

# Grower Update

ISSUE 22 – JUNE 2016

Welcome to the June issue of our BPS newsletter. We hope you find the articles contained in this issue informative.

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**BPS AGM**

**AUGUST 23, 1.30 pm**

**AYR SHOWGROUNDS HALL**

**GUEST SPEAKER DR ANNE RAE (CSIRO)**

**“SUGARCANE ROOT SYSTEMS; WHAT’S GOING ON UNDERGROUND?”**

## BPS ACTIVITIES

During this term, staff have been very active conducting the annual RSD survey. In past seasons, farms from each mill area were sampled once every 2 years, with blocks containing later ratoons targeted. Generally, each year one ELISA sample (juice extract) from 4 sticks of cane, was taken from one block on every farm in the 2 mill areas being surveyed. Sometimes, depending on the age of ratoons, two samples were taken from a farm. The following year, the other two mill areas were targeted and so it would alternate annually.

However, after returning several positive RSD results last year, it was decided to sample all four mill areas in 2016. Further confounding the RSD sampling process was the decision to trial a new RSD sampling procedure known as Leaf Sheath Biopsy (LSB) alongside the standard ELISA method. In addition, the ELISA sampling was bulked up to include four samples per block rather than one (16 sticks rather than 4). On over 250 blocks, ELISA and LSB samples were taken from the same sticks of cane, so that a direct comparison of the two methods could be determined. Separate sampling utilising either method was then conducted on remaining farms.

To date over 4700 individual RSD samples have been taken by staff. This compares to an average of 1000 in previous seasons. There are still a small number of farms that have to be sampled in the Invicta and Kalamia mill areas. These will be completed in the next few weeks.

From these numbers, all members can be confident that BPS remains very focussed on the core business of pest and disease control.

Early plant was also a busy time for staff as distribution plots had to be manned and plenty of plant source inspections (PSI) were required by members to ensure good quality cane was being propagated. PSI is a free service and all members are encouraged to contact their respective field officer for advice on plant source as well as varietal choice.

Planting of the Mother and Distribution plots at Inkerman was also completed during this term. Most varieties of cane destined for the Inkerman Mother plot was sourced from Minuzzo's Mother plot on Robertson's Rd, Ayr with the remainder coming from Duncan's Mother plot and Christensen's Isolation plot. All cane had to undergo cold soak - hot water treatment, so there was a lot of activity in the shed. As usual, the quality of product from these plots has been exceptional. Eddie and John Minuzzo, Ken Duncan and Bill Christensen are congratulated on behalf of all members, for doing an excellent job.

BPS staff have also helped out with the Burdekin Show cane competition.



## BMP EXTENSION BUS TOUR

On Thursday the 21st of June, local Burdekin BPS extension officer and BMP facilitator Terry Granshaw along with BPS Trainee agronomist Brendan Montafia and a group of local farmers travelled to Mareeba to attend the MSF Irrigation Open Day. The group travelled up to Mareeba by mini bus on the Wednesday, stopping in at Blenners' farm in the Upper Murray region south of Tully along the way.

The growers were impressed with Blenners' farming operations and the system that they have adopted. The farm produces 50 000 tonnes in a rain fed area and averages 110 tonne per hectare with above mill average ccs. They utilise 2 cm GPS guidance and have adopted a controlled traffic farming system of 600 mm dual rows on a 1.9 m wheel spacing. All crops are harvested green by a local contractor. Due to the size of the crop and the amount of bulk going through the machine, the harvester can only manage 5km/hr forward speed. The only modification to the track machine was a small elevator extension to reach the centre of the infield transporters. Blenner farms use soybeans as a fallow crop, the beans are direct drilled into the trash blanket via an airseeder legume planter. They are then incorporated into the beds and spelled before a double disc opener planter plants the next crop of cane.

