry has constantly sought to find a balance between effective cane cleaning and cane loss. With losses between 5-25 per cent this is a multimillion dollar cost to the Australian sugar industry.

At the start of this year's crush, Sugar Research Australia started a project titled *Increased Harvest Recovery: Reducing sugar loss and stool damage*. The key objectives are to:

- Reduce sugar loss at harvest due to extractor and chopper losses.
- Investigate alternative approaches for the harvest/transport/milling system.
- Understand the impacts of stool damage due to harvesting and promote options to minimise the effect on ratooning.

A local initiative addressing objective two, involved conducting a cane cleaning plant trial in the Herbert region. The trial commenced on 4th November 2014 with a collaborative effort between SRA, HCPSL, Norris ECT and Wilmar Sugar.

The aim of this trial was to evaluate the potential cost/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/milling scenarios. The treatments involved:

- Current practice (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).

The trial ran smoothly and SRA would like to thank the voluntary efforts of the harvesting crew, growers, Wilmar and HCPSL who helped make this complicated trial a reality. Data analysis is underway and the trial outcomes will be presented at the SRA and HCPSL harvesting forum on 5th May 2015.

IMPROVEMENT OF INTERNAL SOIL DRAINAGE AND YIELD ON HEAVY CLAY SOILS IN THE HERBERT

The Herbert consists of large areas of clay soils being sugarcane farmed within the region. These soils are usually nutritionally fertile, however yield potential is limited due to waterlogging. Surface drainage has been improved through laser levelling throughout the district, however yield potential is not fully realised due to limitations associated with internal soil drainage.

A trial was conducted at Vince Russo's Trebonne farm to investigate five methods to potentially increase internal soil drainage and cane yields. Methods assessed were:

- Conventional land preparation (including deep ripping)
- Mill ash filled slot on a preformed mound on GPS
- Mill ash broadcast
- Mound pre wet season and zonal tillage on GPS
- Bioactivate®, with conventional land preparation

The trial site was planted between the 4th and 5th of August, 2012 with KQ228[®].

The trial indicated that there is significant opportunities to improve cane and sugar yields on heavy clay soils in the Herbert region through the use of mill ash as a soil amendment. The use of mill ash was found to enhance germination and establishment of plant cane on difficult to manage clay soils. Even though the stalk numbers were not significantly different between both mill ash treatments and the conventional farming treatment, stalk weight and height was significantly different in both the plant and first ratoon crops.

The use of zonal application of mill ash to the cane row will reduce the costs when compared to broadcast applications of the product. The cost of transport from the mill will have a significant effect on the cost of the product, hence zonal application compared to broadcast application would be more viable as you move away from the sugar mill. The economic analysis clearly highlights the average gross margin was the highest with both the mill ash treatments. The analysis shows a clear financial benefit in plant cane and first ratoon cane for applying mill ash, in this trial. The average gross margin difference between the conventional tillage treatment and the mill ash treatments was significant and in this case the application of mill ash was cost effective.

The Bioactivate™ and BioBoost™ showed no significant difference in CCS, cane and sugar yield, when compared to the conventional treatment. This treatment had a 25% lower nitrogen and potassium fertiliser input than other treatments assessed, however input costs to purchase the products needs to be considered and are reflected in the economic assessment component of the report. The manufacturer of the two products suggest the benefits of the products will not be fully realised until into a ratoon crop. Up until the first ratoon crop there has not been a significant benefit from the Bioactivate™ and BioBoost™ when compared to the conventionally grown crop. Further research is required to investigate the benefits of Bioactivate™ and BioBoost™ in older ratoon crops.

The mound prior to the wet season was not significantly different to the conventional farming treatment in this trial. Observations in the Herbert region where mounding prior to the wet season has occurred and slower germinating varieties have been planted, there has been noted improvements in germination and crop establishment. The reason why this effect was probably noticed in this trial was due to the rapid germination and establishment of KQ228[®]. Blocks that are mounded during the fallow generally have a better soil tilth prior to planting, as was the case in this trial.

SRA AND JCU BIOCHAR PROJECTS

Biochar is the charred by-product of biomass pyrolysis, the heating of plant-derived material in the absence of oxygen in order to capture combustible gases. It is generally accepted that biochar is a highly stable form of carbon and as such has the potential to form an effective C sink, therefore sequestering atmospheric CO₂.

