



Funded by Burdekin Canegrowers and Wilmar Sugar

Grower Update

ISSUE 32 – DECEMBER 2018

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



The board, management, and staff of BPS would like to wish all growers and industry personnel a merry Christmas and a safe and happy New Year.

The BPS office will close at 4 pm on December 21, 2018 and reopen at 7 am on January 2, 2019.

This issue contains:

- BPS Christmas Message
- Crop Data
- Pest Update
- SmartCane BMP Update
- Cane Harvester Yield Monitors
- Variety Trial Results
- Upcoming Events
- Biosecurity
- Staff Contacts

BPS Focus Groups

BPS invites members to attend a focus group to discuss opportunities BPS could pursue to provide additional services and greater value for money for members.

Dates: January 15, 17, and 21

Time: 9 am – 10.30 am

Location – BPS Office, 210 Old Clare Road, Ayr

Please RSVP to: rmillia@bps.net.au

BPS CHRISTMAS MESSAGE

With 2018 drawing to a close, all BPS staff and members are looking forward to a well-deserved break after a year that has seen some challenges, opportunities and successes. I would like to thank the staff for their tireless dedication and effort in giving members the best possible service through variety distribution, pest and disease services, agronomic advice and extension, and field experiments and trials.

Over the last 5 years, BPS has significantly increased the level of service to members, some examples include:

- Greater volumes of approved seed cane sold through approved seed plots
- Increased RSD testing (over double the number of samples)
- Increased pachymetra and nematode surveys
- Increased mapping, rogueing, control and monitoring of itch grass and wild sorghum
- Increased pest monitoring on members' farms
- Introduction of commercial variety strip trials (now 10 sites across the district)
- Runoff water quality monitoring for members
- Crop nutrition trials (nitrogen, potassium, phosphorus, enhanced efficiency fertilisers)
- SmartCane BMP facilitation and support
- Assistance for access to various grants for members
- Increased on farm support for equipment calibrations, fertiliser and chemical recommendations and soil testing
- Provision of nutrient and irrigation management plans for members

All of the above has been achieved with no rise in levies during the last 7 years. None of the above could have been achieved without significant effort from staff and directors, nor the support and input of BPS members. I would particularly like to thank the BPS approved seed cane plot holders and associated contractors, as well as growers and contractors involved in various trials BPS have conducted over the last 12 months. Without the support of these growers and contractors the industry would not have access to the volume of approved seed cane, or data on crop performance specific to our region.

At a recent board meeting, discussions were held around how could BPS serve its members better. The directors and management would like to hear members' opinions on this matter, so will be holding some focus group sessions for members to provide feedback on opportunities that BPS may be able to pursue that would provide value for members. Please contact the office to register your interest for these sessions to be held in January 2019.

I would like to wish all BPS staff, directors and members the very best for the festive season, hope all have a safe and relaxing break, and look forward to a profitable and productive 2019.

Rob Milla

Manager

December 2018

CROP DATA

Once the crushing starts to wind down, BPS field officers begin collecting everyone's crop data. Some people may have already been visited by their field officer. Crop data is information about your farm for the current year that BPS records to assist managing risk in the district in relation to pests and diseases.

Practices recorded in our electronic system include:

- Fallow management
- Variety and plant source
- Use of approved seed cane
- Planting contractor, planting method
- Grub and other pest management
- Pest and disease incidence, location and amount of damage
- Soil amelioration

Why does BPS collect and record this information?

- Crop data allows us to understand the extent of pests and diseases in the area. In the past, when large numbers of rats have been reported we have been able to set up baiting programmes. We can also see if these management methods are having an effect. This is also the case for treatments used on the cane such as SuSCon and Confidor.
- Most importantly, if there was a disease found on a farm, we can determine who planted the block and test any farms that were planted directly afterwards. From the crop data information, the plant source for that block can be identified and also tested. This allows us to immediately isolate the source of the disease, and hopefully prevent an outbreak.

A recent example of where we were able to assist members in terms of specific pest advice due to accurate data collection was an instance where there was a new outbreak of itch grass. From our records, BPS was able to track the planting contractor, plant source, and harvesting contractor and inspect blocks that were involved in these operations to ensure minimal spread of itch grass.

How is the data used and is my information kept confidential?

- Overall reports are generated from the information supplied from collecting crop data and are presented at the BPS Annual General Meeting. **However** individual information is **not** disclosed to any third party.
- These records are a very important aspect of BPS' service delivery, and ensure that historical pest and disease incursions are recorded for future management.

A specific example of where this data was used in recent times was BPS obtaining a region wide permit for rat baiting, including aerial application. By providing aggregated data on the tonnes of cane and area affected by rats (based on data provided by members), BPS was able to obtain the district wide permit for use of registered products. In the absence of regional data it is likely that individuals would have to apply for permits, rather than BPS provide this service on members' behalf. We have also been able to provide data to funding and research bodies that justifies research into new methods of pest and disease control. For example, aggregated data on increasing levels of cane grub damage has been used to support research into alternative insecticides for canegrub control.

