WIDE BAY PINEAPPLE STUDY GROUP

3rd workshop: Atkinson's farm, 25 Lawson St, Maryborough

Friday 8th November 2019

Take Home Messages

In relation to the new Great Barrier Reef legislation, it is likely that if the pineapple industry, and other commodities, are proactive enough and can demonstrate adoption of best practice management (BMP) and Reef Certification on a broad scale, then the industry may not have regulations imposed upon it.

The group formed to address the outflow of pesticides, fertilisers and soil from pineapple farms is called the Pesticide and Environmental Sustainability Team (P.E.S.T.) and is made up of operatives from the ICP (pineapple extension project), DAF sustainability team, Growcom and the Dept of Environment and Science (DES).

Growers are encouraged to register for the industry website – it is a 'one stop shop' for a whole host of industry information including progress with the demonstration trials. Contact Natalie Brady if you have any issues with gaining access.

The 2020 Annual Pineapple Industry Field Day will be held in the Bundaberg region on 23 – 24 July.

The new pineapple breeding project is about future proofing the industry.

In a trial on John Steemson's farm the rate of pre-plant fertiliser made no difference to the plant size at initiation stage.

The Atkinsons, like the Petersens, use GPS tracking to ensure that the beds are always in the same position and never driven on, this allowed up to 8 ratoons of cane.

Colin Hawken has found 'Muddy Boots' a good record keeping software programme.

Call for nominations to replace John Steemson on the Australian Pineapples committee. The industry is keen to see a regular turnover of representatives on the committee to encourage fresh ideas and so as not to over-burden individuals for extended periods. Please speak to John if you would like to find out more.

Wide Bay group inspecting a field of Aus Festival that had just been initiated

Present (23 + 15 = 38)

Growers (23): Jeff, Glenys, Farren, Nicola & Kepler Atkinson & Tom Suter & Sharon, Colin Hawken, Col Matthews, Peter Maywald, Scott Maxwell, Warren & Helen Mellross, Fenn & Scott Nielsen, Adam Payne, Ashley, David & Leyton Petersen, Phil Smith, John & Daniel Steemson, Clint Zemek (Amaryllis).

Non-growers (15): Doug Christensen (Favco), Rachel Abel, Bridie Carr, Luke Griffin, Simon Newett & Garth Sanewski (DAF Qld), Chad Simpson, Scott, Brady Gatt & Bruce Hooper (EE Muir & Sons), Sam Adam (Nufarm), Michelle Haase (Growcom), Marcus Hunt (CBA), Yolande Kliese (Maryborough Cane Productivity Services), Tim Wolens (Agri Supply Global)

Apologies: Doug Jones (Kraft Heinz Golden Circle), Harry Milbank, Dave Forsyth and Ryan (Bundaberg Sugar), Ciprian family, Shaun Rose (Commonwealth Bank)

AGENDA

12:00 midday BBQ LUNCH & DRINKS – kindly sponsored by EE Muir & Sons and Nufarm

12:45 pm MEETING

- Key points from recent AP meetings:
    - New Reef Regulations and how the industry is approaching it - new team formed to lead collaborative approach - Australian Pineapples with DAF, Growcom & the Department of Environment and Science (DES) – Tim (10 mins)
    - Mechanisation meeting – Tim/Jay Hubert (5 mins)
    - Chlorpyrifos and diazinon issue – Simon (5 mins)
- Pineapple breeding project – Garth Sanewski (10 mins)
- Effect of different pre-plant fert. rates on plant growth – John Steemson & Luke Griffin (10 mins)
- "Muddy Boots" farm recording system demo – Colin Hawken (10 mins)
- "Pineapple Press" & meeting minutes – now being circulated by Growcom (1 min)
- Production data - highlights and thanks. Six monthly update due in November with a sub-sample of growers – Simon (2 mins)
- World Pineapple Symposium in the Dominican Republic in April 2020. Group tour with possible side trip to Costa Rica – Bridie (10 mins)
- New website – demo, content and how to sign up – Bridie Carr (5 mins)
- First video – topic is 'Fruit handling', target audience is backpackers, due Nov – Bridie (5 mins)
- Harvest boom stickers – now available, template available, feedback on use – Bridie (2 mins)
- Plans for 2020 Annual Field Day in WB including possible and report on demo trials of relevance to Wide Bay – Tim Wolens & John Steemson (15 mins)

2:20 pm FARM WALK

4 pm Happy hour (kindly sponsored by EE Muir & Sons), farm critique, open discussion session, evaluation of the day, date and plans for next WB meeting

4:30pm MEETING ENDS

UPDATE ON INDUSTRY MATTERS

NEW REEF REGULATIONS

The legislation was passed by state parliament on the 19th September. Within the Reef Bill the Office of Great Barrier Reef (OGBR) (which sits within the Qld Dept. of Environment & Science) have 3 years to develop minimum standards for horticulture.

