



Grower Update

ISSUE 46 – DECEMBER 2022

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



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Merry Christmas

The Board, Management and Staff of BPS would like to wish all growers and industry members a merry Christmas and a safe and happy New Year.

The BPS office will close at midday Friday December 23, 2022 and will reopen at 7 am Tuesday January 3, 2023.

CHRISTMAS MESSAGE

As 2022 comes to a close I would like to wish everyone a Merry Christmas. However I appreciate some will still be very busy with the delayed harvest. While this year has not been without its challenges, it is good to reflect on some positives and learnings from the year. One concept I keep reminding staff about, is that a core principle in agriculture is to manage the most limiting factor first. Sometimes the most limiting factor might be something well beyond our control (e.g. weather), however there are many aspects of farm management that we can control that do influence productivity and profitability. The most limiting factor on your farm may well be different to the most limiting factor on your neighbour's farm.

Please feel free to discuss all aspects of farm management with any BPS staff member. We can offer advice and support around irrigation management, variety selection and management, weed control, pest and disease identification and management, soil health, farming systems, legumes, nutrition, record keeping and Smartcane BMP. By discussing any of these issues with BPS staff, we can assist with identifying potential areas that could be limiting productivity, as well as providing tools or advice to overcome these issues.

This year, staff have spent some time supporting growers with a range of tools to assist in managing their farms and allowing more informed decisions to be made. IrrigWeb is an online irrigation scheduling and record keeping tool that not only assists with keeping track of what irrigation applications and rainfall events have occurred on each block, but also sends an email to you every week to inform you which blocks will require irrigation to optimise production. Live data can be viewed of the soil moisture status, based on real time weather conditions combined with inputs on soil type and crop management. Agtrix is a farm record keeping tool that is free for any BPS member, and allows a grower to record cultivations, nutrient and chemical applications and any other scouting activities (e.g. pest and disease incursions) on each block – the Wilmar farm maps are imported to ensure all records match up with your most current farm maps. All records are private to each grower and not able to be accessed by anyone else.

BPS staff have also developed a spreadsheet to allow growers to develop and update their own N&P budgets. Current advice from government states that Smartcane BMP growers are able to prepare their own N&P budget, but all growers may update their budget once it has been developed. BPS staff have been holding workshops to show growers how to use this spreadsheet. Please contact any staff member if you wish to attend training on the use of this spreadsheet.

Staff have been very active lately collecting crop data – more information on this appears later in the newsletter, however it is very important to lodge your approved seed cane orders when your crop data is collected, or before the end of February 2023. At the time of writing, around 2500 t of approved seed cane has been ordered by growers. We will close pre-orders at the end of February if demand exceeds availability and allocate cane based on these orders.

In early January, all staff will be full steam collecting RSD samples at all approved seed cane plots, and after that, conducting plant source inspections and RSD tests for plant sources for individual growers. Please contact your Field Officer if you would like an RSD test prior to planting, and remember to give them at least 2-3 weeks notice.

I hope the weather holds out so we can get this season's crop off, and that all members get some down time and a well deserved rest. I would also like to thank all the BPS staff and directors for their hard work and dedication through the year.

Merry Christmas and Best Wishes

Rob

2022 COMBINED PRODUCTIVITY SERVICES GROUP CONFERENCE.

On the 6th – 8th of December, most of our staff attended the biennial Combined Productivity Services Group Conference, that was held in Lucinda this year. This event typically gathers staff from all the productivity companies from Mossman down to the Sunshine Coast and occasionally, Northern NSW. It is an excellent opportunity to connect with others in our industry who are on the front line of pest and disease management.

This year we started with Rob Magarey (SRA pathologist) presenting information on exotic pests and diseases. It highlighted how important our biosecurity measures are and how successful we have been in keeping out major pests and diseases. He also highlighted how important and effective control can be, showing the diseases we have been able to eliminate in our industry.

This led to our next discussion, RSD. RSD was identified as a problem in most productivity areas. Other areas shared their favoured techniques for testing and Rob Magarey showed how many samples need to be taken to detect RSD. The most important point from this session is that while testing has improved, you can NEVER guarantee a block is free from RSD. Yet, testing is still an important part of our management strategy. By testing and identifying infected seed sources we can recommend that they are not used for planting which will help control the spread of the disease. However, the crucial point was made, that testing is simply a tool for the control of RSD. We really need to move towards better hygiene practices to effectively control the spread of RSD.

Next, we had several speakers focus on varieties. They talked about how they choose the varieties to breed and what markers they look for in their initial trials. This led to discussion about the approved seed cane programs in the other productivity areas, including where tissue culture has become a very useful alternative. Here in the Burdekin, we are lucky to have an extensive seed cane program that gives all growers access to new varieties in bulk quantities much quicker than other regions.