How is the data recorded at BPS?

- In most cases, the BPS field officer will collect your crop data face to face and record this information on a hard copy of your mill map.
- This is then transferred electronically onto our geographic information system, which allows us to report aggregated data without identifying individuals.

- It is important to emphasise again that individual data is not disclosed to any 3rd party.

Some confusion with allowing BPS access to Wilmar Data

During 2018, a letter was sent from Wilmar to growers asking for consent to share their data with BPS. All BPS members can decide if they would like to share their Wilmar data with BPS, however it is worthwhile providing some context around how BPS uses this data.

The Wilmar data refers to two separate aspects:

1. Map layer including variety and crop class information
2. Productivity data such as tonnes cane, CCS, soil type etc.

The BPS collected 'crop data' (referred to in previous paragraphs) is stored on our electronic geographic information system. This system uses the Wilmar map layer to record pest and disease incursion within an area e.g.: your farm or block. If a grower does not consent to sharing their data with BPS, then we cannot record pest or disease incursions for that farm with our current system. This may impact on the accuracy of records into the future, as well as the ability for us to manage pest and disease issues in the most effective manner.

Productivity data is used to generate all the variety performance reports available to members at shed meetings and other information sessions. If this data is not shared, then the information BPS provides back to its members will be incomplete and less accurate.

BPS understands that some members may have concerns around sharing of some of their data (particularly productivity information), so there may be the opportunity for growers to consent to sharing their map information only. Please contact any BPS staff member or management to discuss if you have concerns or questions.

PEST UPDATE – RATS, PIGS, COOTS AND WALLABIES

There has unfortunately been a reasonable increase in the amount of damage from rats, pigs, coots and wallabies in recent times. Based on data collected from members in early 2018, BPS estimates that these pests could have caused in excess of \$1.5 million of collective damage in 2017. Control options and assistance from BPS for each of these pests are detailed below.

Rats

BPS has successfully obtained a district wide permit for the use of registered rat baiting products in crop. The registered products that can be applied between 1st October and 30th June are:

- Rattoff
- Racumin
- ZP Rat

It is critical that your BPS Field Officer is informed when these products are used. Since BPS has a district wide permit for use of rat baiting products, we are responsible for keeping records of where and when the products are used. If the state government does not see these records being submitted by BPS, then the permit will be void and individual growers will be responsible for organising their own permits. Ratoff can now be applied aerially via helicopter or UAV where conditions do not allow for ground application and it must be in lodged cane. If using Ratoff sachets, it has been observed that the rats will be more likely to consume the bait if the sachets are coated in linseed oil as an attractant.

Pigs

BPS offers an aerial pig shooting subsidy, of up to 50% of the cost (to a maximum of \$750), if you organise an aerial shoot in conjunction with neighbours. BPS staff are also available to assist with pre feeding of

waste fruit for pigs prior to baiting. Contact Burdekin Shire Council for baiting assistance. Please contact your BPS Field Officer or Mark Rickards at the office if you would like be involved in this subsidy or other assistance.

Coots and Wallabies

Both of these cane pests are native species, which means a permit must be obtained prior to culling of these animals. The permit process is relatively simple, and forms can be downloaded from the Department of Environment and Science website at https://environment.des.qld.gov.au/licences-permits/plants-animals/native_animal_management.html. Ensure that you use the “Damage Mitigation Permit: Culling and Dispersal” form. These forms are also available at the BPS office and staff can assist with completion and provide a letter of support for members. BPS encourages growers to obtain these permits if these pest animals are causing damage.

SMARTCANE BMP UPDATE

SmartCane BMP continues to support growers with fortnightly registration and self-assessment workshops. Farmers are starting to see the benefits of participating in programs like SmartCane BMP, and the Burdekin now has over half of its growers (representing 61,000 ha or 75% of the area) registered and self-assessed. The fact that more growers are involved with BMP highlights all the good work that is getting done out in the paddocks. The general public are noticing as well, with accredited farm signs being displayed on sheds and out the front of farms.

Just on 13,500 ha have been accredited and Jasmine and Terry are working with another 50 growers to help them become accredited in the three core modules. John Arrate and his family are just one of seven farms that have recently been accredited.

John (right) works the farm on days off from his mining job. Through the BMP program and extension advice from BPS, John has measured all of his pump flows and calculated how many mm/ha he is applying. IrrigWeb has helped him to schedule and record his irrigation and rainfall events. John hopes to further improve his irrigation efficiency in the future by joining underground pipelines up on the farm. John has always taken soil tests in the fallow and applied the relevant recommendations to those blocks via a rate controlled fertiliser box. A portable lockable chemical shed that meets all legal requirements was built to accommodate the purchased herbicides used on the farm. Minimum tillage is practised to save time, money and prevent erosion during the wet season.