In recent years compost was made and spread on ratoons. When composting can't be achieved, ratoons have chicken manure spread onto the bed to increase biology and improve soil health. Les Blennerhassett quotes *"I will never change from the controlled traffic system that we are on. The reduced km in paddock, extra ratoons and less turns on the headlands along with good drainage and reduced harvester speed complement this system. I have had no yield or ccs reduction from this system."*



The bus then travelled on to Mareeba where we stayed the night and in the morning made an early start towards Dimbulah to MSF's 2700 Ha of sugar farms. The day started with four presentations at different stations around the main pumping shed of one of the farms. The irrigation system on the first farm comprised two 65 Ha centre pivots with the remaining 97 Ha of the farm on subsurface drip irrigation. MSF irrigates the remainder of their farms via furrow irrigation with irrigation water supplied from SunWater channel systems. Major cane varieties are the same as the Burdekin and the crop was looking good. A newly developed storage dam is the main water supply for the pumping stations for the subsurface drip and the centre pivots. These pumping stations use variable frequency drive (VFD) motors and all the latest

technology to precisely supply the exact amount of irrigation water when the crop demands it. MSF use Irrigweb and various moisture probes to schedule and determine how much water to apply to the crop. Irrigweb is an online irrigation scheduling tool that is available to all Burdekin growers free of charge through BPS. Contact Marian Davis on 0428 927 079 for more details.

MSF's Trevor Crook (general manager for agriculture) spoke of all the good work their employees had put in to make both the irrigation system and the farming system work. Local Tablelands BMP facilitator John Barbetti, then spoke on the importance of being involved in the Smartcane BMP program and presented MSF with their Smartcane BMP accreditation certificate.

MSF's farms are all on controlled traffic under 2cm GPS guidance. Wheel spacings are at 2 metres with dual rows 700 mm apart. All cane is harvested green by a modified width track machine with a lengthened elevator to fill the centre of the transporters. The group were taken on a tour of the farms to watch the cane harvester in action. This harvest group cuts for 12 hours from Midnight to Noon with an average cut to crush of only 4 hours. The harvester also has telemetry that exports relevant data back to the harvesting operations manager including forward speed, fuel usage, extractor speeds, roller speeds and bin weight. Bin weight is determined from weigh cells on the transporters and bin number allocation is performed by the harvester operator. Whilst we were there heavily lodged KQ228 was being cut one way at a harvesting speed of only 2.6 km /hr. Surprisingly, even with this low forward speed, pour rates were very high. We then travelled to the mill to see the unloading of the 20 tonne semis into the hopper that fed the mill feed train.

All growers on the bus were impressed by the farms that we had travelled to and had nothing but praise for the trip itself. We would like to thank Les Blennerhassett of Blenner Farms and MSF's Rik Maatman and Damon Falvo for hosting the group over the two days. We would also like to acknowledge CANEGROWERS Smartcane BMP for the sponsoring of this trip.

Please contact your local facilitator Terry Granshaw on 0437 553 149 to register for the BMP program. BPS has also secured funding for another educational bus tour and those growers who may be interested are encouraged to contact Terry.



## NEW VARIETY – SRA8

A new variety has been released for the region by the local variety adoption committee under the new naming system – SRA8. This variety had an experimental number of QA01-5267, and was sometimes referred to as '5267' at shed meetings. BPS had planted SRA8 in its mother plots last year in anticipation of its release, so it will be planted in distribution plots this year for purchase in 2017. Limited quantities were available to plant in the 2015 mother plots, so we will stick plant all the distribution plots this year with SRA8 to maximise availability for members. Please note that availability will still be limited and SRA8 will be allocated on a pro rata basis.

Results from BPS strip trials harvested last year show that in two soil types (Delta clay loam, Barratta clay) SRA8 had better CCS than most varieties, however tonnes were a little lower. The third trial site (Airville) SRA8 outperformed the other varieties including Q183 in tonnes and CCS. These results are very similar to what SRA found in their small plot trials – generally SRA8 had above average CCS and average to slightly lower tonnes/ha. The BPS strip trials will continue to be harvested over the next few years. More strip trials were planted in 2016 with SRA8, and it was a fast germinator with quite a large root system compared to the other varieties when inspected at 6 weeks of age.