A SRDC/SRA funded Grower Group project was undertaken in the Herbert cane growing region between 2012 and 2014 to assess the impact of biochar and compost in a sugarcane farming system. The trial was conducted on a low cation exchange capacity soil in the Lannercost farming area west of Ingham. The JCU project is still ongoing and the results of this project will be reported at a later date.

A large number of studies (on numerous crops) have been conducted where biochar application has shown significant agronomic benefits, with a minor number of studies showing no significant effects on crop productivity and some studies reporting adverse effects (Sohi et. al., 2009). These results clearly suggest that crop productivity is variable due to a multiple number of reasons which are not fully understood. The mitigation potential of biochar with regard to other greenhouse gases, such as N₂O and CH₄, through its application to soil is less well established and requires further research (Sohi et. al., 2009). In this particular trial there were no significant difference in levels of greenhouse gases measured for the various treatments accessed.

In the trial conducted for this project, there was no significant cane productivity (being measured as cane and sugar yield) or economic advantage from applying biochar. The only way biochar may become viable is if a carbon market is established. The economic value of sequestered carbon is still being researched and debated in scientific and political arenas, so while this is occurring it will be challenging for biochar to be economically viable based upon the results from this trial. If biochar is to be considered as a part of a carbon sequestration program, a whole of carbon life cycle analysis will be required to better understand the carbon pathways and potential loss mechanisms.



Biochar application

NEW SMARTCANE BMP PHONE APP EASES GROWERS RECORDING KEEPING REQUIREMENTS

Since the commencement of the Smartcane BMP program back in December 2013, CANEGROWERS have received a consistent message from growers that record keeping was both onerous and a major barrier to achieving Smartcane BMP accreditation. So CANEGROWERS decided to explore a number of ways to resolve this challenge, firstly by developing a paper based Smartcane record keeping manual which is freely available to members and non-members from district offices and is also available online on the Smartcane website where you can enter records and save them to your computer.

But this was only part of the solution as there needed to be a better way for growers to record what they do when they do it. So over the last 12 months CANEGROWERS embarked on the development of a Smartcane BMP phone App. The App allows you to collect and upload your records using your phone and is linked directly to your Smartcane BMP account and automatically updates your records as you record them.

The App supports the following recording keeping operations;

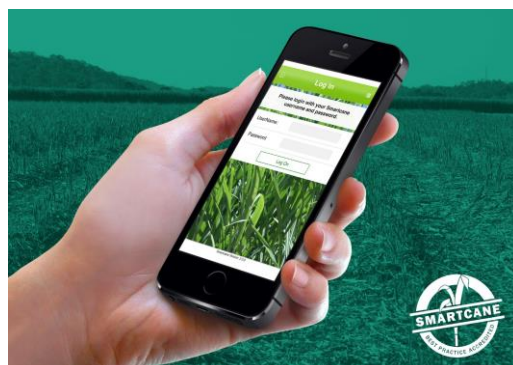
- Ameliorants
- Chemicals
- Cultivation
- Fertiliser
- Herbicides
- Irrigation
- Calibration Fertiliser
- Machinery Service

Record keeping not only provides important information for you as a grower to better manage your farm but can also provide important information in supporting you towards accreditation in the Smartcane BMP program.

It is important to note that all records are securely stored and treated confidentially and are not disclosed to any third party, unless requested to do so by the grower.

Best of all you can download it right now from Google play for Android and the iTunes App store for Apple. Simply get online, type in "smartcane records" and you can get it right now for free.

There is one expectation – you need to be registered for Smartcane BMP – so if you're not – get online, type in www.smartcane.com.au and register or contact your local Smartcane BMP facilitator to get going.



GAME CHANGER IN THE HERBERT

Terrain NRM is managing the delivery of the Australian Government funded "Game Changer" Project in the Wet Tropics Region.

The Project seeks to support sugarcane farmers across three regions, Wet Tropics, Burdekin & Mackay/Whitsunday to develop & test "next generation" practices to reduce residual nutrient & herbicide loads running off farm. The Partners contracted by Terrain in the Wet Tropics Region are Herbert Cane Productivity Services Ltd, TRAP & Mossman Agricultural Services. In the Herbert there will be a total of seven projects with four projects well underway at the moment & the remaining three to be commenced in the next couple of months.

Control Release Fertiliser Trials

Urea is compared with Control Release Products. The rates in which the products are applied are listed in the below table. This Project is also linked with the Demonstration Farm #2 Project. The link with the Projects allows us to sample the paddock run off, as well as monitor the in-crop differences. Some results for the Project are displayed on Page 11.