Precision Ag training will be held in February for all growers. Three platforms will be represented: Trimble (Feb 1), John Deere (Feb 8), and GPS AG (March 1). Each platform will have its own training day so that growers are able to attend the day that showcases their system.

Training will also be available for growers to complete the four competencies needed to handle and apply chemicals on the 31st of January 2019 at the PCYC in Ayr. This will enable growers to refresh their certification or sit for it for the first time. For more information or to book a place please don't hesitate to call Jasmine Connolly on 0438 934 601 or Terry Granshaw on 0437 553 149.

CANE HARVESTER YIELD MONITORS

Almost every other crop in the world that is mechanically harvested has a yield monitor on the harvester. Yield maps are a powerful tool, if overlaid with other sources e.g. EM map or satellite imagery. A yield map on its own, is like any map on its own, not very informative. But overlay several years of yield maps with other information - such as EC maps, soils maps, satellite imagery, drone imagery - and you start seeing a pattern. Growers can use these layers to precisely pinpoint areas on farm that are either not performing or are out-performing the average crop growth at a paddock scale level.

Recently the sugar industry has had some new developments with sugarcane harvester yield monitors. Here is a quick overview of three yield monitors that are currently being used commercially in the industry.

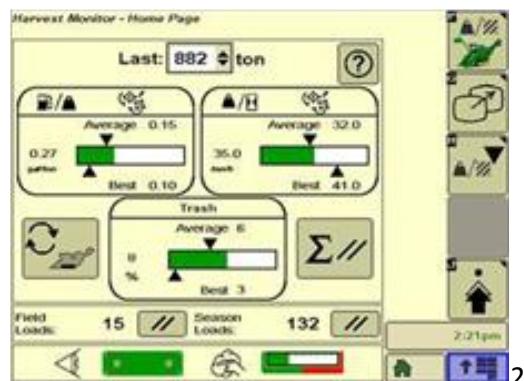
John Deere has released their HSS harvester monitor which is available as an option on all new model JD CH570 harvesters; or the monitor can be purchased and installed to all JD 3520 harvesters built after 2013. From the cab the operator can monitor total tonnes harvested, harvester productivity, trash percentage and fuel usage. High resolution, stereoscopic optical sensors and pattern recognition technology are used to scan the flow of cane as it passes through the elevator. Four LED lights illuminate the sampling area to ensure uninterrupted visual clarity. The system then converts volume to mass to obtain tonnes of cane and extraneous matter levels. To use this monitor the harvester requires a GPS receiver, data points are georeferenced to precise field locations.

Vanderfield's yield monitor uses weigh cells that are positioned under the elevator floor coupled with speed and GPS positional data. Greentronics software is used to process the data being generated from the weigh cells and forward speed. The on-board display shows area harvested, tonnes/ha and cumulative tonnes harvested. This yield monitor is the only system that records an actual weight and can be fitted to any Case or John Deere harvester. Due to the position of the weigh cells some regular maintenance is needed (e.g. cleaning of debris and soil) when harvesting conditions are not perfect.

The Vantage BMS Sc101 consists of a pressure reading from the harvester chopper circuit that is logged in either the FMX or TMX Trimble displays along with speed and GPS positional data. This data is then post-processed in the office against the mill weights using a purpose built



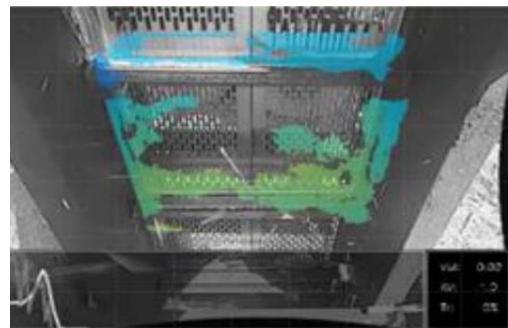
1



2



3



4

Components of the John Deere yield monitor (top to bottom)

1. optical sensors,
2. harvester monitor screen shot,
3. flow of cane being scanned and
4. image recognition technology

program that filters and calculates the data into spatially correct yield maps. The Vantage yield monitor can be fitted to any commercial cane harvester.

All of these systems use post-harvest calibration and post-processing to create maps. These three systems also have the ability, when connected to the correct displays, to show live yield mapping.

How is yield monitoring useful to the harvester operator? The harvester operator has the ability to tell the cane inspector exactly how many tonnes has been removed from a certain paddock, therefore the appropriate number of bins for delivery can be calculated before cane is crushed, speeding the process up. Estimation of how much cane to burn is also easily calculated from this data.