SRA8 is rated as intermediate-resistant for smut – this is the same rating as Q183 and Q208. Growers in areas with high smut pressure are advised to see how this variety performs in their field conditions. As with all new varieties, BPS recommends growers initially try a small area on your farm to see how it performs.



Top: Young plant cane

Bottom: Mature cane

## UPDATE FROM THE PLOTS

Demand for approved and commercial cane from the plots has been quite strong this year so far. Combined sales from all plots has exceeded 4000 tonnes for early plant. This is a good result when compared to last year when less than 2000 tonnes had been sold at this point in the season. The best sellers have been Q240 (1100t), KQ228 (1000t), Q183 (800t) and Q208 (750t) followed by Q232 (200t) and Q252 (110t) and Q253 (45t).

Those members who require late plant are advised to contact their respective field officer to confirm orders as some varieties are in short supply.

New variety SRA8 will be planted in the Distribution plots this year and will be available to growers next season on a pro rata basis. By season 2018, we hope to have larger quantities available at all plots.

## REMOVAL OF BPS SEED CANE SURCHARGE

A letter was recently sent to all members informing them of the removal of the \$4/tonne surcharge on seed cane, and the introduction of a \$2/tonne plot management fee commencing 2017. BPS currently conducts all plot administration (sales, invoicing, workplace health and safety, organising of contractors, insurances etc) on behalf of the 9 approved seed cane plot owners. A centralised system is more practical than expecting each plot holder to conduct their own administration, particularly plots owned or managed by individual growers who aren't as well-resourced as grower collectives. Hence, BPS continues to conduct all the administration on behalf of all the plot holders.

The \$4/tonne surcharge soon to be replaced by the \$2/tonne plot administration fee, is the **only** income BPS receives from plot sales. **100 percent** of all other proceeds from sales of seed cane and harvesting are collected by BPS, but are passed on to the plot holder and harvesting contractor respectively.

The surcharge was originally introduced many years ago to cover some administration costs, but also to insure against losses when hand cut seed cane was left uncollected at the plot after an unexpected rain event and also to cover extra hand cutting costs if the cane was lodged. During the last two years, costs to reimburse plot holders for losses relating to transfers of plot cane due to a smut plough out order and expenses incurred by BPS to conduct extensive RSD testing which was above and beyond normal testing requirements, have consumed well in excess of the \$4/t surcharge that has been collected.

However, BPS has decided to remove the \$4/t surcharge and introduce a \$2/t plot management fee as this more accurately describes the role in administration that BPS conducts on behalf of plot holders. If there are issues with crop loss from plots due to disease, weather or other unforeseen circumstances, BPS may review this fee, and/or draw on cash reserves to ensure that plot holders remain viable.

BPS is committed to allowing members access to high volumes of an approved seed cane, and we see this reduction in cost as a small but vital step in encouraging growers to purchase and propagate more of this important product. We also greatly appreciate the co-operation of each of the plot holders in making land available for this integral part of our industry.

## WHAT IS A G-DOT?

### G-dots are a great visual irrigation scheduling tool.

G-dots are made up of a display panel and gypsum block. The gypsum block is buried in the root zone of the plant and is connected by a lead to the display panel which is mounted at the edge of the block, for ease of viewing.

G-dots measure soil moisture tension which is how hard it is for the plant to extract water from the soil profile. Seven yellow dots light up on the display panel when the soil is wet, for example after irrigating. This indicates that the soil moisture tension is low, meaning it is easy for the plant to take up water from the soil. As the soil profile dries down, the soil moisture tension will increase (less yellow dots will be displayed on the G-dot) indicating that the plant is having to work harder to extract water from the soil. Stalk growth measurements are a good way to calibrate the G-dot so you know, for each soil type, when to irrigate.

BPS currently has G-dots for sale at a reduced price of \$150+GST per unit, capped at two per business. If you are interested in purchasing a G-dot or need assistance installing one, call the office on 07 4783 1101.