The following morning, we had a presenter from Nufarm showing us their product 'Dropzone'. It has been developed to manage 2,4-D drift with droplet optimisation. There was also a presentation on how the Herbert region is managing their feral pig problem before we moved onto soils and soil health.

Overall, the conference was a great opportunity to see how others in our industry are managing their pest and disease problems. It allows us to share information and as a result, streamline our approach to handling pests and diseases in the Burdekin.



VARIETY TRIAL RESULTS

This season we harvested two variety strip trials. These were a first ratoon at Inkerman and a third ratoon at Mulgrave.

BPS would like to thank the participating growers and their harvesting crews for their assistance with the variety trial program. Without them we would not be able to provide information back to industry on the performance of new varieties.

The trial results for each site include the harvest results from this year as well as the cumulative results over the life of the trial. The black lines on the graphs for the 2022 results show the range of results, that is the lowest and highest yield for each plot.

\$/ha return has been calculated using the cane price formula less harvesting and levies. For the 2022 returns a sugar price of \$550/t and harvesting and levies of \$8.50/t have been used; for the cumulative results we have used a sugar price of \$475/t and harvesting and levies of \$7.50/t.

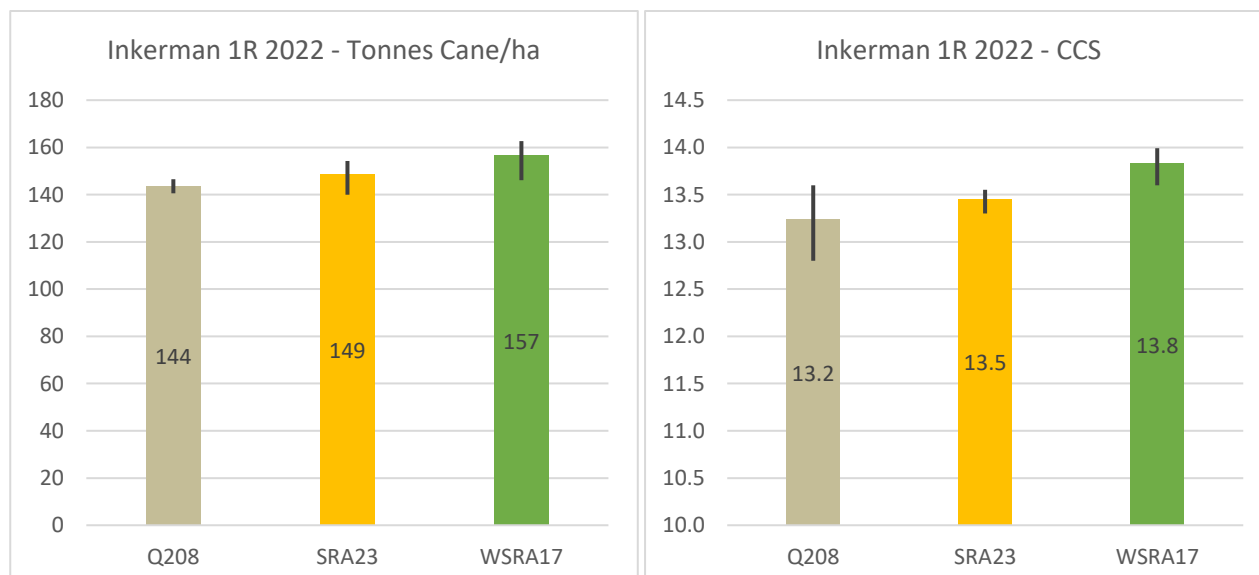
Inkerman – 1st Ratoon

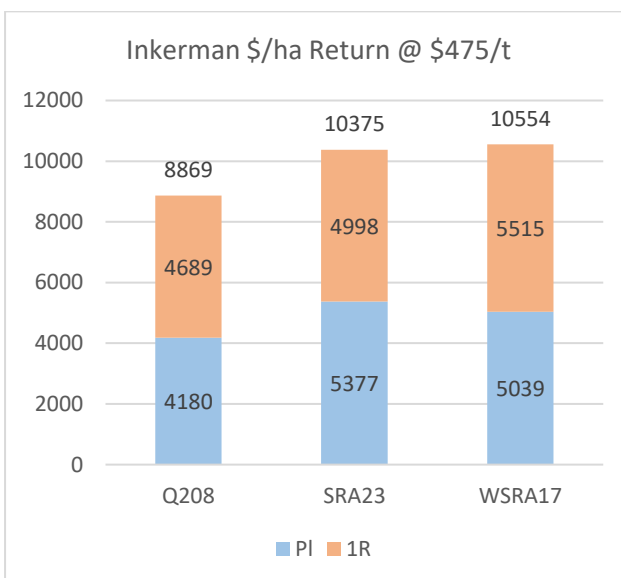
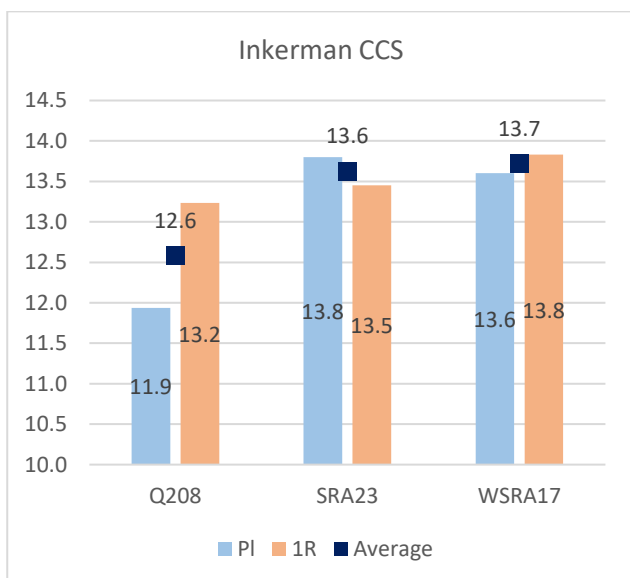
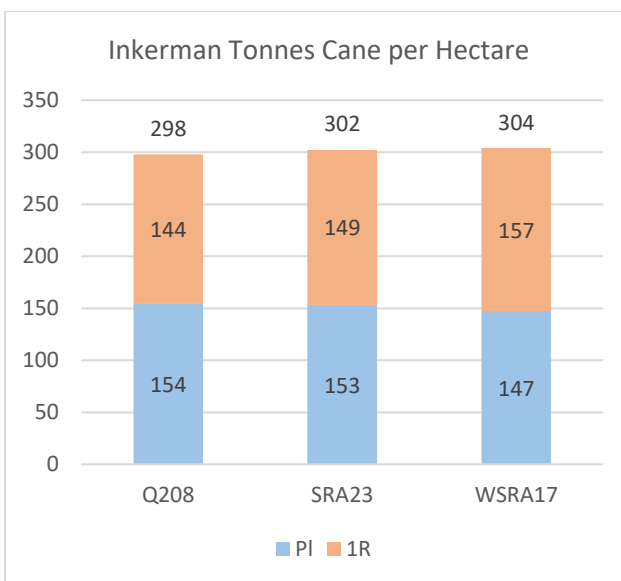
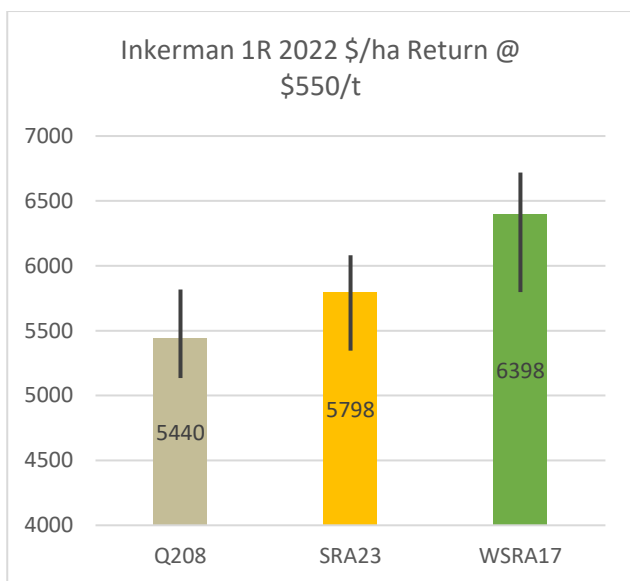
2022 Results

- WSRA17 had the best tonnes of cane per hectare, followed by SRA23 and then Q208. This is in contrast to 2021 where WSRA17 was the worst performing variety for cane yield in this trial.
- CCS this year was similar for all 3 varieties. In 2021, Q208 had much lower CCS than the other varieties, but this could have been caused by both the time of harvest (early season) and that it took 4 days to get the trial harvested. The improved CCS this year could also be due to the application of MODDUS to the whole trial in late May.
- WSRA17 had the highest tonnes of sugar per hectare.
- The best \$/ha return was from WSRA17, then SRA23 and lastly Q208.

Cumulative Results (plant and 1st ratoon)

- The total tonnes of cane per hectare is very similar for all 3 varieties, though WSRA17 is slightly ahead with 304 t/ha vs 302 t/ha (SRA23) and 298 t/ha (Q208).
- SRA23 and WSRA17 have higher average CCS than Q208. But it should be noted that the Q208 result is being strongly influenced by the low CCS in the plant crop. This year's CCS is much better.
- Overall return is slightly in favour of WSRA17 compared to SRA23. The low plant cane CCS for Q208 has really depressed its overall \$/ha return.