	Treatment 1	Treatment 2
Plant Rate	120 kg N/ha	120 kg N/ha
Ratoon Rate	160 kg N/ha	160 kg N/ha
Product	Conventional urea based fertiliser	Enhanced Efficiency Fertiliser
Reasoning	The rate applied has been based on the 6ES guidelines	Treatment 2 is identical to Treatment 1 except that the conventional Urea has been replaced with Agrocote (EEF)

Corn as a Rotational Crop

At harvest there were no significant result differences between the corn fallow & the normal fallow when comparing TCH or TSH. Economic analysis is currently being undertaken and will show if this practice gives better returns.



Corn Header (Harvester)

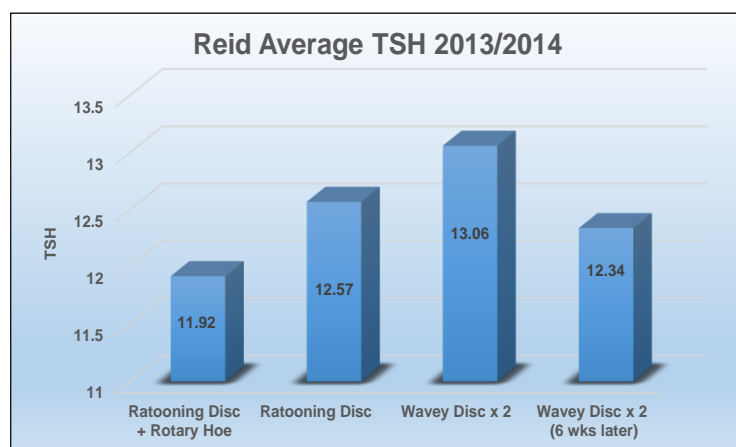
Minimal Cultivation

Three different types of cultivation were used in preparation of a block before planting with dual row DD opener billet planter. This block had been under dual row control traffic. After spraying out of old ratoons, cowpeas were planted through trash and these were sprayed out prior to cultivation.

The cultivation methods of bed were -

- 2 x Wavey Disc
- Disc bed renovator & ripping
- Disc bed renovator , ripping & Rotary Hoe

The Results for 2013 and 2014 are currently being economically analysed.



Sodic Soil Treatments

These ameliorants were applied post planting directly over stool, concentrating product in the growth zone of the cane. This project will be continued on, with the results compared & analysed yearly.

2014 Summary

	Trt 1 Min Plus @ 5t/ha	Trt 2 Gypsum @ 6t/ha	Trt 3 Dolomite @ 6t/ha	Trt 4 Control Nil Treatment
Average CCS	16.4	16.4	16.25	16.42
Average T/C	56.83	70.43	66.06	65.52
Average T/S	9.3	11.55	10.73	10.75

The remaining three projects will be implemented this planting season, so we will have more results this time next year.

DEMONSTRATION FARM #2

2015 will be the final year for this P2R2 trial site. Commencing in 2013, the Herbert Demo Farm #2 site was established to compare run-off losses of conventional urea based fertiliser with enhanced efficiency fertilisers (Agrocote) in a sugarcane farming scenario.

Water Quality Sampling

With yet another dry end to 2014, no run-off samples were collected during the last half of 2014. Monitoring for run-off losses will continue in the first half of 2015. Due to technical issues with sampling equipment, most run-off water samples taken in the first half of 2014 were collected manually. These results are still being analysed and collated but will be available to all project and industry stakeholders during the course of 2015.

Harvesting

Biomass samples were taken to monitor crop growth at three different periods in January 2014, May 2014 and again in August 2014. The site was then harvested with a commercial contractor on the 20th August, 2014. Harvest results indicate there was no significant difference in CCS, cane and sugar yield between the two treatments. The results from the biomass sampling are still being analysed and will be available to industry later in 2015.

2014 Harvest Summary

Trial Averages	Conventional Urea Treatment 160Kg N	Agrocote Treatment 160Kg N
CCS	12.70	12.45
TCH	71.13	71.18
TSH	9.03	8.86



Soil core samples were collected in 2014 to establish nutrient levels throughout the soil profile



Re-establishment of the Demo Farm #2 site post-harvest 2014

RAINFALL SIMULATION TRIAL

The Queensland Department of Natural Resources and Mines and HCPSL worked together to conduct a rainfall simulation trial to assess nutrient losses in plant cane. There was a knowledge gap in relation to the amount of nutrients lost from a plant cane system in the Wet Tropics area. The 2014 trial was undertaken on a sandy loam soil on the HCPSL Macknade farm. The trial was a mound planted with Q240[®].