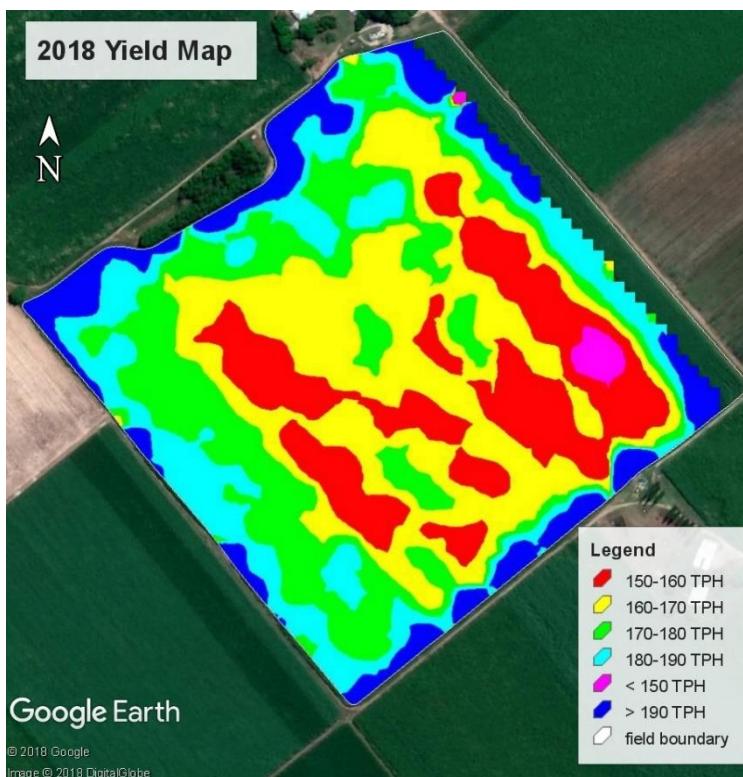
For growers, yield monitors allow them to precisely locate problem areas. With the right expertise variable rate prescription maps can then be uploaded to machinery to apply variable rate soil ameliorants or nutrients.

Addressing the limiting factors and saving time and money is the end goal. Yield monitors play a big part in this process.

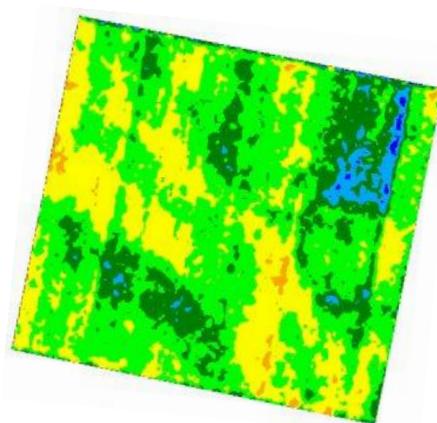


Top: Vanderfield weigh cells on the harvester

Bottom: Greentronics display



Above: Yield map post-processed from a Burdekin harvester with a Vanderfield yield monitor



Top: Vantage yield monitor controller and FMX display

Bottom: Vantage yield map

VARIETY TRIAL RESULTS

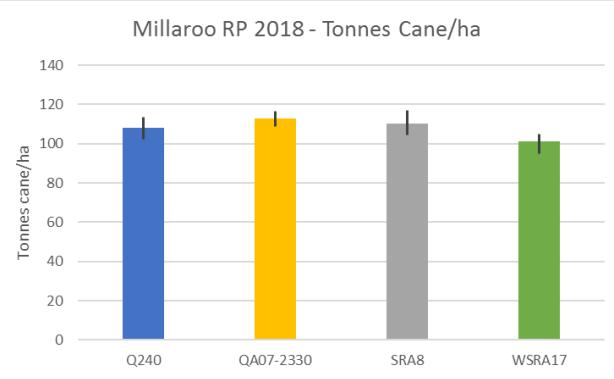
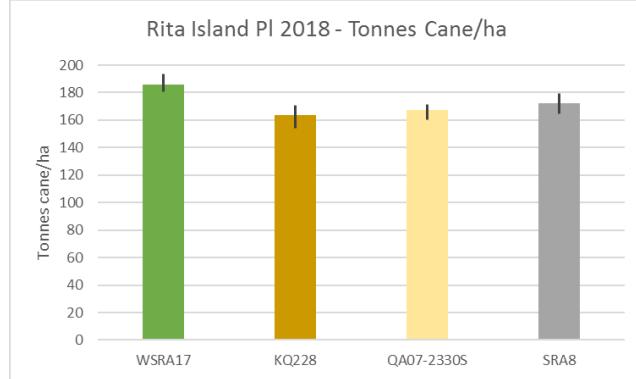
BPS has a large number of variety strip trials in place across the district. These trials are important for assessing the performance of new varieties under commercial growing conditions. In 2018 there were 10 trial sites ranging from plant cane to fourth ratoon.

