



Grower Update

ISSUE 42 – SEPTEMBER 2021

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



This issue contains:

Wrap up from the plots
New variety - SRA32
RSD Update
View from the fields
Crop data collection
Soil sampling
Measuring spray rig consistency
Burdekin irrigation project
Staff contacts

WRAP UP FROM THE PLOTS

The 2021 planting season has wrapped up now and BPS staff have negotiated the most trying seed cane season on record after the Inkerman and Rapisarda plots were closed before a stick of cane was sold, due to Ratoon Stunting Disease being discovered. Then the P & K Plot was partially closed for the same reason, leaving KQ228 in short supply.

This put a lot of pressure on certain varieties at the remaining plots as additional growers requested supply from a smaller pool of seed cane. On top of this, transportation had to be organised to move plants from the north side to Inkerman growers. Special thanks to the plot holders, harvesting contractors and hauling crews who have been very cooperative. This made a difficult logistics exercise far less stressful.

BPS drew on cash reserves to ensure all members were supplied with seed cane or commercial cane from the remaining plots. A substantial sum was paid for additional transport. Members also benefited from a \$10 per tonne subsidy as it was deducted from every sale regardless of quantity.

From the chart below, it can be seen that Q240 was the most popular variety accounting for around 30% of sales, closely followed by the new variety SRA23 at 22%. Overall, 5000 tonnes of cane were distributed from the plots. This is an excellent result given the circumstances.

Seed Cane Sales to 31st August, 2021

Variety	Inkerman	Whitson's	Giru	Brock Rd	Rapisarda	Millaroo	Christensen	Rocks	TOTAL	percentage
1R - KQ228		356.59							356.59	7.13%
1R - Q183		249.61	55.55	10.87					316.03	6.32%
1R - Q208									0	0.00%
1R - Q232		46.41							46.41	0.93%
1R - Q240		571.15							571.15	11.41%
1R - Q252									0	0.00%
1R - Q253									0	0.00%
1R - WSRA17									0	0.00%
									0	
KQ228		102.34	139.04	69.01		2.5	2.56		315.45	6.30%
Q183		314.63	60.36	86.62		15.75	7.87		485.23	9.70%
Q208		85.86	47.77	78.29			15.15		227.07	4.54%
Q232		143.69	8.26	12.34					164.29	3.28%
Q240		508.75	156.73	162.84		32.25	62.08	19.74	942.39	18.83%
Q253								7.76	7.76	0.16%
WSRA17		333.94	9.91	71.44		31.29	6.72		453.3	9.06%
SRA23		524.48	121.21	97.15			36.83	338.92	1118.59	22.35%
TOTAL	0	3237.45	598.83	588.56	0	81.79	131.21	366.42	5004.26	
	Plant Cane Sold			3714.08	74.22%					
	1R Cane Sold			1290.18	25.78%					
	TOTAL TONNES SOLD			5004.26	100.00%					

SRA32

Clean seed is a foundation for productivity. The plant breeding process is long and complex. From crossing to release can take up to 12 years. Earlier this year in March the RVC (Regional Variety Committee), decided to release the variety SRA32. Yes, let's not get confused with the current variety SRA23 which was available this year for clean seed purchase from the plots around the Burdekin district.

Before a variety is released, the SRA plant breeding team have to undertake a range of specialist tests to determine the disease resistance profile, sugar quality, and fibre quality of advanced clones. This variety has completed testing through to second ratoon in the Burdekin between 2015 to 2020.

From the disease perspective SRA32 has an intermediate rating to smut. This means if you are planting into a high-risk situation this variety e.g. blocks that have had smut in the past or where surrounding blocks may have smut should be avoided. Sinker fungicide should be used to manage risks at planting. SRA32 is resistant to leaf scald, mosaic and Pachymetra.

Looking at the milling side of things, cane yield was a remarkable 16 t/ha above the standard varieties in the trials, although the CCS was 0.8 units below the standards. The standard varieties are Q240, Q183, Q208 and KQ228.

The RVC noted that there may be opportunities to influence CCS through management practices and can see the potential that SRA32 offers in terms of sugar per hectare.

BPS have planted just under one hectare of tissue culture of this newly released variety. This means staff can propagate this into distribution plots in the 2022 season for the release to growers in 2023. By planting tissue culture this has fast forwarded the process by one year and is a great way to eliminate the risk of disease. If you have any questions regarding this variety or management practices, call your field officer or extension staff.