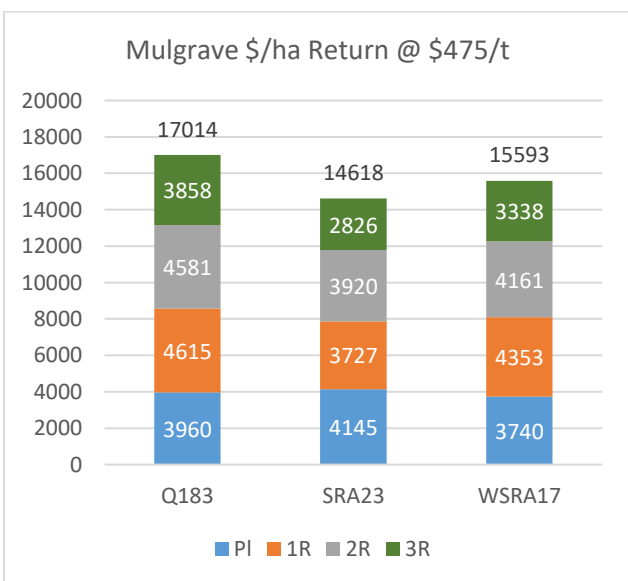
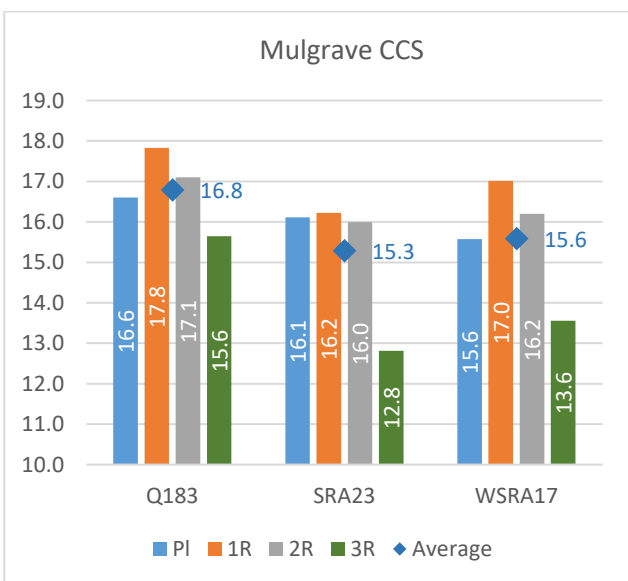
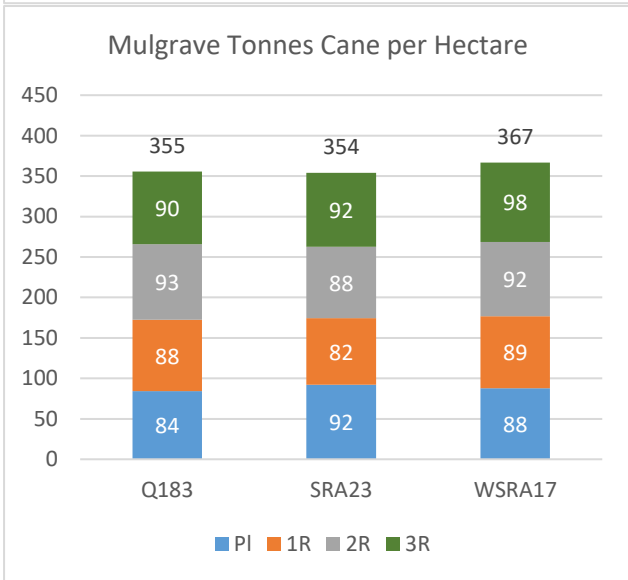
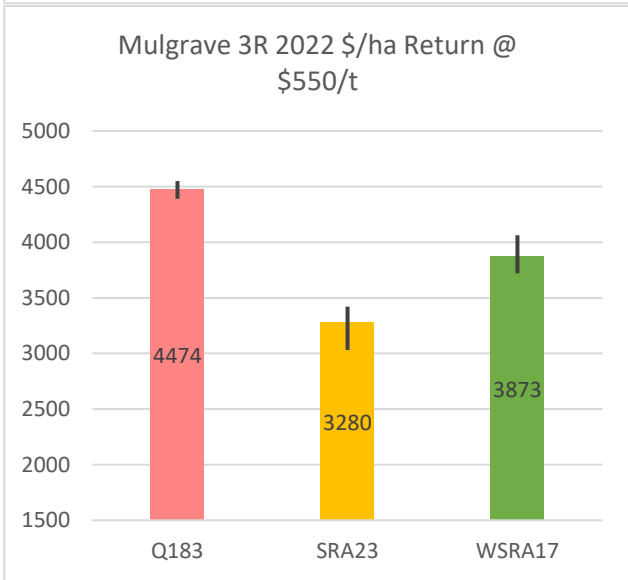
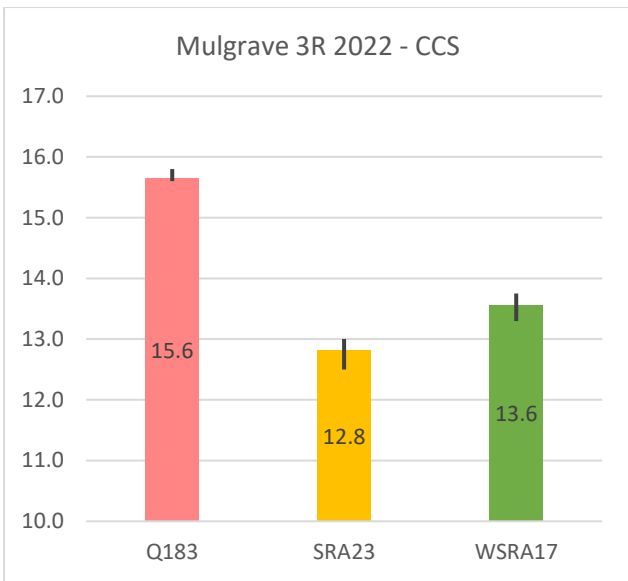
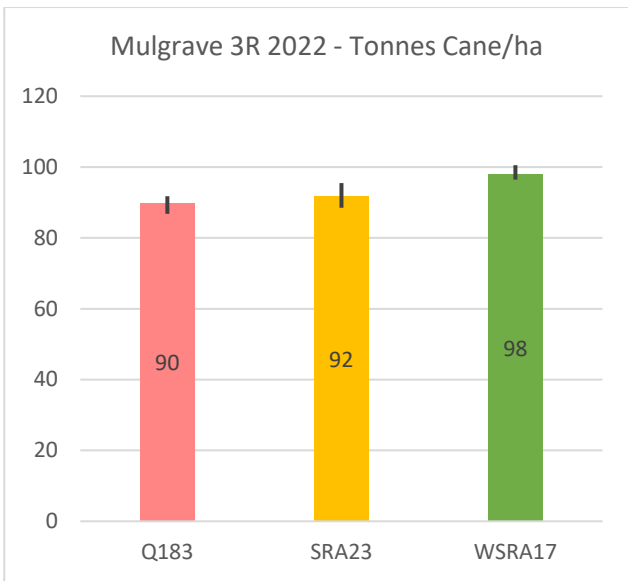
Mulgrave – 3rd Ratoon