In discussions with OGBR and from advice received from Minister Enoch it is likely that if the pineapple industry, and other commodities, are proactive enough and can demonstrate adoption of best practice management (BMP) and Reef Certification on a broad scale, then the industry may not have regulations imposed upon it.

The industry is off to a good start with early adoption of 'Hort360' and the formation of the P.E.S.T. group (see below). Growcom, via its 'Hort360GBR' project, is developing 'Reef Certification' which links 'Hort360' to components of 'Freshcare Environmental'.

Already 18 pineapple growers out of approximately 44 in the GBR catchment have, to a varying extent, satisfied the needs of the 'Reef Certification' module within 'Hort360'.
Adoption of Growcom's 'Hort360' by growers is seen as a key step that growers can take to demonstrate BMP.

N.B. At this point growers are advised not to undertake 'Freshcare Environmental' since it includes material that is not applicable to pineapples. Rather they should focus on 'Hort360'. 'Hort360 Reef Certification' will require an audit by a 3rd party accredited auditor every 3 years and Growcom is looking at subsidising this audit for growers via the 'Hort360GBR' project.

Many thanks to Scott Wallace at Growcom for clarifying the above information.

Growcom's Rowena Beveridge has provided the following information that reinforces the discussion above:

Minister Enoch has identified participation in 'Hort360', the horticulture industry's best management practice program, as the mechanism we can use to prove that regulating minimum practice standards is unnecessary.

Growcom, with the Department of Environment and Science, is currently developing a 'Reef Certification' that growers will be able to achieve through 'Hort360'. The 'Reef Certification' will enable growers to demonstrate their improved practices are resulting in better quality water reaching the GBR.

For now, if you're a grower in a GBR catchment, the best way to ensure you keep informed as the 'Reef Certification' is finalized is to register for 'Hort360'.

Further enquiries can be directed to Mr Scott Wallace at Growcom swallace@growcom.com.au
Mobile: 0408 135 002

'PINEAPPLE ENVIRONMENTAL & SUSTAINABILITY TEAM' (P.E.S.T.)

As reported in the minutes from the previous workshop, Australian Pineapples (AP) is leading the push to address environmental concerns in the industry.

The P.E.S.T. team has been formed to work together to develop a long term plan of action to address the environmental issues faced by the industry. This will include establishing a number of research and demonstration trials which will be conducted, showcased and reported on to industry through the study group meetings, 'Pineapple Press' newsletter, annual field day and the Australian Pineapples website. It will incorporate regular team meetings to maintain the momentum.

Jane Muller from Growcom will be coordinating the P.E.S.T. team.

The team includes:

1. Australian Pineapples regional representatives
2. Growcom (Jane Muller, Rowena Beveridge and Lene Knudsen)
3. The DAF sustainability group (Stuart Irvine-Brown, Rachel Abel and Luke Griffin)
4. The Integrated Crop Protection (ICP) project (the extension project conducted by Simon Newett and Bridie Carr from DAF, Tim Wolens from Agri Supply Global and Natalie Brady from Growcom).
5. Input from time to time from The Department of Environment & Science (DES)
6. Input from Susie Chapman at 'Healthy Land and Water' and other groups such as the Burnett Mary Group.

The industry should be commended on its proactive approach and its willingness to adopt 'Hort360' as one of the main enablers and means of achieving recognition for its efforts.

CALL FOR WIDE BAY REPRESENTATIVE

John is still looking for a grower to take a turn as representative for Wide Bay to replace him on the Australian Pineapples committee. The industry is keen to see a regular turnover of representatives on the committee to encourage fresh ideas and so as not to over-burden individuals for extended periods. Please speak to John if you would like to find out more.

ANNUAL FIELD DAY 2019 and 2020

Feedback on the field day earlier this year – there was a suggestion that we need to include something specifically for women and perhaps to include a specific award for women in the pineapple industry.

Plan for 2020 industry field day

Day 1: Thursday 23rd July – visit Amaryllis Farm (Jay Hubert & family and Clint Zemek) – looking specifically at mechanisation. Gala dinner that evening.

Day 2: Friday 24th July – visit Littabella Pines (Steemson family) – looking specifically at pineapple trials that are part of the ICP project.

The trade displays which are vital to help fund the day are likely to be held on Friday morning at the Steemson's farm.

Growers were asked if there was any interest in organising a third day of activities, e.g. visiting some local agriculture related businesses of which there are many of interest in the Bundaberg region. A show of hands indicated 4 in favour 14 against. Perhaps something could be fitted in on the Thursday?

An issue was raised about the cost of the field day, in particular they would like to see a package deal for small growers that would include husband and wife and perhaps an employee or two for a discounted price.