Left: tissue culture seedling



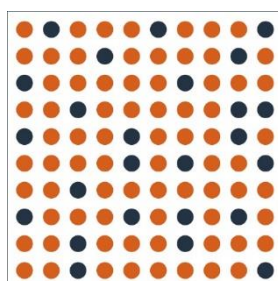
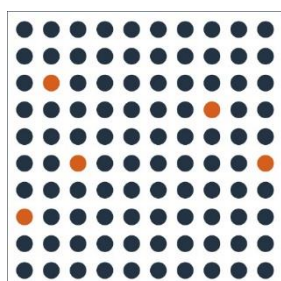
Right: planting seedling

RATOON STUNTING DISEASE UPDATE

One of the key topics from the recent round of shed meetings was the testing for and detection of RSD in the Burdekin. RSD detections have increased again this year, following a trend that we have been seeing over the last few years.

While we are finding more positive results, **a negative result does not mean that there is definitely no RSD present.** Even within an infected stool, not all sticks will have the disease. Our chances of detecting RSD all come down to numbers.

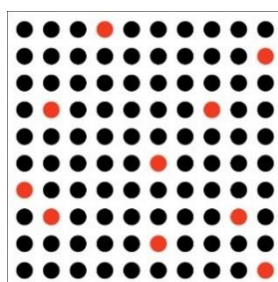
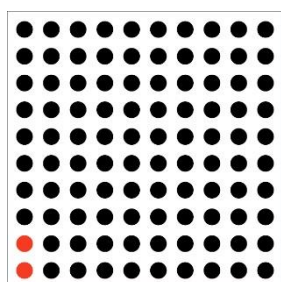
When we do our commercial RSD survey we test 16 sticks per paddock - 4 sticks from each corner. If there is a high level of RSD in the block, sampling 16 sticks is likely to give a positive result. However, if the level of infection is low, then it is possible that we might get a negative result. The 2 diagrams below aim to show this. The diagram on the left represents a paddock with 5% RSD infection (orange dots) and shows that it would be easy to miss sampling an RSD positive stalk. Compare this to the diagram on the right which represents a crop with 75% infection. In this case it is highly likely that we would get a positive RSD result from our 16 sticks.



5% RSD infection (left) compared to 75% RSD infection (right)

(Magarey, Ngo & Gibbs, 2021)

The initial source of infection will also affect the chances of finding RSD. If the infection source is a harvester, then sampling on the corners is highly likely to identify the disease. But, if the infection source is diseased seed cane/billets, volunteers, or bacteria in the planting dip, sampling the corners is less likely to identify disease presence as the diseased plants will be scattered through the block.



Example of disease incidence when spread by a harvester (left) compared to disease spread by a planter or volunteers (right)

(Magarey, Ngo & Gibbs, 2021)

RSD can be managed and controlled as long as all sectors of the industry work together.

Growers can minimise the risk by planting approved seed cane, not practicing plough-out replant, controlling volunteers in the fallow, and cleaning and sterilising machinery that comes into contact with juice e.g. stool splitters.

Planting and harvesting contractors should assume that all blocks are potentially infected and should clean down and sterilise equipment between farms at a minimum. On farms with a known RSD infection, equipment should be cleaned and sterilised between blocks. Planting contractors also need to drop and replace the fungicide mix and not carry billets between farms.

BPS will test planned seed sources for RSD (this needs to be organised early with your field officer as it can take up to 3 weeks for results to come back) and will continue to survey all farms to monitor the incidence of RSD across the district.

VIEW FROM THE FIELDS

Rats

There are two types of rats: ground and climbing. Rats chew on the cane stalks usually within 20 cm to 1.5 m off the ground depending on the species. This can lead to significant damage such as stalks snapping or rotting which can impact productivity by reduced tonnages and sugar content.

Registered products are available to use for the control of rats. Rat baiting is only permitted from 1st October until 30th June.

There are 2 registered products:

- RATTOFF
- ZP Rat

Also don't forget to register with your mill area's field officer if you are applying rat baits whether that's around the sheds or in the paddocks.

Ground and climbing rats are native species, and it is a requirement of the MOU (Memorandum of Understanding) to record all instances of baiting in the district.