The trial compared the following treatments:

- No fertiliser (as a bench mark)
- Fertiliser on top of the row (to simulate a side dressing application)
- Fertiliser applied at planting sub-surface (common industry practice for plant cane)

The rainfall simulation occurred at three time intervals: 7, 20 and 55 days after planting. The results for this trial will be made available during 2015.

It is planned to undertake another rainfall simulation trial in 2015 to assess nutrient losses associated with different planting methods (being mound and furrow planted systems) on a heavy clay soil. This work will be undertaken as a part of Project NEMO. This research will assist the industry better understand and manage nutrients applied to a plant cane crop, while minimising the potential for nutrients being exported from the farm.



The Rainfall Simulation Trial

HERBERT VARIETY PHYTOTOXICITY SCREENING

12 varieties, Q208[♂], Q226[♂], Q232[♂], Q237[♂], Q240[♂], Q242[♂], Q247[♂], Q250[♂], Q252[♂], Q253[♂], Q255[♂] and QN02-777 were screened against 12 herbicides of herbicide combination in a replicated small plot trial at Macknade Research Station. The herbicides used and treatment times are as follows:

Pre-emergent application:

Krismat® @ 2kg/ha, Stomp® Xtra @ 3.3L/ha + Atrazine @ 2.2kg/ha, Gesapax Combi® @ 8L/ha, Balance® @ 200g/ha and Metolachlor 960 @ 2.7L/ha

Early spike stage:

Flame® @ 400ml/ha + Paraquat @ 1.2L/ha, Soccer® @ 2.2kg/ha, Dinamic® 700 WG @ 1kg/ha, and Bobcat I MAXX @ 3.84L/ha + Paraquat @ 1.6L/ha.

Over the Top when cane was 60cm tall:

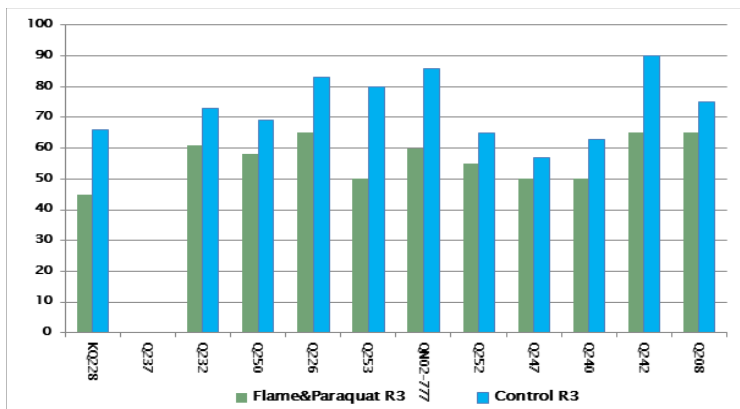
2,4-D advance 700 @ 31.L/ha, Actril® DS @ 1.5L/ha and Asulam® @ 8.5L/ha + Actril® DS @ 1.5L/ha

NB. Dinamic 700 WG and Bobcat I MAXX are two new herbicides being evaluated and are both going through the registration approval process with APVMA.

SUMMARY OF RESULTS TO DATE

There were no adverse growth impacts or phytotoxicity symptoms noted for any of the varieties in the trial with the pre-emergent application of Gesapax Combi®, Stomp® Xtra, Metolachlor 960 or Krismat®. Several varieties including Q226[♂], Q232[♂], Q250[♂], Q252[♂], and Q253[♂] exhibited leaf bleaching and yellowing to their leaves from Balance® for up to 6 weeks after cane emergence and reappeared after a significant rainfall event occurred.

All 12 varieties exhibited some phytotoxicity symptoms from Soccer®, Flame® and Bobcat I MAXX when applied at the 3 leaf stage for 8-10 weeks after application. While the plots treated with Flame® and Bobcat I MAXX grew out of the leaf discolouration, the following varieties Q226[♂], Q232[♂], Q240[♂], Q242[♂], Q252[♂], Q253[♂] and QN02-777 were significantly shorter in height than the control (unsprayed plots), 17 weeks after application. Over the top application of the phenoxy herbicides did not adversely affect any variety in the trial. Typical leaf mottling was noted on all varieties from Asulam®, however no height differentials were noted. Further screening of the sensitive varieties in relation to optimum water rates, product application rates and application methods will occur in 2015.