2022 Results

- WSRA17 was the best performing variety for cane yield this year at 98 t/ha. There was very little between Q183 and SRA23 which had yields of 90 t/ha and 92 t/ha respectively.
- Q183 had the best CCS being 2 units better than WSRA17 and nearly 3 units better than SRA23. There were a lot of suckers in SRA23 and these may have depressed the CCS.
- Sugar yield and \$/ha return followed the CCS trend.

Cumulative Results (plant and 3 ratoons)

- WSRA17 has cut the highest tonnes of cane over the life of the trial (367 t/ha); Q183 and SRA23 cut virtually the same amount (355 t/ha and 354 t/ha).
- Q183 has consistently had the best CCS.
- The consistently higher CCS means Q183 has had the best overall sugar yield and \$/ha return.



CROP DATA COLLECTION

As we approach the end of the year, our field officers are once again collecting crop data. Typically, we record what variety was planted and where the plants came from; as well as any pests or diseases on your farm and some chemical controls used (Bumper, Talstar, Suscon etc). This information is kept confidential and is used to generate a district report. It helps us see what and where the major pest and disease damage is, so we can test and give information accordingly. It also helps us trace plant sources in the event of a disease outbreak.

This information is also useful to track trends over time. For example, this year we have been able to see that imidacloprid use (Suscon, Confidor etc.) has declined over the last 10 years. With the recent grub pressure, we can advise on how essential re-introducing grub control is in pressure areas, as well as the importance of product placement.

During crop data collection we will also ask for your seedcane orders. In addition, you will receive an email early next year confirming your request for seed cane. It is very important that you submit your order since this is how we calculate our allocation of seed cane distribution to growers in 2023. If you do not place this order, we cannot guarantee that you will be able to access seed cane, particularly for the variety of your choice.

We understand this has been a very difficult crushing season, and all the information we need may not be known yet (e.g. fallow paddocks). If you have any questions, please contact your field officers.

BURDEKIN NEXT GEN GROUP

The Burdekin Next Gen group is a group of young growers from ages 18-50 years who come together to share and discuss issues that affect them and their farming systems. The focus of the group is on sugarcane production.

The next meeting is planned for early 2023. This will be a general get together for growers to mingle and raise topics of discussion for the coming season. This will provide a baseline of topics and interest areas to guide future activities.