POSSIBLE CHANGES TO USE OF CHLORPYRIFOS AND DIAZINON – Simon Newett

APVMA has flagged possible changes to the use of several pesticides which include two commonly used in the pineapple industry - chlorpyrifos and diazinon. The issue is that they are so commonly used that APVMA is concerned that both farm staff and consumers may be over exposed to them. Janine Clark at Growcom has submitted typical use patterns on pineapple farms to the APVMA and draft new guidelines are expected to be issued shortly. They may include longer re-entry periods, more Personal Protection Equipment requirements and perhaps restrictions on how many times they may be used. The industry will have a chance to comment on the new draft guidelines when they are issued.

PINEAPPLE BREEDING PROGRAMME – Garth Sanewski

Garth is 7 months into this 5-year project which is inclusive of the whole industry.

Garth Sanewski next to one of his seedling plantings which is part of the breeding project

The focus is on fresh fruit varieties. The project is not about looking at vastly improving fruit quality, rather it's about 'future proofing' the industry for the very diverse climatic regions and providing

back-stops in case of issues such as disease. Currently we are very dependent on two fresh fruit varieties (73-50 and MD2) which are both highly susceptible to root rot and natural flowering. In the case of root rot, this means there is almost total reliance on the use of pesticides - if these are withdrawn then the whole industry is at risk. There is an opportunity to reduce this susceptibility, as root rot is relatively easy to fix genetically. In addition, we need to test our varieties for resistance to *Dickeya* species (fruit collapse). Promising varieties will be screened for resistance to *Dickeya* at Mareeba and in the Northern Territory where two different strains exist. Another aspect is to look at the suitability of varieties to mechanical harvesting.

Garth has planted out seedlings at Jeff Atkinson's farm for testing and also has plantings at Rollingstone in North Queensland and in SE Qld. There are plans for more to be planted out in Mareeba and Yeppoon.

The aim of the project is to release 6 to 12 promising new varieties for industry to take to the next stage of testing. Ideally these new varieties would have a greater degree of resistance to root rot, blackheart, translucency and natural flowering. He is looking for a robust variety (relatively firm for a longer shelf life and more tolerant of handling) with a brix of about 16 to 17, one that has an average of about 1 to 2 slips (73-50 often has too many) and will ratoon well.

Natural flowering is complex because it can be triggered by a wide range of causes which include cold, heat and drought. Therefore, different genes are involved in giving resistance.

Garth asked growers for comment on what the main issues are. Growers said that root rot and natural initiation are the main two but not to forget about yield too. For example, Aus Jubilee is a great tasting variety and has a niche market but is often too small to provide the tray numbers for growers to make a profit out of it. It is heavy for its size but it is size that counts for giving tray numbers. With varieties such as 73-50 and MD2 the industry has created an expectation for a good tasting fruit.

Michelle Haase suggested varieties more resistant to heat and sunburn. Garth said that he was already doing this by favouring those with shorter fruit stems so they sit deeper within the plant (like Aus-Jubilee) and have larger crowns and so for these two reasons are more shaded. However, he pointed out that a short fruit stem probably did not lend itself well to mechanical harvesting.

An important part of the process is to get feedback about the seedlings from growers.

EFFECT OF DIFFERENT PRE-PLANT FERTILISER RATES ON PLANT GROWTH – John Steemson (Littabella Pines) and Luke Griffin (DAF)

John trialled three different rates of pre-plant fertiliser (875, 580 and 295 kg/ha of CK77S) and Luke and his team measured plant growth. The highest rate is Littabella's standard rate. The trial was planted over the period June to August 2018 and plants were measured at flower induction time (August/September). From each of the four treatments, 24 plants were sampled with their leaf, stem, root and total weight measured as well as their stem diameter. Fruit is scheduled to be harvested in Feb-Mar 2020. All treatments subsequently received the same post plant fertiliser consisting of 12 foliar sprays of urea and potash and less frequent sprays of magnesium, zinc and iron sulphates.

The plan is to record yields when it is harvested next year and perhaps assess the quality too.

The results showed no appreciable difference between any of the treatments indicating that pre-plant applications in this case could have been reduced or perhaps even eliminated, not only saving about $500/ha but also reducing the potential for nutrients to leave the farm in runoff.

Ashley suggested next time that leaf analyses should be done since the nutrient status of leaves is often a better predictor of yield than plant size. Another suggestion is to save the fertiliser originally destined for pre-plant and put it on later when the plants are bigger and more able to use it.

'MUDDY BOOTS' RECORD KEEPING SOFTWARE DEMONSTRATION – Colin Hawken

Colin has found the programme and company staff excellent to deal with. Use is by annual subscription and Colin has the minimum package and this costs $400/year. The programme is loaded onto a computer but information can be entered and looked up via smart phone or tablet. Information is stored on the 'cloud'.

As well as using it to keep pineapple block records Colin also uses it to keep records of farm machinery maintenance.

Colin showed block maps (subsets of what appear to be aerial or satellite photos), spray and fertiliser records, 'inspections' which could include photos and observations and reports.