Canegrubs (Greyback)

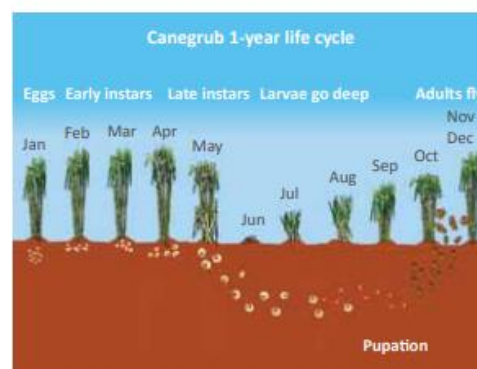
An increase in canegrubs has been noticed in the district in the 2021 season. Canegrub damage can lead to significant productivity loss if left untreated. The Greyback canegrub is the most common canegrub in the Burdekin region. It has a 1-year life cycle with most damage found in maturing cane in autumn to winter.

How to identify if your paddock is infected

- Stool tipping
- Yellowing leaves in lodged cane
- Visible grubs/beetles – some growers have already noticed early beetle flights
- Chewed roots
- When harvesting you may notice soft/spongy patches in the soil or stool in the cane bins.

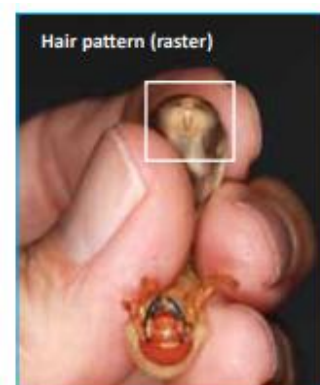
Canegrub life cycles and damage

1-year life cycle and damage



Canegrub identification

Different species of canegrubs are identified by the hair pattern on the grub's rear end. The hair pattern is called a 'raster'. You may need a hand lens with a magnification of x10 to see the pattern. To confirm the identity of grubs that look similar you will need to count the number of hairs in the raster or send the grub away for a DNA test.



Greyback canegrubs

- Adult beetle, 24-33 mm long, coloured grey by coat of hairs, dark brown patches appear as hairs wear away
- Raster with two, almost straight, single rows of 20-28 short hairs

Call your field officer to help identify grubs or if you suspect cane grub damage.

Moth Borer

Moth borer is one of the most common pests getting around in paddocks during spring/summer.

How to identify if your cane is affected

- Dead hearts
- Vertical tunnels
- You can pull the heart out and it will have a bad smell
- You may also be lucky and come across the larvae

Damage is more common on paddock edges, especially near a grassy headland. There is no major threat to the plant as it will grow out of it. So, the main control method is to keep paddocks free from weeds and maintain headland cleanliness.



Nut Grass

Nut grass is an economically important weed in the sugar industry. Nutgrass (*Cyperus rotundus*) is a part of the Cyperaceae family, commonly known as sedge. Small tubers form from the fibrous roots and they are known as basal bulbs. Nutgrass is allelopathic, which means the plant exudes a toxin that affects the

germination of sugarcane. The best way to control nutgrass is by chemical control as cultivating increases the spread of tubers underground.

Sempre (haloxysulfuron-methyl) is a selective post-emergent herbicide for nutgrass control. Sempre is best applied to rapidly growing nutgrass at the 4-6 leaf stage and no less than 5cm in height. This product will not damage the sugarcane crop. Use the higher rate (130 g/ha) when the nutgrass pressure is high. To improve the penetration of the active ingredient, you will need to use Sempre in conjunction with an adjuvant oil like Banjo.

SUGARCANE (NSW AND QLD ONLY)

SITUATION	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
Plant and ratoon Sugarcane	Nutgrass	65-130g/ha	Use the higher rate for dense infestations or for maximum control where a single application is intended. Follow-up treatments may be required to control plants emerging from dormant tubers. Apply using a boom spray with flat fan nozzles or flood jets to apply at least 80L/ha as a broadcast, or directed treatment in Sugarcane. ALWAYS add Banjo or Supercharge Elite at 1L/100L. Avoid streaking, skips or overlaps during application. Cultivation should be delayed for at least 2 days following treatment
		1.3g/100m ²	For spot treatment using handgun or knapsack sprayers, apply 1.3g Sempre per 100m ² . For example, mix 1.3g Sempre in 10L water, add 100mL of Banjo or Supercharge Elite and apply 10L of the mix per 100m ² .

Figure 1. Sempre label for Sugarcane

Alternatively, in a fallow cropping situation you can also control nutgrass with glyphosate. Use of glyphosate will require two applications at flowering of the nutgrass which will enable the chemical to translocate down to the root and tubers. This will kill most of the connected tubers and reduce the number of viable bulbs, resulting in a reduced nutgrass population.