Plant cane 2018

Two trials were planted in 2017 with the aim of assessing the performance of WSRA17. A second experimental variety, QA07-2330, was also included at both sites. QA07-2330 is a smut resistant variety that looks promising, but it is currently on hold pending more data on milling characteristics. WSRA17 will be available from approved seed plots in 2020. It performed very well at the Rita Island site where it topped the trial for both tonnes of cane and tonnes of sugar. The Millaroo trial was a plough-out replant block and yields overall were low. WSRA17 didn't perform as well here as at Rita Island; while CCS was on par with the other varieties it was the lowest yielding variety for tonnes of cane.

Rita Island			
Variety	TCH	TSH	CCS
KQ228	163	25.8	15.8
QA07-2330	167	25.2	15.0
SRA8	172	23.4	13.6
WSRA17	186	27.7	14.9

Millaroo			
Variety	TCH	TSH	CCS
Q240	107	17.6	16.3
QA07-2330	112	18.8	16.7
SRA8	110	18.1	16.4
WSRA17	101	16.7	16.5



Black lines show the variation between the highest and lowest plot results

First ratoon 2018

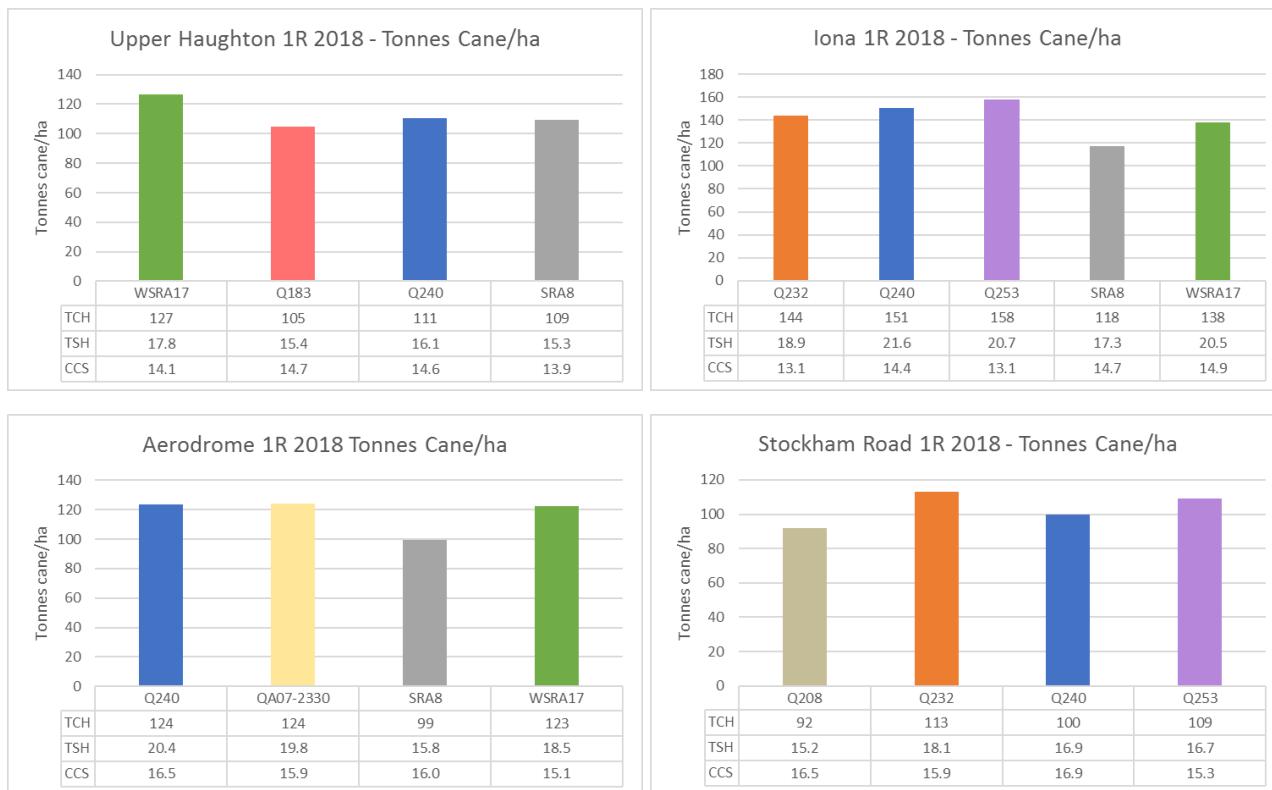
WSRA17 was first included in variety trials planted in 2016 and it has performed reasonably well in all three trials.

At the Upper Haughton site WSRA17 was the best performing variety for both tonnes of cane and tonnes of sugar. Q240 was the next best variety in this trial. This pattern is the same as the plant cane results.