Previous activities have included:

- the importance of succession planning, and how to approach the subject
- bus tours to other regions to learn about innovation in other cropping systems
- attending the Step Up Conference which brings together Next Gen groups from across the state

For more information or to join the mailing list contact John Nancarrow on 0447 069 887 or email jnancarrow@bps.net.au

Right: Burdekin Next Gen growers visited the Darling Downs and Northern Rivers regions to learn about irrigated and dryland cropping in those areas



TRIAL DESIGN – WHY WE RANDOMISE AND REPLICATE

Each year BPS is involved with a large number of trials. Some of these are our own trials e.g. variety strip trials, but many more are grower initiated trials. There are 4 key components to designing a successful trial.

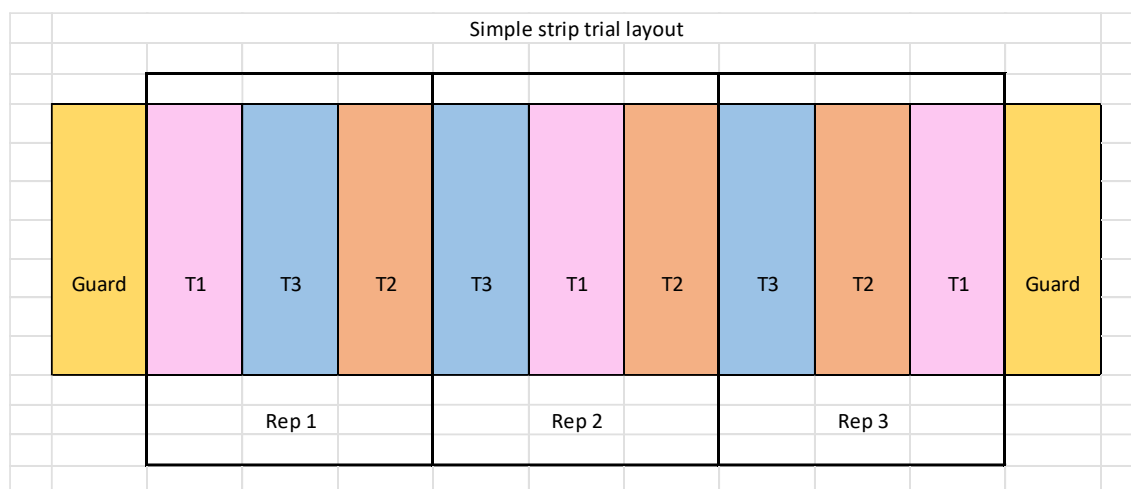
1. Site selection: ideally we want a site (block) that is as even as possible. That means, minimal soil type changes, the same variety (unless it's a variety trial), the same cropping and amelioration history, and, if possible, within a single irrigation set.
2. Deciding on the treatments i.e. what we're trying to test. This could be different varieties, different nutrient rates or different amelioration strategies.
3. Replication. A minimum of 3 replications is recommended, 4 or more is better.
4. Randomisation.

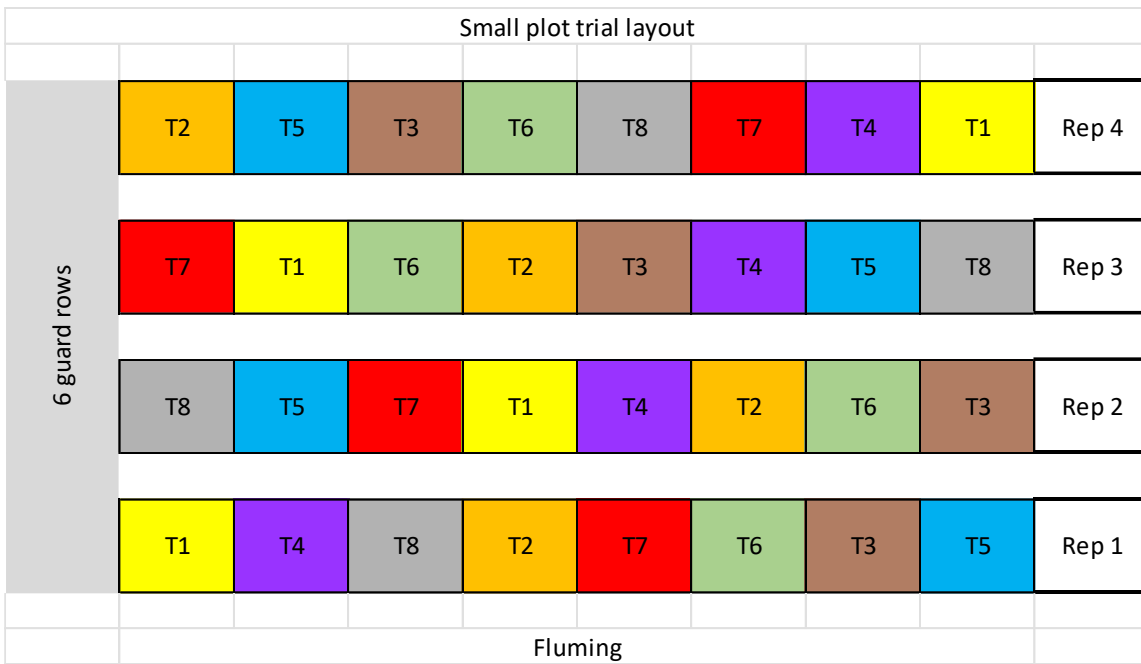
Replication and randomisation are extremely important components of trial design, but are often the least understood.