Have you considered developing an integrated pest management plan for your business? If you have, then talk to your local field officers for advice.

CROP DATA COLLECTION

Towards the end of the year, our field officers begin collecting everyone's crop data. Crop data collection is an important aspect of our work at BPS since it provides a guide to what is happening in the district.

The standard details we collect, and why we collect it are:

- **What variety you planted?**
 - This allows us to anticipate trends and plant our distribution plots accordingly.

- It also allows us to monitor if one variety is becoming too dominant and therefore increasing the risk of pest or disease in that variety.
- **Where the plant source came from?**
 - This allows us to track any pest or disease that may be found in the plant cane. E.g. if a plant block tests positive to RSD we can go and determine if the source block is also positive.
- **Who planted it?**
 - As with the previous point, this allows us to track how a disease might have spread.
- **Fungicide and Insecticide at plant?**
 - If there is a decreased use in these products, we can monitor any potential increase in pests and disease and give advice for its continued use.
- **Any grub control used?**
 - This allows us to monitor the risk of canegrub damage that might emerge.
- **Any pest and disease?**
 - This allows us to monitor existing and emerging pests and diseases and implement strategies to control them.
- **Seed cane orders for following year?**
 - This is VERY important so we can allocate the amount of cane each grower can take from our distribution plots. We do this to ensure all growers planting throughout the season have access to seed cane.

We are adding a new collection question this year that will hopefully assist us in preventing the spread of RSD.

- **What do you intend to use as a plant source for planting next year?**
 - This will allow us to test that source for RSD early. Although we can never guarantee that a source is RSD free (since we only sample a very small portion of the block), it will stop the spread of known RSD infected cane.

You can expect a visit from your field officers in the next few months, and as always, if you have any questions or concerns, your field officers are always available to help.

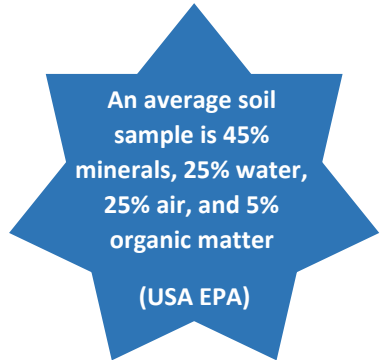
SOIL SAMPLING

Burdekin Productivity Services have started their 2022 fallow paddock soil sampling. Starting to sample before the planting period allows for more time to complete sampling and provide recommendations.

BPS is asking that growers begin to plan which paddocks they are going to fallow and plant in 2022. All paddocks that growers plan to plant with sugarcane require a soil sample and fertiliser recommendation. Soil tests take at least 2 weeks to be completed, hence why starting early is the best management plan.



Natural processes
can take more than
500 years to form 2
centimetres of
topsoil (European
Soils Portal)



An average soil
sample is 45%
minerals, 25% water,
25% air, and 5%
organic matter
(USA EPA)

MEASURING SPRAY RIG CONSISTENCY

Jack Robertson and Allan Blair from DAF made a special trip to the Burdekin with their patternator to test some spray rigs in the Giru region.

A patternator measures the evenness of a spray rig's droplet distribution. It is placed under the spray boom and water is run through the system and caught in the channels. Inside each channel is a green ball that floats to a certain level depending on how much water has come out of each nozzle. A spray rig with no issues would show all balls floating at a similar height, if there were issues such as a damaged nozzle or blockages in the filter, you would see the balls at varying heights.

All the spray booms tested were in good order and within the acceptable range to produce a good distribution. Along with the patternator to assess spray distribution, we also used the Spot On nozzle calibrator to assess the litres per minute for each nozzle. This gave us a good understanding of each nozzle's individual output and if there was an underlying issue. Similarly a jug and stopwatch could be used to calibrate in the same way. We found that some nozzles had small blockages which gave an unusual reading, and this was also sometimes seen in the distribution across the patternator. Once the nozzles were cleaned the L/min and spray distribution were more even.

It is important to have an even spray distribution to ensure you get the best weed kill. It might be worth cleaning your nozzles more frequently, particularly if your water source has some contaminants that could choke up the nozzles. Also check for seeds that could get lodged in the nozzle holes and check for any external damage.



Figure 1: Patternator under spray boom catching droplets



Figure 2: spray rig distribution displayed by the patternator, notice the height of the balls taper towards the edges.