Flame® Effect on Variety Height

SPOT SPRAYING RECOMMENDATIONS

Guinea grass/Hamil grass, Para grass plus a range of other grass and broadleaf weed species and vines are routinely managed on farms with high volume "Spot spraying". With the restrictions on the use of diuron and diuron based products in the wet tropics, a screening trial was conducted to screen a range of herbicide products and mixtures for the control of Guinea grass and Para grass in a first ratoon crop of Q200[♂]. The effectiveness of control plus the phytotoxicity effects of the herbicides on the cane crop was also assessed.

Spot Spraying mixtures

Target plants should be well established, not stressed and actively growing.

1. Glyphosate 1L/100L spray tank volume - Guinea/Hamil grass plus other grasses (**Will damage cane on contact**)
2. Daconate® 1L/100L spray tank volume – Guinea grass, Green Summer grass, Vasey grass and Sorghum. Will work under hot dry conditions (**Minimal damage to cane**)
3. Daconate® 1L + Flame® 200ml/100L of spray tank volume – Guinea grass and Para grass (**Will damage cane with excessive contact in the growing point**)
4. Daconate® 1L + Balance 50g/100L of spray tank volume – Guinea grass and Para grass (**Will cause some cane damage**)
5. Balance® 200g/100L spray tank volume -Guinea grass and Para grass (**Will damage cane with application covering the growing point**)
6. Daconate® 1L + Krismat® 2kg /100L spray tank volume - Guinea grass and Para grass (**Minimal damage to cane**)
7. Asulam® 2L + Actril® DS 200ml/100L spray tank volume – Para grass, other perennial grass and vines (**Minimal damage to cane**)
8. Velpar® K4™ 1kg/100L spray tank volume – Guinea grass and other perennial grass (**Will cause some cane damage**)
9. Tordon™ 75D 300ml + 2,4-D 150ml/100L spray tank volume – Sickie pod and other vines and broadleaf weeds (**Generally no cane damage observed**)

Seek advice from your HCPSL extension agronomists on the mixture for your weed management task being undertaken.



Spot spraying showing guinea grass control and cane reaction

Yellow Canopy Syndrome (YCS)

It was difficult to find any block in the Herbert that was not affected by YCS at one stage or another during 2014. Once again, February through July saw “waves” of YCS move across the district. By the end of 2014 every subdistrict had been impacted with KQ228^h and Q200^h seemingly the worst affected varieties.

Despite the resources and effort that was dedicated to YCS, the industry still has no answer to the YCS riddle. Trying to find the cause of YCS is probably one of the most challenging issues facing industry researchers. Compounding this is the fact that we can't learn from overseas experiences because the syndrome has not yet occurred in any other major cane growing industry.

In May 2014, SRA announced an investment of \$4 million dollars into YCS research over the next 3 years. Three specific projects were initiated to work on YCS, two of which will be led by SRA and another by the University of Western Sydney. Both Burdekin and Herbert Productivity Services Groups are also partners in these projects and continue to work closely with SRA.

SRA and HCPSL staff have established field trials in the Herbert to assess various chemicals such as soil fumigants, fungicides, insecticides, miticides, sunscreens and plant hormones in relation to crop stresses. This research will hopefully assist us to identify the causal agent and develop possible tools to assist in the management of the syndrome.

There will also be considerable research into crop monitoring through field experimentation, crop surveys, remote sensing, attempting to quantify yield loss and CCS impacts caused by the syndrome.



KQ228^h on the right severely impacted by YCS and YLS (Yellow Leaf Syndrome)
Q183^h on the left has little YCS and no YLS
Hawkins Creek September 2014



HCPSL and SRA staff working on YCS sampling

Pachymetra Root Rot and Nematodes

Several soil sample tests were submitted for Pachymetra and nematode testing in 2014. While some returned negative test results, the general level of Pachymetra is on the rise. Nematode levels are a little more difficult to assess but they too were under the spotlight during 2014. Varietal selection will be key in controlling and minimising the effects of these soil borne pathogens.

Ratoon Stunting Disease (RSD)

During 2014, HCPSL hot water treated 110 tonnes of seed cane and conducted approximately 660 seed inspections resulting in 25 samples returning a positive for RSD. Combined with the extra resources HCPSL has allocated to increasing the size of their approved seed plots, the industry is well on the way to minimising the impact RSD has historically had in the Herbert.

Feral Pigs

The success story of 2014 was the decline in feral pig numbers and subsequent crop damage. A lot of work has been carried out by HCPSL and the Hinchinbrook Shire Council over the past several years to control the pig problem. Further funding was secured in 2014 to continue this work.