So what are replication and randomisation? Replication means that we put the same treatment into the trial multiple times. For example, in a variety trial we might have each variety repeated 3 times. Randomisation means that we mix up the order of each of those replicated treatments.

When we design a trial we decide how many replications we are going to have and then randomise the treatments within each replicate, rather than across the whole trial area. By doing this we are trying to ensure that the conditions within each replicate are as similar as possible so that all treatments have equal exposure to any differences across the block. If we just randomised our treatments across the whole block, we could, theoretically, end up with all of one treatment to one side or other of the trial site.

Following are some examples of trial layouts. The first is a simple strip trial design where we have 3 treatments and 3 replicates. Our plots run the full length of the paddock and our treatments are randomised within each replicate. The second is a more complicated layout for a small plot trial. In this case we know there is a soil type change about 300 m down the paddock, but that it is consistent across the top of the paddock. Each of our trial plots is 50 m long. In this case by laying the treatments out across the block and replicating them down, we only need 200 m to keep them all on the same soil type. If we had run the treatments down the paddock, and replicated across the top we would have needed 400 m, and some of our treatments would have ended up on the different soil type.

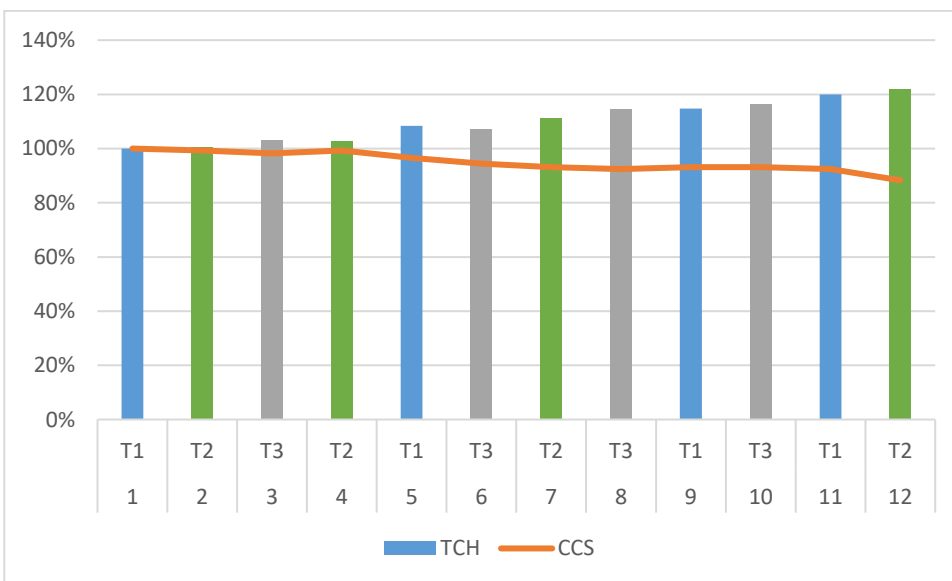




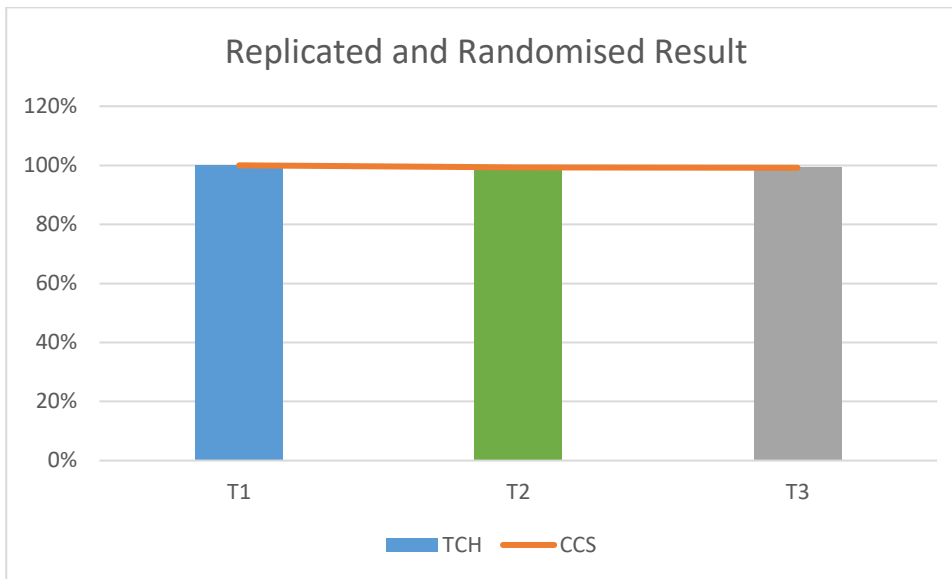
Why is it important?