**Figure:** a G-Dot displaying seven lights, indicating a full soil profile of water

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## How To Install and Use A G-Dot

1. **Check equipment works:** connect lead to display panel and submerge gypsum block in water until the lights come on. This may take a few minutes but ensures the equipment is working prior to installation.
2. **Site selection:** select where you want to install the G-dot. Choose a part of the block which is most representative of the soil type and where it won't get misleadingly wet or dry. That is, it would be unwise to install it at the bottom of a block where water pools or very close to the top where it may wet up the most. The twenty metre lead makes it possible to walk in from the top of the block however it is preferable to go in from the side about halfway down a block. Make sure you go far enough into the block to avoid any edge effects.
3. **Install gypsum block:** when installing the gypsum block, it needs to be located in the active root zone. In cane, this is about 35-40cm from the top of the bed, however it is best to check by digging and inspecting roots. You may choose to install it 20-30cm in plant cane and take it out and install it deeper following hill up. To install the gypsum block, auger a hole beside the cane stool in the active root zone. We use a long 25mm drill bit or a soil corer. Insert the gypsum block into the hole

(in cane it can be inserted vertically, for use in small crops lay the block lengthways in the root zone)

4. **Backfill the hole:** mix bentonite or soil and water to make a slurry and pour around the gypsum block to back fill the hole. If you choose not to make a slurry, when back filling the hole make sure the soil seals around the gypsum block and is firmly in place (making sure not to put too much pressure on the gypsum block when packing down).
5. **Install display panel:** unroll lead and firmly connect it to the display panel. Mount display panel on the edge of the block for ease of viewing. You can do this by hammering in a post or stake and then zip tying the panel to it. The G-dot is now ready for use or calibration with growth measurements. If you completed step 1 the same day as installing, give the gypsum block a day to dry down before using the G-dot as an indicator.
6. **Calibrate and use:** once the plant is making cane, do stalk growth measurements to find out what number of dots are displayed when the block needs irrigating, this can vary with soil type. Use the G-dot to help decide when to irrigate. If you need help installing or calibrating your G-Dot, BPS staff are available to assist.

## AUTOMATION OF FURROW IRRIGATION - FIELD WALK

On June 9, a field walk showcasing automation of furrow irrigation was held at Russell Jordan's farm on Blacks Road. This site is one of three that has been established as part of an SRA funded project that is managed by NCEA in conjunction with local partners, AgriTech Solutions (Steve Attard) and BPS. The project aim is to demonstrate automation of furrow irrigation and quantify potential benefits in terms of improved irrigation management and efficiency, labour savings and reduced electricity costs.

Fifteen growers took the opportunity to learn more about the project, view the equipment that has been installed and ask questions of Russell and Steve. Unfortunately a channel shutdown meant that we couldn't see the system in full operation, but Russell was able to demonstrate opening and closing of valves via his phone.

For more information on the automation project contact: Marian Davis (BPS) 0428 927 079; Steve Attard (AgriTech Solutions) 0418 155 844; or Andres Jaramillo (SRA) 0475 973 282.



## ANNUAL GRUB FLIGHT 2016

On the 10<sup>th</sup> of June, BPS field officers Brendan Arboit and Ashley Wheeler, along with trainee agronomist Brendan Montafia conducted the annual aerial survey of cane grub damage within the Kalamia, Pioneer, Invicta and Inkerman areas. The flight was concentrated along the perimeter of the Burdekin and Haughton River systems as well as other areas that have traditionally shown to be more susceptible to cane grub damage. Identification of actual grub damage during this year's survey was a considerably tougher task due to dry down periods for harvest and severely lodged crops, so staff will follow up with on-farm inspections of any suspected grub damaged blocks of cane. Blocks with suspected grub damage were photographed and mapped using GPS.