Rats

Moderate levels of rat damage was seen across the district in 2014. The most severe damage was found in blocks adjacent to harbourage areas and in poorly established cane crops. Poor crops allowed grass weeds to establish, providing protein for rats to successfully breed and multiply. Baiting was mildly successful and growers are urged to monitor and bait rat populations in the coming season.

Canegrubs

An increase in the usage of imidacloprid during 2013-14 has kept grub numbers in check for the majority of growers. In late 2014, some areas experienced moderately large greyback beetle flights, which will have an unknown effect on the 2015 crop. Imidacloprid will again be a valuable tool in controlling canegrubs in 2015. HCPSL reminds growers that liquid imidacloprid products require a minimum of 100mm of soil cover during application.

HARVEST MANAGEMENT

Harvesting systems once again performed well with the exception of some communication issues with the Next G system preventing data transmission until machines migrate into coverage areas.

The season finished reasonably well however there were a few cases where once again manual remains figures provided to mill personnel were not accurate. The GPS technology is simply a system to manage the harvest however the cooperation of the farmers and contractors is necessary for sensible harvest finishes. With the season impacted by low yields, some groups finished up cutting large areas per day to finish, resulting in long hours in the field and the associated issues involved.

The crop overall had the same yield as 2013 – being a disappointing 74.41 tonnes per hectare. The crop was disappointing particularly as we had around 2500 hectares of new ground under plant cane. The cut to estimate figure finished up at 99% and (although it fell away in the last week) was remarkably stable throughout the season. Unfortunately the number of harvesting groups is not adequate for such small crops and the short seasons put a lot of pressure on both machinery and men.

HCPSSL has worked hard to implement and improve this system and can be proud that we achieved so much with so little. 2015 will see a carefully planned transfer of the management and maintenance of this HMS system to Wilmar. The costs of running the system into the future would have been prohibitive for HCPSSL and was an important factor in the process. Please support Wilmar and the operators of the Harvest Management System.

PRECISION AGRICULTURE

The GPS Base Station network has been the catalyst for the rapid adoption of Auto Steer by the Herbert growers. It is now being adopted by the Harvesting sector with nearly a third of the Herbert cane harvesters now utilising this technology for improved efficiencies and it would appear that it has now reached critical mass in harvesting.

The district has become quite dependent on this technology and the GPS Base Stations in the Herbert are now ageing and at a point where HCPSSL is starting to replace the components. A replacement schedule for our five Bases and seven Repeaters has been presented to the HCPSSL Board and over the next few years we will see new GPS components installed to ensure the ongoing reliability of the network.

To date most of the round GPS receiver antennas will be replaced by the start of 2015 as part of the replacement program. Several new 25 Watt – 35 Watt radios were also installed at the start of 2014, with more planned for 2015. This is quite a complex process and involves setting up the correct configuration so that they talk to and integrate with the existing network. This program will be ongoing over the next few years and it is expected that the entire original GPS base station network will be replaced with new gear by 2018.

Unfortunately the Abergowrie Base Station was struck by lightning in December with predictable catastrophic damage to the equipment. New components will be installed in 2015 and insurance claims will hopefully cover some of the costs.



Mike Sefton & Vince Castellani inspecting lightning damage to the Abergowrie Base Station

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

An audit of the base stations in March 2015 by GPS consultants, Position Partners saw some firmware upgrades installed. The base network was tested and declared to be set up to best practice and operating at 100% efficiency.

Position Partners recommended a change away from the current GPS language CMR+ to RTCM3, although some of the older GPS systems cannot use RTCM3.

Farmers, planting contractors, agricultural contractors and harvest contractors have continued to invest in Auto Steer and the Herbert is starting to see the benefits of Precision Ag. The foundations are now in place for a PA transformation to take place as rapidly as the rollout of autosteer and HCPSL plans to leverage the existing investment for rapid Precision Ag support structures.

Controlled traffic farming and product application are one of the measurable benefits of this technology. It is now evident it is a way of reducing compaction, costs of cultivation and application to affordable levels as opposed to broad acre.

Evidence is emerging that controlled traffic farming has the potential to increase yields by up to 20% with the added benefit of improved environmental outcomes. This and other initiatives such as Variable Rate are the future of PA.

Recommendation - Standard Drill Spacings in the Herbert

For efficiencies in growing, planting and contracting, please use 1.68m, 1.70m, 1.83m or 1.90m.