Both replication and randomisation allow us to be confident that any differences we are seeing between treatments are being caused by those treatments, not some other factor. This has been very well demonstrated this year where we have harvested a couple of trials where there were very strong “block effects” that affected the trial results. When we put the trials out, it looked as though they were going onto blocks that were very even. That is, they were a single soil type and had the same cropping history, and were even in a single irrigation set. However, the trial results showed a different story.

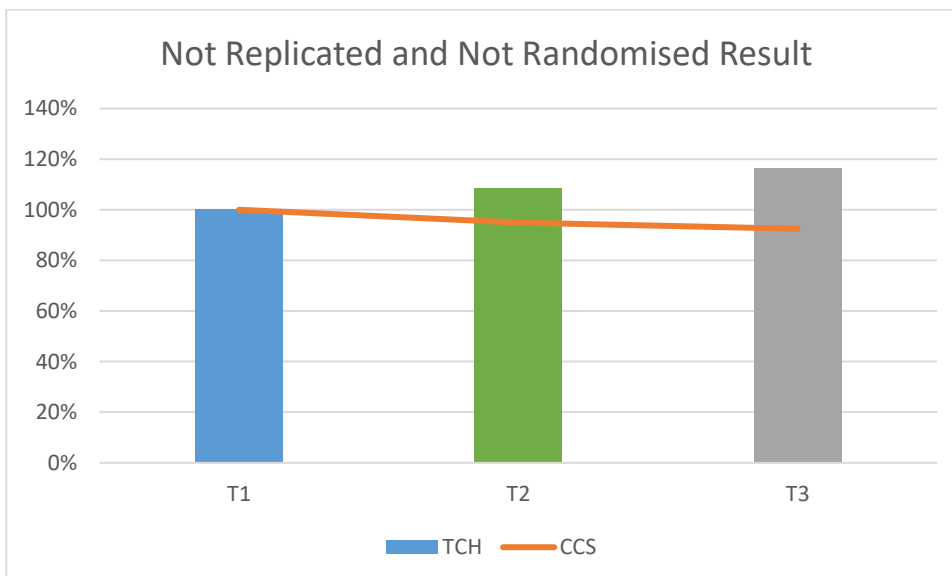
This block effect can be seen in the following graph that shows the cane and CCS yield for each 6 row plot. As we moved across the block, the cane yield increased, while the CCS decreased. The yield (cane and CCS) for the first plot has been set at 100%, and the yields for the rest of the plots have been expressed as a percentage of the first plot. As you can see, by the time we got to plot 12, the cane yield was just over 20% higher than the first plot while CCS was only 88% of the first plot.



When we analysed the trial results, we found that there was no difference in the average yields for each treatment (in this case expressed as a percentage of the treatment 1 yield). Because each of our treatments was replicated across the block some were on the higher yielding area and some on the lower yielding area.



But, what would it have looked like if we didn't replicate and randomise? The outcome would have been very different! If we assume that each treatment was only put in once – no replication – and that we just put them in as treatment 1, 2, 3 across the block it would have looked like T3 was better than T2 and much better than T1 for cane yield. The opposite would be true for CCS, T3 was worse than T2 and T1.



This trial demonstrates why we always replicate and randomise our trials, and encourage growers to do the same. While it is much easier to just split a block in half and put one treatment on one side and the other on the other side you are very likely not going to get an accurate result.

CHEMICAL TRAINING

BPS is planning to run 1 day chemical accreditation courses in February and March 2023. Exact dates will be confirmed when we have final numbers.

These courses will cover:

- AHCCHM304 Transport & store chemicals
- AHCCHM307 Prepare & apply chemicals to control pests, weeds, and diseases
- AHCPMG301 Control weeds



For more information or to register please contact John Nancarrow on 0447 069 887.

Cost will be dependant on how many register and attend.

KEY DATES

Seed Cane Orders Close: 28 February 2023 – Contact your field officer to place an order

Chemical Training Courses: February and March, 2023 – Contact John Nancarrow (0447 069 887) for more information

Burdekin Next Gen Group: Meeting early 2023 - Contact John Nancarrow (0447 069 887) for more information

Plant Source RSD Testing : minimum 3 weeks before planting – Contact your field officer to arrange

Soil Testing: minimum 3 weeks before planting – Contact any of the BPS staff to arrange

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