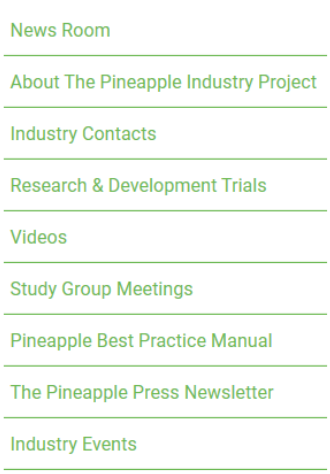
Costings can also be done. Tutorials are available on the site and the more pineapple growers that adopt this programme the more likely the company is prepared to make changes to suit pineapple growers.

Growers can get a month's free trial and it was pointed out that records and reports could be exported to MS Excel spreadsheets.

The program also makes it easier for the user to prepare for audits with the added bonus that auditors like electronic record keeping systems. For further information go to http://en.muddyboots.com/

PINEAPPLE WEBSITE – BRIDIE CARR

Bridie gave an overview of the new pineapple website and encouraged everyone to register for a username and password. The website is the "one stop shop" for industry members to be aware of upcoming events, key contacts, access the "Pineapple Press", study group workshop minutes, electronic version of the Best Practice Manual, links to YouTube videos, information on the demonstration trials and a chance to comment on them and ask questions online.



To access the website and register for a username and password, go to www.australianpineapples.com.au and double click on the dropdown box under 'LINKS'. Registering for a username and password is easy, but if you have any issues do not hesitate to contact Bridie or Natalie Brady at Growcom who are more than happy to give you a hand.

A handout was available at the meeting, which gave a comprehensive overview of what the website involved. For those that would like a copy or have any questions, please contact Bridie Carr or Natalie Brady.

Natalie Brady: **Phone:** 07 3620 3863 | **Mobile:** 0406 387 381 | **Email:** nbrady@growcom.com.au

Bridie Carr: Phone: 07 5381 1327| **Mobile:** 0436 675 740 | **Email:** bridie.carr@daf.qld.gov.au

All growers are strongly encouraged to register for access to the website so they can be involved in industry activities, have access to industry resources, and be well informed on the outputs that are a result of the demonstration trials taking place as part of the new levy funded project.

Fresh fruit packing line and 8th ratoon sugar cane on GPS protected-planting beds

PRODUCTION DATA COLLECTION – Simon Newett

Simon thanked everyone for their cooperation in contributing their pineapple statistics for the annual detailed collection in May this year. A summary was published in an earlier version of the "Pineapple Press" and is provided here as an appendix to these minutes. A half yearly update will be conducted this month (November) which will entail contacting a sample of growers from each region to see if projected production is on track or needs to be adjusted. Another full collection of data will fall due in April/May next year.

OVERVIEW OF PINEAPPLE OPERATION – Jeff Atkinson and Tom Suter

Jeff is a fourth generation pineapple grower, his family first started growing pineapples in the Nambour region.

On this farm and elsewhere in the Maryborough region Jeff and his two sons Kepler and Farren have grown pineapples, sugarcane, cotton, soybeans, peanuts as well as barley and oats for hay. Pineapples and sugarcane are their main two crops.

On this farm they plant 240,000 per year, 65-70% of which are hybrids and the balance Smooth Cayenne (predominantly Clone 10). The hybrids are 73-50, and the FAVCO varieties Aus-Jubilee® and Aus-Festival®. No cannery fruit is grown.

The business has a packing line for their pineapples and also pack for Phil Smith and the Petersens. They have their own refrigerated semi-trailers to transport the fruit to market and generally backload with the cartons. They are HARPS certified and fruit often goes directly to the supermarket chains.

Similar to the Petersen's they use GPS for field operations, keeping the same 2m wheel tracks year after year so these are compacted and good for machinery traction and the bed is never driven on so the soil is open and not compacted. As an indication of how good this is for the crops they have a field of 8th ratoon sugarcane. Doug Christen pointed out that one of the downsides to 4 row pineapple beds was that the plants in the centre tend to be more shaded.

Jeff said one of the biggest issues was nutgrass and this was followed by blue top. The cotton crop they grow is 'Roundup Ready' so during this crop rotation it gives them an opportunity to clean up the fields with glyphosate.

Machinery

Harvester showing de-topper on the harvest trailer

After inspecting the packing line, we looked at machinery including the harvester which has a 'rabbit ear' de-topper on the trailer rather than on the boom. A tractor-mounted camera (cost $3,000) is used to steer the harvester rather than equipping another tractor with GPS which is expensive.

The cultivating rig (left) and mill mud spreader (right) which is co-owned

The four row cam planter (left) and the fertiliser drill (right)

Tom Suter explained that the Aus-Festival® is planted at 53,000/ha whilst the Smooth Cayenne is planted at 60,000/ha. Tom and Ashley agreed that Aus-Festival® (bred for a summer January to March harvest) are about on a par with MD2 for susceptibility to heart rot and Phytophthora. He said that Aus-Festival® was like a southern version of MD2. It suckers better than MD2, being on a par with Smooth Cayenne with about 1 sucker per plant (compared with 73-50 which over-suckers).