We ask growers to use only one of the four row spacings. Growers should consider matching row spacing and machinery to achieve a controlled traffic system.

Issues

At various times, the GPS system does not perform well enough to steer off. In other words it is difficult to get a fix or there are drop outs. Some explanations of these are –

- Trees
- Using a base too far away
- Solar Flares – www.solarwarning.com
- Unstable individual satellites
- Old radios starting to drift off frequency
- Hardware issues in the Base or tractor
- Tractor and base have different settings – not talking
- Faulty cables/moisture
- Unexplained occurrences – Atmospheric or satellite constellation configuration by the USA – www.navcen.uscg.gov
- Interference from non-licensed radios
- Operator error
- Data overload or buffering
- Low number of visible satellites
- Storms and very hot and humid conditions

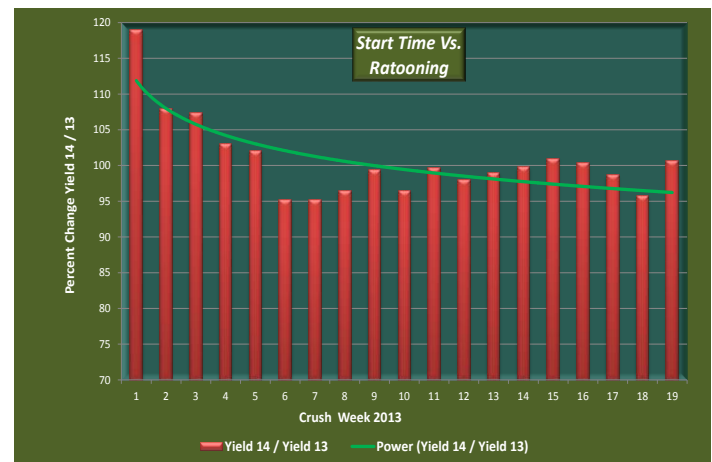
Note – As we transition to the new generation Base Stations which provide a clearer signal, some of these issues may become less noticeable.

Important – Before purchasing a GPS for a tractor, growers need to undertake proper research. This will include asking growers or contractors who already own the various systems, what their performance is like. Other considerations are if their system will work well with the current base station network or if they need to buy their own base station.

PRECISION AG DATA ANALYSIS

Delaying the season to maximise CCS is a consideration faced by the industry each year. It is a fine balance between risk and reward, with CCS reductions and storms at the tail end of the season and subsequent impacts on ratooning, all considerations. New analysis of whole of mill data and in particular ratooning impacts is supporting previous field trials and growers' observations. It is showing that the ratooning benefits of starting earlier far outweigh any gains in CCS from starting later. They also mitigate the risk of harvesting in the wet. More work will be done surrounding this type of analysis over different years and crushing scenarios.

The graph below shows time of harvest impact on subsequent ratoons.



Much has been written in the HBP manual on harvesting, why pour rates are increasing and the complex nature of the harvesting sector and interconnected supply chain issues. Sustainable harvesting and season length, along with YCS are some of the issues that should be at the top of the Industry's productivity agenda for 2015.



New Pinnacle Hill Base Station located on Reid's property

In previous years Cane Productivity Initiative (CPI) forums had been run two or three times per year and had followed the traditional grower style meetings. In recent years this format has changed to include field tours and workshops and 2014 was no different.

Grower Walk & Talk Day

Despite being a recent addition to the CPI calendar, the Herbert Walk and Talk day has become a popular event and 2014 was no exception. Despite average weather conditions, 146 growers and industry representatives attended the event. Held on the 1st April 2014, the 2014 Walk and Talk Day was conducted at two different infield locations with a free bus service transporting growers to and from sites.

Regional Variety Trial (RVT)

RVT trial leader Sam Sellick from HCPSL and Heidi Clements and Rod Fletcher from SRA discussed the introduction and benefits of the regional variety trials (RVT). Funded and run as a collaborative agreement between HCPSL and SRA, these RVT trials will be used to test advanced experimental varieties on different environments across the Herbert and will complement the current SRA variety trials.

Macknade Research Station

While Glen Park from SRA discussed farming systems trials based on the Macknade research station, Dave Olsen, also from SRA gave attendees a rundown on the current status of yellow canopy syndrome (YCS) and what research is being conducted.