During the flight, minimal damage was observed within the Kalamia, Pioneer and Inkerman areas and only a relatively small percentage of this damage was suspected to be from cane grubs. Most of the grub damage detected throughout the survey was within the Invicta area, mainly concentrated in the vicinity of Giru. However, no severely grub damaged blocks were recorded. Once suspected grub affected blocks (examples can be seen below) have been identified, growers will be contacted by the relevant field officer so that an on ground inspection can take place and eradication procedures can be advised.

When harvesting blocks, if any indication of grub damage is observed, please contact your field officer for a paddock inspection. Affected stools will appear to be sick and lodged and can be pulled out of the ground without much effort.

The visible reduction in grub damage can be attributed to a positive uptake in current grub control products. However, growers must ensure that they continue to treat and do not become complacent. When using grub control products always ensure label instructions are followed. For further information, please contact your local field officer or visit the BPS office.



Suspected cane grub damage observed during the aerial survey

## HARVESTER SPEED TRIAL UPDATE

In 2014, following feedback from growers, BPS was successful in receiving funding from SRA to conduct trials to measure the effect of harvester speed on yield and ratooning for the following crop. These trials are now entering the third and final year.

So far there has been no obvious effect of harvester speed on either the crop yield or levels of stool damage in the following crop. There are *some* indications that ratoon cane yield can be explained by the harvesting speed in the plant crop, however the statistical analyses have been largely inconclusive.

Changes to the treatments (harvester speed) between the two seasons have been largely responsible for the difficulty in analysing the results. The original design called for speeds of 7, 9 and 11 km/h, but for most of the plant cane crops the drivers were not confident of their ability to maintain a consistent speed of 11 km/h; so at most sites this treatment was replaced with a low speed of 5 km/h. In the first ratoon crops, faster speeds were possible; and heading into the second ratoon harvest it is expected that the 2015 treatments will be repeated (Table 1). Maintaining the same treatments will make the data analysis easier and show the cumulative effect of harvester speed.

Table 1: Harvester speed treatments

Site	2014 Plant	2015 1 <sup>st</sup> Ratoon	2016 2 <sup>nd</sup> Ratoon
1 – BRIA Q208	5, 7	5, 7	5, 7
2 – BRIA Q183	5, 7, 9	6, 8, 10	6, 8, 10
3 – Delta Q183	5, 7, 9	6, 8, 10	6, 8, 10
4 – BRIA Q183	5, 7, 9	7, 9, 11	7, 9, 11
5 – Delta Q208	5, 7, 9	7, 9, 11	7, 9, 11
6 – BRIA Q208	7, 9, 11	7, 9, 11	7, 9, 11

As well as the effect of speed on yield and ratooning, the impact on harvesting costs has been examined. During each trial a number of parameters were recorded to allow an economic analysis to be undertaken. The economic analysis of the 2015 data shows the same trends as in 2014. Generally fuel costs per tonne of cane tended to decrease as speed increased. The reduction in costs was greatest when going from a very slow speed, 5 or 6 km/h, to a slightly faster 7 or 8 km/h. After about 9 km/h the reduction in fuel costs were lower, and at some sites (2, 3 and 6) actually started to increase (Figure 1). This is likely to be caused by the interactions between speed, time spent waiting for haulouts/harvester and fuel consumption. Likewise, there was a trend for total costs per tonne, including wages, to decrease initially but to then flatten out or increase as speeds increased past 9 km/h. Again this is likely to be a combination of factors including time spent waiting for haulouts.

From the first two seasons' data it appears that harvesting speed may be having some impact on the following crop yield, but at this stage there is not a strong correlation. The economic analysis suggests that a harvesting speed of 8-9 km/h is the lowest cost at most of the sites.

BPS would like to thank the cooperating growers and harvesting crews as well as SRA who have conducted the statistical analyses and DAF who have provided the economic analyses.