Immediately after plant crop harvest Jeff runs a multi-blade mower over the mother plants and this allows the suckers to come through faster and stronger

The four row beds are never driven on thanks to GPS being used to set them up each cycle. These were graded Aus-Festival® tops planted in June, it was very dry at the time.

The Aus-Festival® in the foreground was planted at the same time as the Smooth Cayenne in the background. Smooth Cayenne is typically more robust than other varieties.

Tom Suter describing the history of the Aus-Festival® field that has just been initiated

FARM CRITIQUE – Tim Wolens

Good to see growers looking to evolve their operations with new ideas through machinery development. Interesting to see such a wide range of varieties outside of smooth and 73-50 and their individual characteristics. In general, the farm is very neat and well maintained, the health of the plants is good. More focus is required on root health.

NEXT MEETING

The next one will be held around May next year.

EVALUATION OF THE DAY

A show of hands was requested to respond to a few questions to evaluate how worthwhile the day had been.

Question	Show of hands
Was the length of the meeting about right?	All said 'yes'
Was the inspection of machinery useful?	All said 'yes'
Were the field visits useful?	All said 'yes'
Was it a good day for 'networking', i.e. catching up with other growers and service providers?	All said 'yes'
Is there is something that you have seen or learned today that could result in you making a change (even a small change) on your farm?	Four growers said they were going to take a closer look at 'Muddy Boots'. 'Good to see the other pineapple varieties growing' Others were going to re-visit their rate of pre-plant fertiliser.
Can you suggest any improvements for the next meeting?	-
Any ideas for the venue and topics of the next meeting?	More information about 'Hort360'. Join forces with CQ group on trip to see other enterprises near Emerald.

APPENDICES

Summary of production data for 2018 and forecast for 2019.

Presentation by John Steemson and Luke Griffin on different rates of pre-plant fertiliser

ACKNOWLEDGEMENTS

Very many thanks to the Atkinson family for hosting the day, and to EE Muir & Sons and Nufarm for providing the BBQ lunch and drinks.

Simon Newett, Bridie Carr and Tim Wolens

These workshops are part of the project "Improved viability and sustainability of the Australian pineapple industry" (PI17001) which is a strategic levy investment under the Hort Innovation Pineapple Fund. The project is delivered by the Department of Agriculture and Fisheries, Agri Supply Global and Growcom and funded by Hort Innovation using the pineapple industry research and development levy, with co-investment from the Queensland Department of Agriculture and Fisheries, and contributions from the Australian Government.

APPENDIX F: PINEAPPLE INDUSTRY PRODUCTION DATA SUMMARY FOR 2018 AND FORECAST FOR 2019 (updated 8 July 2019)

This data was collected in May 2019. The information for Golden Circle cannery was supplied by Kraft Heinz and almost every fresh fruit grower in the industry submitted data (not always complete) for the fresh market and other processors, only 2% of production had to be estimated by the authors. Pineapple production data is complex for a number of reasons, it is not an annual crop, taking 16 to 23 months to grow a 'plant' crop and 12 to 19 months for a 'ratoon' crop (depending on district and time of year planted), not all 'plant' crops are ratooned (the % ratooned ranges from 0 to 100%) and plantings of Smooth Cayenne variety intended for the processing market may end up being sent to the fresh market and vice versa. However the authors believe that this data represents the most comprehensive set collected in recent years.

Table 1: 2018 - TOTAL TONNES of PROCESSING AND FRESH

REGION	Kraft Heinz process	Other process	TOTAL PROCESS	*% of process*	FRESH	*% of fresh*	TOTAL	*% of total*
NQ/NT	-	25	**25**	*0%*	**9,661**	*20.6%*	**9,686**	*13%*
CQ	3,588	-	**3,588**	*13.1%*	**10,081**	*21.5%*	**13,669**	*18%*
WB	11,461	213	**11,674**	*42.5%*	**8,259**	*17.6%*	**19,933**	*27%*
SEQ	10,357	1,804	**12,161**	*44.3%*	**18,875**	*40.3%*	**31,036**	*42%*
TOTAL	25,406	2,042	**27,448**		**46,876**		**74,324**	
	34%	*3%*	*37%*		*63%*			

Table 2: 2019 - TOTAL TONNES forecast for PROCESSING AND FRESH

REGION	Kraft Heinz process	Other process	TOTAL PROCESS	*% of process*	FRESH	*% of fresh*	TOTAL	*% of total*
NQ/NT	-	25	**25**	*0%*	**11,210**	*24.7%*	**11,235**	*16%*
CQ	4,040	-	**4,040**	*16%*	**7,722**	*17%*	**11,762**	*17%*
WB	9,925	120	**10,045**	*40%*	**6,954**	*15.3%*	**16,999**	*24%*
SEQ	9,118	1,940	**11,058**	*44%*	**19,484**	*42.9%*	**30,542**	*43%*
TOTAL	23,083	2,085	**25,168**		**45,370**		**70,538**	
	33%	*3%*	*36%*		*64%*			