At Iona, Q253 had the best tonnes of cane, but the worst CCS. WSRA17 was in the middle of the trial for tonnes of cane and sugar and had the highest CCS. This is in contrast to the plant cane yields, where Q232 and Q240 were the best performing varieties.

In the Aerodrome trial tonnes of cane were similar for WSRA17, Q240 and QA07-2330. Low CCS for the WSRA17 reduced the tonnes of sugar, but there was a lot of variability in the CCS readings (13.3 – 16.5). SRA8 has performed poorly at this site in both plant and first ratoon.

The Stockham Road trial is comparing variety performance on sodic soils. As in the plant crop, Q232 was the best performing variety for tonnes of cane and sugar, though it was beaten by both Q240 and Q208 for CCS.

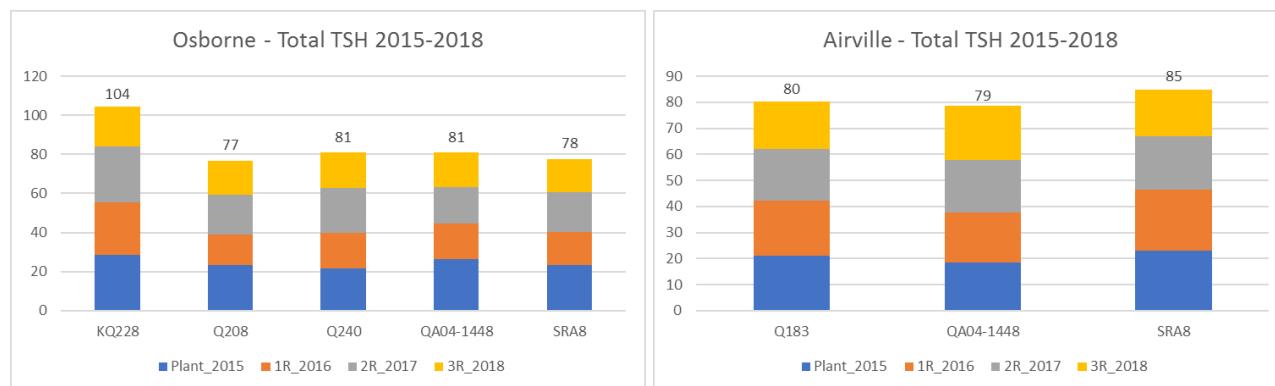


Third and fourth ratoon

The Osborne, Airville and Mulgrave (3R) trials were planted to assess the performance of SRA8 and QA04-1448. While the Selkirk, Jardine and Jarvisfield trials were looking at Q252 and Q253. Only the Selkirk trial went to fourth ratoon with the other two being ploughed out after the third ratoon harvest in 2017. The total tonnes of sugar harvested for each variety over the life of each trial has been calculated. This gives us a measure of variety performance over time. For example SRA8 at Airville cut 23 t/ha in both plant and first ratoon, 21 t/ha in second ratoon and 18 t/ha in third ratoon, for a total of 85 tonnes sugar/ha.

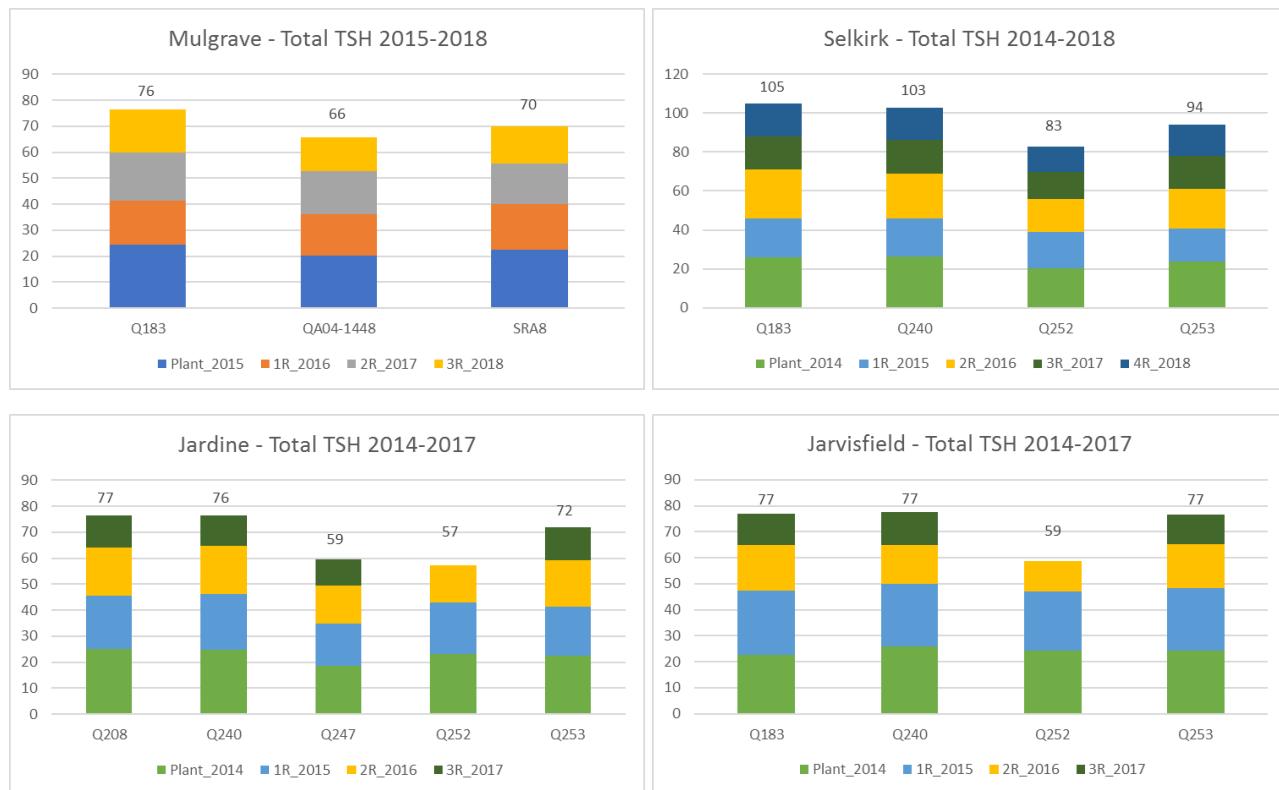
At the Osborne site KQ228 was by far the best variety cutting a total of 104 tonnes of sugar per hectare from plant through to third ratoon, though it should be noted that its vigorous early growth did cause shading of the plots beside it and may have reduced their yield.