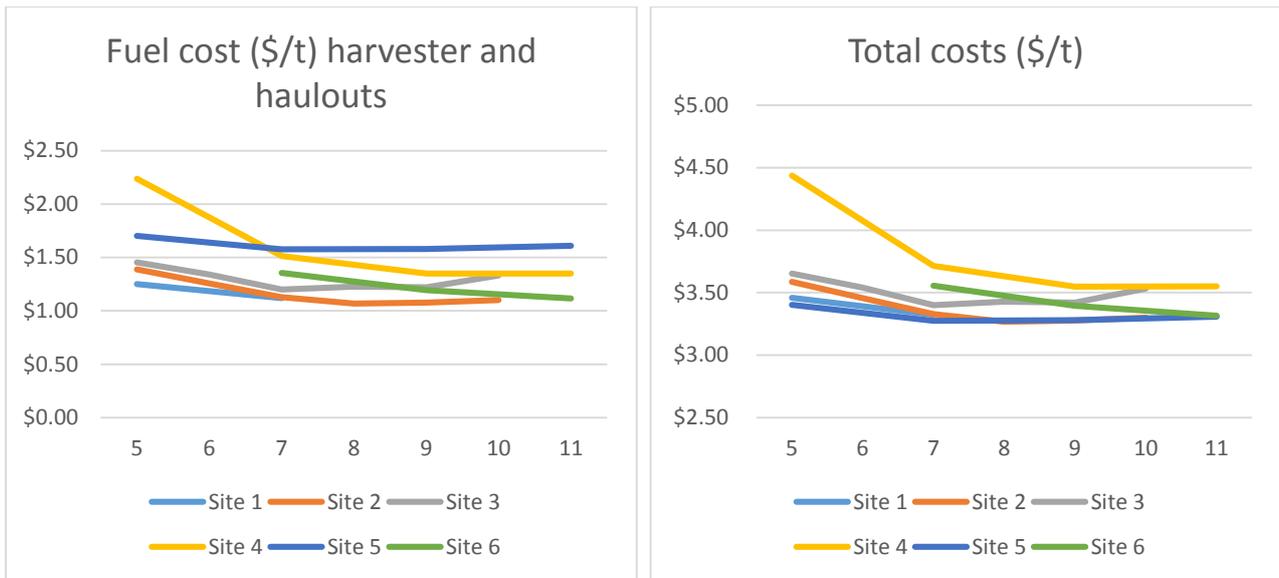


Figure 1: Economic analysis of fuel and total costs, combined results from 2014 and 2015

### RWUE-IF FUNDING STILL AVAILABLE

One of the components of the Rural Water Use Efficiency Irrigation Futures project is the financial incentives scheme (FIS). This scheme provides funding for growers to make changes to their irrigation systems to improve irrigation efficiency that will minimise deep drainage and reduce the volume of water contributing to groundwater rise. The financial incentives are available to all cane growers in the Burdekin Groundwater Management area as well as Millaroo, Dalbeg and Leichhardt.

Many growers have already taken advantage of the FIS to assist them with installing infrastructure that will allow them to irrigate more efficiently and reduce losses of irrigation water to deep drainage. Some of the projects that have been funded have been for new pipelines and risers to replace fluming; trickle irrigation as an alternative to furrow; and recycling systems to allow higher inflow rates to be used. Other potential projects could include: installing sensors and telemetry to remotely manage irrigation, automation equipment, and irrigation scheduling tools.

Projects are funded on a dollar for dollar basis, up to a maximum of \$40,000 per grower. For more information on the RWUE-IF program contact Marian Davis on 0428 927 079.



Improving irrigation management for a profitable and sustainable future



New pipeline being installed

## VEHICLES FOR SALE

For more information on these vehicles, or to make an offer, call Mark on 4783 1101 or 0427 834 800

2011 Isuzu D-Max 4WD. Diesel. Manual.

\$18,000 including GST (\$1636)

5 seater dual cab. 133,000 km. Air-con, bull bar, tow bar, UHF radio



2011 Holden Colorado 4WD. Diesel. Manual.

\$17,000 including GST (\$1545)

3 seat single cab. 68,500 km. Steel tray, bull bar, air-con, tow bar, UHF radio



## STAFF CONTACTS

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