Grower Forums

A more traditional style of CPI meets were held on 22nd. and 23rd April 2014. Meetings were held at Macknade Research Station, Helens Hill School, Stone River Hall, Abergowrie Farm Centre and the HCPSL office. Approximately 120 growers attended across the five meetings with the following topics discussed -

- Demo farm project
- NRM plan
- Results from the HWQMP
- Enhanced efficiency nitrogen fertilisers
- New varieties

Grower Workshops

Round three of the CPI was conducted in conjunction with project NEMO and consisted of a series of workshops and follow-up information meetings targeting both nitrogen and herbicide management in subdistricts prone to higher losses. Approximately 50 growers attended the workshops and meetings.



Herbert Walk and Talk Day



Glen Park discussing farming systems trials at Macknade



Grower Forum held at Macknade



Grower Forum held at Abergowrie



Wet Tropics Sugar Industry Partnership

Management Committee

Joseph Marano (Chair)
Lawrence Di Bella
Peter Lucy
Peter Sheedy

Partnership Membership

Canegrowers Mossman	Canegrowers Tablelands
Canegrowers Cairns District	Tully Sugar
Canegrowers Innisfail	ACFA Innisfail
Canegrowers Tully	ACFA Herbert River
Canegrowers Herbert River	HCPSL
MossAg	TCPSL
SRA	QDAFF

Principal Contractor

Canegrowers Herbert River Peter Sheedy

Extension Leader

Canegrowers Herbert River Don Pollock

HCPSL AND THE WET TROPICS SUGAR INDUSTRY PARTNERSHIP

Herbert River growers have been presented with an opportunity for additional farming systems extension support via HCPSL and the Wet Tropics Sugar Industry Partnership.

This program is an alliance across the Wet Tropics of key industry groups and extension and training providers to deliver professional, targeted and coordinated support for farm practice change, targeting water quality improvement, but not losing sight of farm productivity and profitability.

The overall partnership is CANEGROWERS, ACFA, milling companies and extension and training providers including SRA's professional extension and communications unit, local productivity services groups, and QDAFF. Private extension service providers such as Farmacist Pty Ltd are delivering training.

HCPSL is delivering this extension service in the Herbert. Alex Peachey has been appointed Extension Agronomist. The Herbert program will focus strongly on farm nutrient and weed management plans, assisting growers in improving nutrient use efficiency and herbicide program efficacy.

HCPSL is also contracted via WTSIP to develop and deliver fee-for-service Integrated Weed Management training workshops. This has enabled HCPSL and the district to use the on-going weed management expertise of Ash Benson following his retirement from HCPSL.

As Herbert growers well know, sugarcane production in the Wet Tropics is scrutinised because of the intensity of crop production inputs, past modification of landscapes, and close proximity to the Great Barrier Reef.

The training and extension program is aimed primarily at improving the effectiveness of the Reef Rescue and Reef Water Quality Program project grants, supporting practice change to maximise the reduction of sediment, nutrient and pesticide loads in downstream drainage water resulting from farming.

WTSIP training and extension funding runs initially for two years, through to June 2016. For further information contact HCPSL.

REEF WATER QUALITY GRANTS (RWQP)

The Reef Water Quality Grants aim is to reduce the discharge of **nutrients, sediment and pesticides** into the Great Barrier Reef lagoon by increasing the voluntary uptake of improved land management practices by landholders within the Great Barrier Reef catchments.

Terrain NRM along with industry partners, on behalf of the Federal Government are responsible for delivering the grants across the Wet Tropics region, and have again offered grants to assist farmers who met the criteria for the period 2015-2016. The final round of the successful water quality grants programme has now closed.

Wet Tropics farmers had their last chance to access grants through the Australian Government's Reef Programme to improve land management practices to help reduce the runoff of nutrients, sediments and pesticides from agricultural land into the Great Barrier Reef lagoon.

Terrain's Reef Programme Manager, Deb Bass said, "The previous seven rounds of the Programme have seen a significant commitment from over 1,000 Wet Tropics farmers who have improved their land management practices through minimising soil disturbance, reducing rate and application of residual herbicides and fertilisers through the purchase of specialised equipment, and by fencing off river banks, to name a few."

"By matching the grants with their own investment, not only have farmers proven their commitment to the health of the reef, but many have benefited with implementing more efficient systems on their farm resulting in more sustainable production."

A total farmer/Australian Government combined investment of \$50m has been injected into farms in the region to improve the health of the Reef as a result of the last seven rounds of the Programme.

For the Herbert region, the cane industry's Grants Officer is HCPSL's Linda Di Maggio who can be contacted on 47765660.



A Bed Former obtained through the Reef Rescue Programme