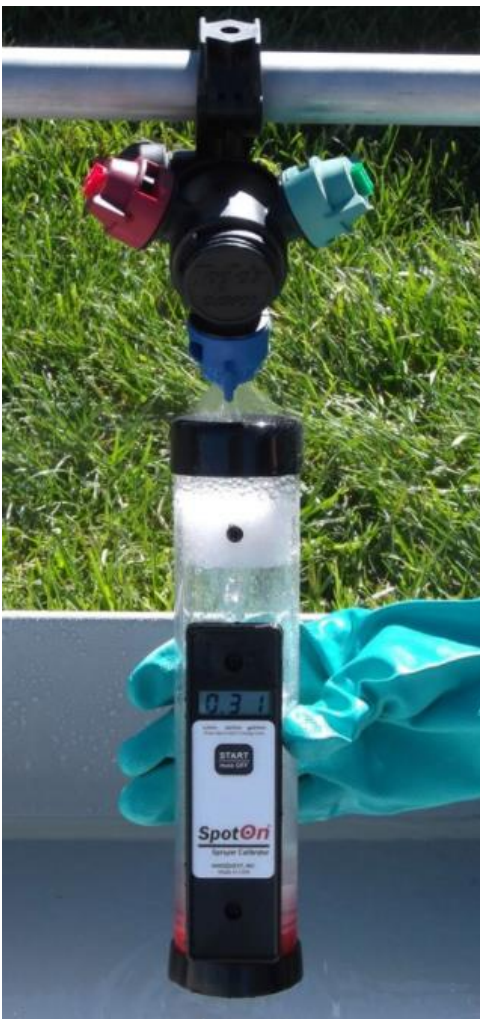


Figure 3: Spot On spray nozzle calibrator



Calling for Expressions of Interest

Are you a Burdekin sugarcane farmer interested in saving on energy and irrigation costs by exploring ways to improve your farm irrigation systems?

Then express your interest in the *Burdekin Irrigation Project (BIP)*.

Participation in the project means you will receive one-on-one support to measure and benchmark current water and energy use, identify the potential to improve efficiencies and develop a tailored Irrigation Plan.

More information about the Burdekin Irrigation Project is available on the SRA website:

www.sugarresearch.com.au/growers-and-millers/irrigation/

To find out more please contact:

Farmacist: Billie White	0409 477 359	billiew@farmacist.com.au
Burdekin Productivity Services: Marian Davis	0428 927 079	mdavis@bps.net.au
AgriTech Solutions: Michael Hewitt	0418 698 924	michael@agritechsolutions.com.au
Sugar Research Australia: Armin Wessel	0436 937 555	awessel@sugarresearch.com.au
or Terry Granshaw	0457 650 181	tgranshaw@sugarresearch.com.au

To express your interest in reducing costs and improving irrigation efficiency, complete the Expression of Interest form which is available at www.sugarresearch.com.au/growers-and-millers/irrigation/ or by contacting any of the above contacts.

Submit the completed forms to **Armin Wessel** or **Terry Granshaw** at SRA by close of business on **Friday 15 October 2021**.

Completed forms can be submitted:

- in person: **Sugar Research Australia, 30962 Bruce Highway, Brandon**
- by post: **PO Box 387 Brandon Qld 4808**
- by email: awessel@sugarresearch.com.au or tgranshaw@sugarresearch.com.au

A further round of expressions of interest will open in 2022.



**Great Barrier
Reef Foundation**

The Burdekin Irrigation Project is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation with collaboration between Sugar Research Australia, Farmacist, AgriTech Solutions, Burdekin Productivity Services, Burdekin Bowen Integrated Floodplain Management Advisory Committee, James Cook University, the Queensland Department of Agriculture and Fisheries and NQ Dry Tropics.

BURDEKIN IRRIGATION PROJECT (BIP)

The Burdekin Irrigation Project is a multi-agency project that will help Burdekin cane growers to measure and understand their irrigation energy and water use.

The first round of the BIP started in June this year. As a starting point participating growers have had their farm infrastructure mapped. This lets us identify different irrigation areas across the farm as well as noting any obvious infrastructure limitations that could affect irrigation management.

Now we are starting to measure how much water and energy is being used for irrigation. This will give us a benchmark for each grower and each management zone. Once this data is collected we will be able to assess irrigation and energy efficiency and identify and prioritise areas where improvements can be made.

If you would like to be part of the BIP, expressions of interest for the second round are now open. Forms are available from BPS or from the SRA website. Completed forms need to be returned to SRA by 5 pm October 15, 2021.

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