Table 3a: 2018 – TOTAL NUMBER FRESH FRUIT PLANTS (plant and ratoon) in the ground by VARIETY

REGION	Smooth Cayenne	73-50	MD2	Aus-Jubilee	Aus-Festival	Rough	TOTAL	Regional split
NQ/NT	3,293,000	4,213,482	6,003,770	134,347	-	136,111	**13,780,710**	*23.1%*
CQ	3,503,000	3,548,848	1,580,551	-	-	1,000	**8,633,400**	*14.5%*
WB	10,491,848	4,971,846	66,206	201,400	166,667	5,000	**15,902,968**	*26.7%*
SEQ	4,925,040	14,690,316	176,739	1,006,389	420,556	-	**21,219,040**	*35.6%*
TOTAL	**22,212,888**	**27,424,493**	**7,827,266**	**1,342,136**	**587,222**	**142,111**	**59,536,118**	
Variety split	*37.3%*	*46.1%*	*13.1%*	*2.3%*	*1.0%*	*0.2%*		

Table 3b: 2018 - PERCENT FRESH FRUIT PLANTS (plant and ratoon) in the ground by VARIETY

REGION	Smooth Cayenne	73-50	MD2	Aus-Jubilee	Aus-Festival	Rough	Regional split
NQ/NT	23.9	30.6	43.6	1.0	0.0	1.0	*23.1%*
CQ	40.6	41.1	18.3	0.0	0.0	0.0	*14.5%*
WB	66.0	31.3	0.4	1.3	1.0	0.0	*26.7%*
SEQ	23.2	69.2	0.8	4.7	2.0	0.0	*35.6%*
Variety split	*37.3%*	*46.1%*	*13.1%*	*2.3%*	*1.0%*	*0.2%*	*100%*

Table 4: 2018 & 2019 – SOURCE OF KRAFT HEINZ FRUIT from PLANT and RATOON CROPS

REGION	Plant crop	Ratoon crop
	2018	
NQ/NT	0	0
CQ	9.3%	6.6%
WB	29.2%	22.1%
SEQ	19.3%	13.4%
TOTAL	*58%*	*42%*

Plant crop	Ratoon crop
2019	
8.3%	9.1%
27%	16.1%
22.8%	16.6%
58%	*42%*

Note: often fruit from the plant crop is sent to the fresh market whilst fruit from its ratoon is sent for processing, also more Smooth Cayenne plants are ratooned than fresh fruit hybrid varieties, this helps explain the apparent disparity between percent ratooned in processing vs fresh crops.

Table 5: 2018 – TOTAL NUMBER FRESH FRUIT PLANTS in the ground by PLANT and RATOON

REGION	Plant crop	Ratoon crop	*% ratoon*	Total
NQ/NT	8,286,755	5,493,955	*40%*	**13,780,710**
CQ	5,687,500	2,945,900	*34%*	**8,633,400**
WB	9,700,810	6,202,158	*39%*	**15,902,968**
SEQ	16,763,042	4,455,998	*21%*	**21,219,040**
TOTAL INDUSTRY	**40,438,107**	**19,098,011**	***32%***	**59,536,118**
	68%	*32%*		

2018 - TOTAL NUMBER PROCESSING PLANTS (plant and ratoon) in the ground = 62,621,001

2018 - TOTAL NUMBER PROCESSING AND FRESH FRUIT PLANTS (plant and ratoon) in the ground = 122,157,119 (122 million)

Table 6: 2018 - Range of PLANTING DENSITIES for FRESH FRUIT

REGION	Planting density (plants per hectare)		
	Lowest	**Highest**	**Average**
NQ/NT	49,400	65,702	**55,655**
CQ	48,000	54,340	**50,723**
WB	42,000	65,000	**52,266**
SEQ	49,400	66,690	**56,138**
Approximate average	**47,200**	**62,933**	**54,178**

Table 7: 2018 - TOTAL AREA (hectares of plant and ratoon) PROCESSING AND FRESH of each variety

REGION	TOTAL PROCESSING	Fresh fruit area by variety						TOTAL FRESH	PROCESSING AND FRESH
	Smooth Cayenne	Smooth Cayenne	73-50	MD2	Aus-Jubilee	Aus-Festival	Rough		
NQ/NT	-	63.1	79.2	96.8	2.5	-	2.6	**244.1**	**244.1**
CQ	161.2	63.3	70.6	31.7	-	-	0.02	**165.6**	**326.8**
WB	559.3	191.2	84.2	1.1	3.9	3.1	-	**283.5**	**842.8**
SEQ	422.4	90.2	258.0	3.1	17.8	7.5	0.1	**376.5**	**798.9**
TOTAL INDUSTRY	**1,143.2**	**407.7**	**492.0**	**132.7**	**24.1**	**10.6**	**2.8**	**1069.8**	**2,213**
PROCESS & FRESH	*51.7%*	*18.4%*	*22.2%*	*6.0%*	*1.1%*	*0.5%*	*0.1%*	*48.3%*	**TOTAL AREA 2,213**