At Airville there was little overall difference in tonnes of sugar between the three varieties, despite there being large variations in the total tonnes of cane cut – 509 tonnes for Q183 vs 548 t for SRA8 and 553 t for QA04-1448.



At Mulgrave a combination of good tonnes of cane and CCS meant that Q183 was overall the best performing variety. SRA8 cut the least tonnes of cane in total but good CCS kept the tonnes of sugar up. QA04-1448 was an experimental variety that will not be released due to low CCS. At this site the CCS in 2018 was 3 units less than the Q183 or SRA8.

The other three trials showed that Q240 is a reliable variety over a range of soil types. Q253 has had mixed performances, and the Q252 really didn't perform well at any site. At both Jardine and Jarvisfield, there wasn't enough cane to get a mill CCS reading for the third ratoon Q252 crops.



UPCOMING EVENTS

BPS FOCUS GROUPS

January 15, 17, and 21
9 am – 10.30 am

BPS Office,
210 Old Clare Road, Ayr

RSVP: rmillia@bps.net.au

CHEMICAL HANDLING AND APPLICATION

January 31

Burdakin PCYC,
164 MacMillan St, Ayr

RSVP: Jasmine Connolly 0438
934 601 or Terry Granshaw
0437 553 149

PRECISION AG TRAINING

Trimble: February 1
John Deere: February 8
GPS Ag: March 1

Burdakin PCYC,
164 MacMillan St, Ayr

RSVP: Claire Bailey 0437 134
043 or Terry Granshaw 0437
553 149

BIOSECURITY

Machinery movement

When it comes to good farming practices we commonly think of things like irrigation, fertilising, and weed management. What about biosecurity?

Biosecurity plays an important part in the protection of your crop and the industry, that is why we should all do our bit. A good example of the importance of quarantine zones and industry working together, is that there has never been any of the devastating Fiji Leaf Gall found north of Proserpine. This disease caused massive losses to the industry in Bundaberg in the 1970's.

The Burdekin is in Sugarcane Biosecurity Zone 2 (from Townsville to Abbot Point). **All** sugarcane machinery that leaves or enters this zone needs to be inspected by a certified machinery inspection officer and have a certificate issued. BPS can provide this service for machinery that needs to leave the area. Machinery or implements that have not been inspected and do not have the correct paperwork run the risk of receiving a penalty. It is important to also remember that it is not just tractors, implements and harvesting equipment that need this paperwork. Quad bikes or buggies should also be inspected as they also come in contact with soil and plant materials.

Tips for getting ready for an inspection:

- Ensure that you have the contact details and delivery address of where the machinery is being sent. This information is required to complete the paperwork.
- When cleaning down machinery check all the nooks and crannies. You are looking to remove all soil and plant material (trash, billets and weed seeds). Harvesters in particular can be difficult to clean, and the diagram on the next page shows all the areas where dirt and trash can get caught.
- Contact BPS and book your inspection once the machinery/implement is clean. Give a minimum of 3 days' notice as the machinery may need several inspections to ensure it meets the strict requirements.

Managing on-farm biosecurity

Looking after biosecurity on your farm is an integral part of managing diseases such as Ratoon Stunting Disease (RSD) and the spread of weed seeds such as sorghum and itch grass. Maintaining good farm hygiene is an important management practice. Machinery should be clean before entering your property and cleaned when it leaves.

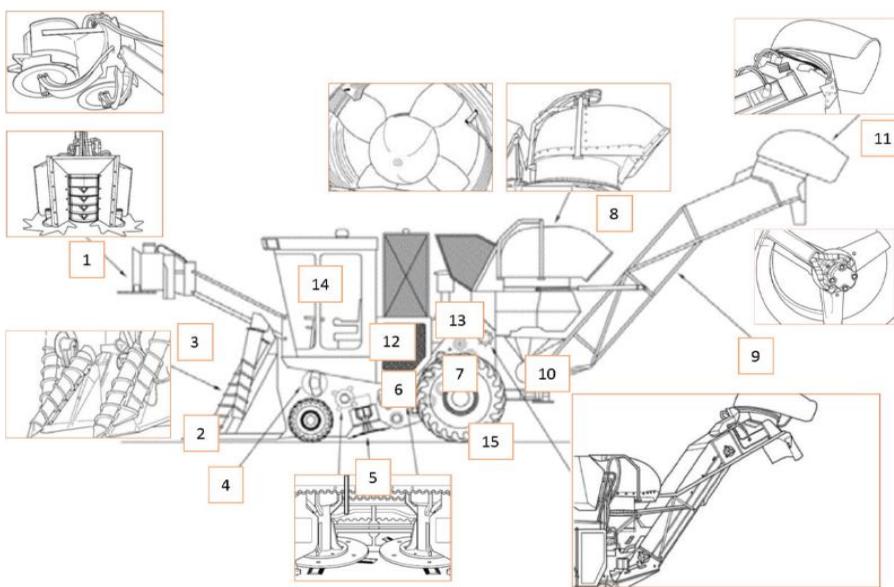
Tips for managing on-farm biosecurity:

- Bring approved clean seed into your farming system regularly. This is important to the overall health of your crop and ensures that you do not bring diseases onto your farm such as RSD, Chlorotic Streak Disease and Leaf Scald.
- When you plant clean seed ensure that the block is fallow and has no volunteer cane present. Not only does volunteer cane have the potential to bring disease into your clean seed but it can mean



that you have a mix of varieties present in the block when you come to harvest for plants the following year.

- If you are concerned about your plant source, call your BPS Field Officer and they can complete a plant source inspection. Where there may be suspicions about RSD they can take a sample for further testing.
- Sterilise harvesting and planting machinery that enters your farm, this is a good general practice.
- If you have RSD on your farm this should be taken into consideration when you plan your harvest rotation. To manage the harvest practically while containing RSD, cut all the 'clean' blocks first and together where practical. Then cut the blocks which have RSD and sterilise the machinery.



When preparing a harvester for inspection, note that the following areas will be assessed during the inspection:

1. Topper arms, drums and blades
2. Gathering sidewalls and floating shoes
3. Crop dividers
4. Knockdown and finned rollers
5. Base cutters
6. Feed roller train
7. Chopper system
8. Primary extractor blades and chamber
9. Elevator system
10. Elevator boot
11. Secondary extractor blades and chamber
12. Motor screen and cover
13. Hydraulics and lines
14. Operator's cabin
15. Wheels and tracks

STAFF CONTACTS

Contact	Title	Contact Number	Email
Office		(07) 4783 1101	reception@bps.net.au
Fax		(07) 4783 5327	
210 Old Clare Road, Ayr QLD, 4807			
PO Box 237, Ayr QLD, 4807			
Rob Milla	Manager	0490 036 329	rmill@bps.net.au
Mark Rickards	Commercial Manager	0427 834 800	mrickards@bps.net.au
Marian Davis	Extension Agronomist	0428 927 079	mdavis@bps.net.au
Cherrie Johnson	Trainee Extension Agronomist	0447 069 887	cjohnson@bps.net.au
Terry Granshaw	Extension Officer	0437 553 149	tgranshaw@bps.net.au
Jasmine Connolly	Extension Officer	0438 934 601	jconnolly@bps.net.au
Claire Bailey	Extension Officer	0437 134 043	cbailey@bps.net.au
David Paine	Field Officer – Kalamia	0427 167 159	dpaine@bps.net.au
Leigh Chapple	Field Officer – Invicta	0427 372 124	lchapple@bps.net.au
Ashley Taran	Field Officer – Inkerman, currently on maternity leave		
Wayne Johnstone	Field Officer – Inkerman	0407 960 057	wjohnstone@bps.net.au
Maddy Molino	Field Officer - Pioneer	0407 167 159	mmolino@bps.net.au