Table 8: 2019 - TOTAL AREA (hectares of plant and ratoon) forecast PROCESSING AND FRESH of each variety

REGION	TOTAL PROCESSING	Fresh fruit area by variety						TOTAL FRESH	PROCESSING AND FRESH
	Smooth Cayenne	Smooth Cayenne	73-50	MD2	Aus-Jubilee	Aus-Festival	Rough		
NQ/NT	-	27.5	52.6	99.7	1.6	-	3.1	**186.3**	**186.3**
CQ	151.5	131.9	79.3	12.2	-	-	-	**223.3**	**374.8**
WB	518.5	218.8	97.9	-	3.8	1.8	0.6	**321.0**	**839.6**
SEQ	417.5	104.8	294.6	19.4	20.1	7.6	0.1	**446.6**	**864.0**
TOTAL INDUSTRY	**1,087.4**	**482.9**	**524.2**	**109.7**	**25.4**	**9.5**	**3.8**	**1177.3**	**2,265**
PROCESS & FRESH	*48.0%*	*21.3%*	*23.1%*	*5.8%*	*1.1%*	*0.4%*	*0.2%*	*52%*	**TOTAL AREA 2,265**

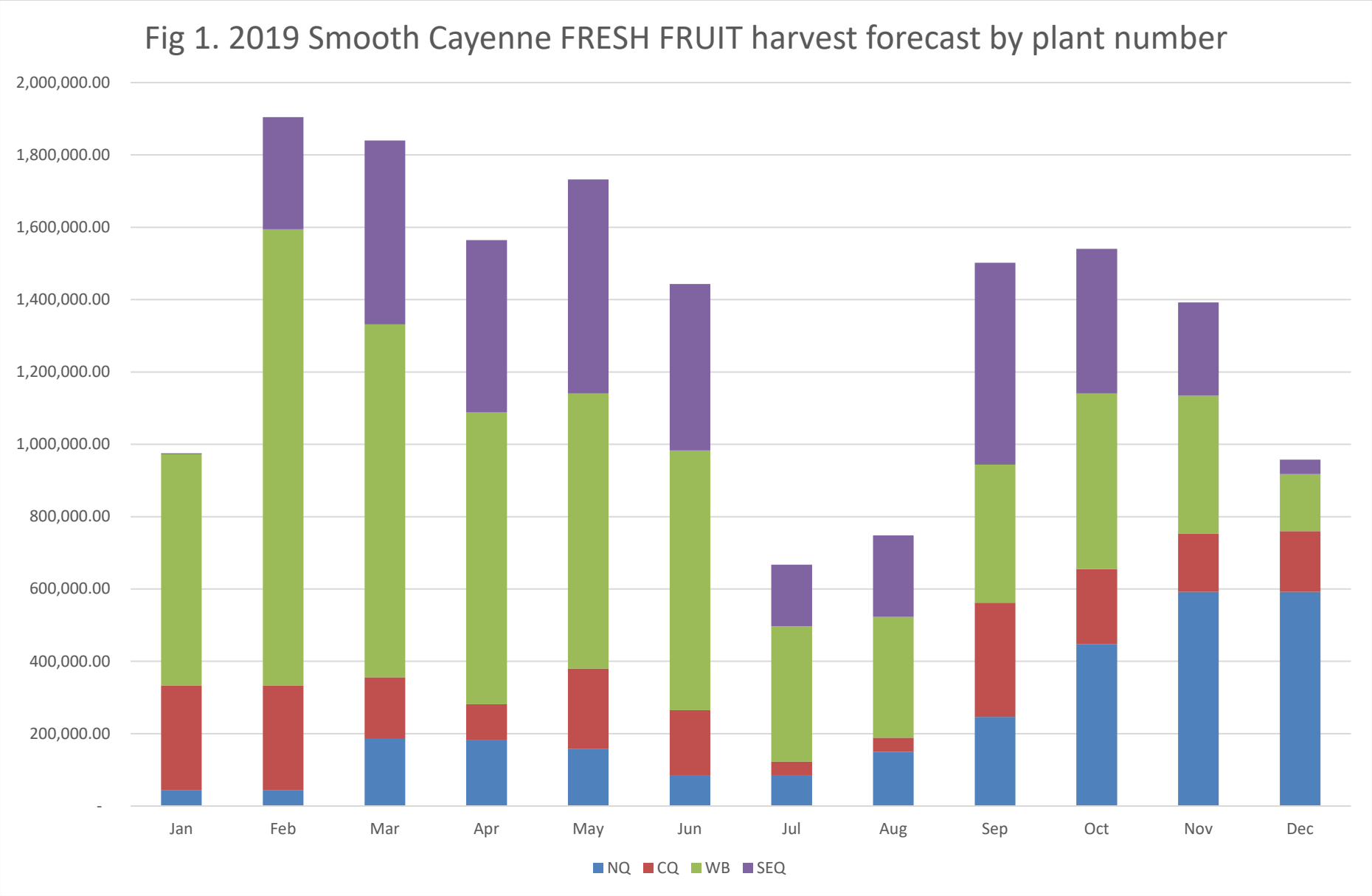


Fig 1. 2019 Smooth Cayenne FRESH FRUIT harvest forecast by plant number
2,000,000.00
1,800,000.00
1,600,000.00
1,400,000.00
1,200,000.00
1,000,000.00
800,000.00
600,000.00
400,000.00
200,000.00
-
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
NQ
CQ
WB
SEQ

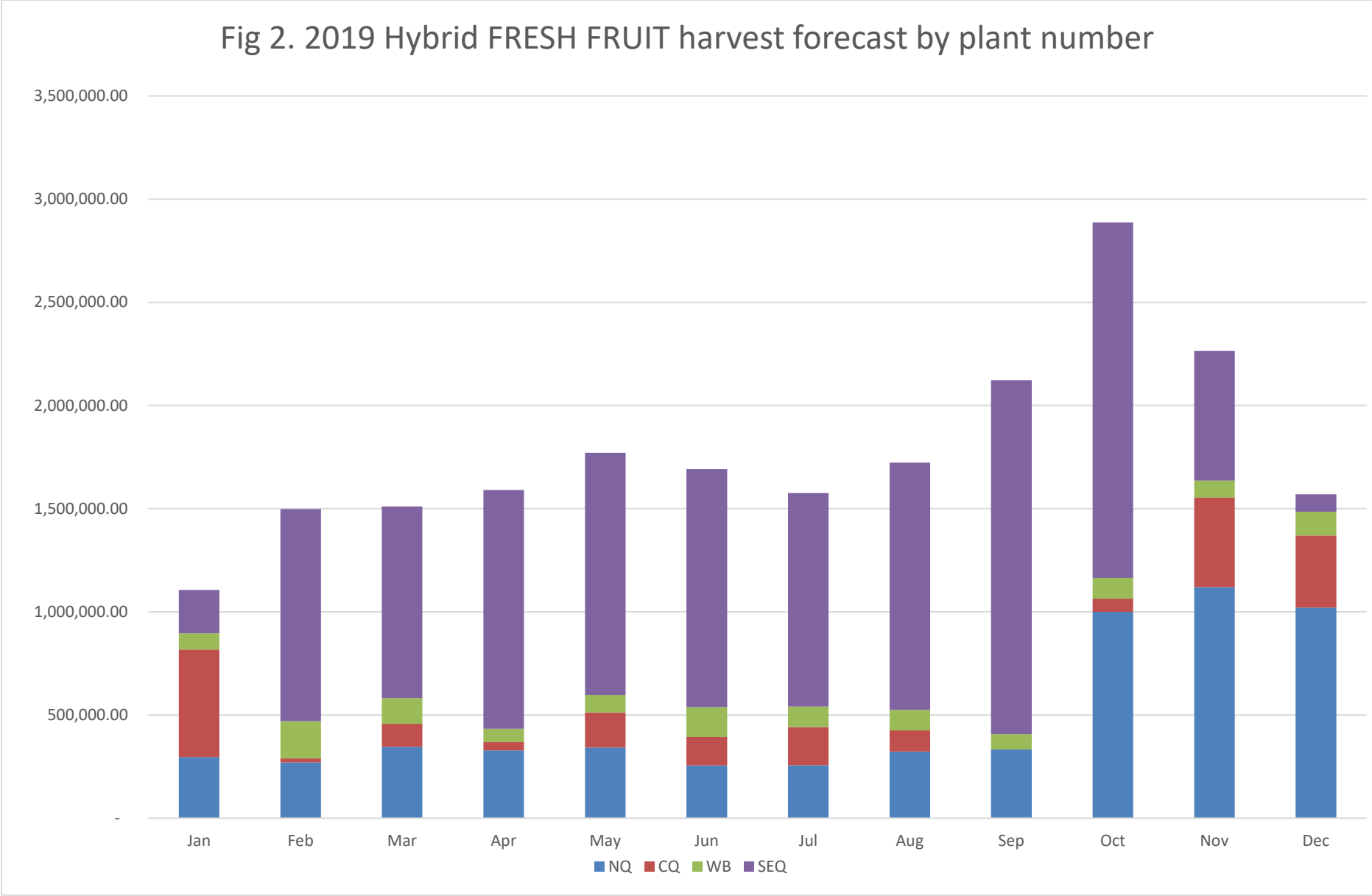


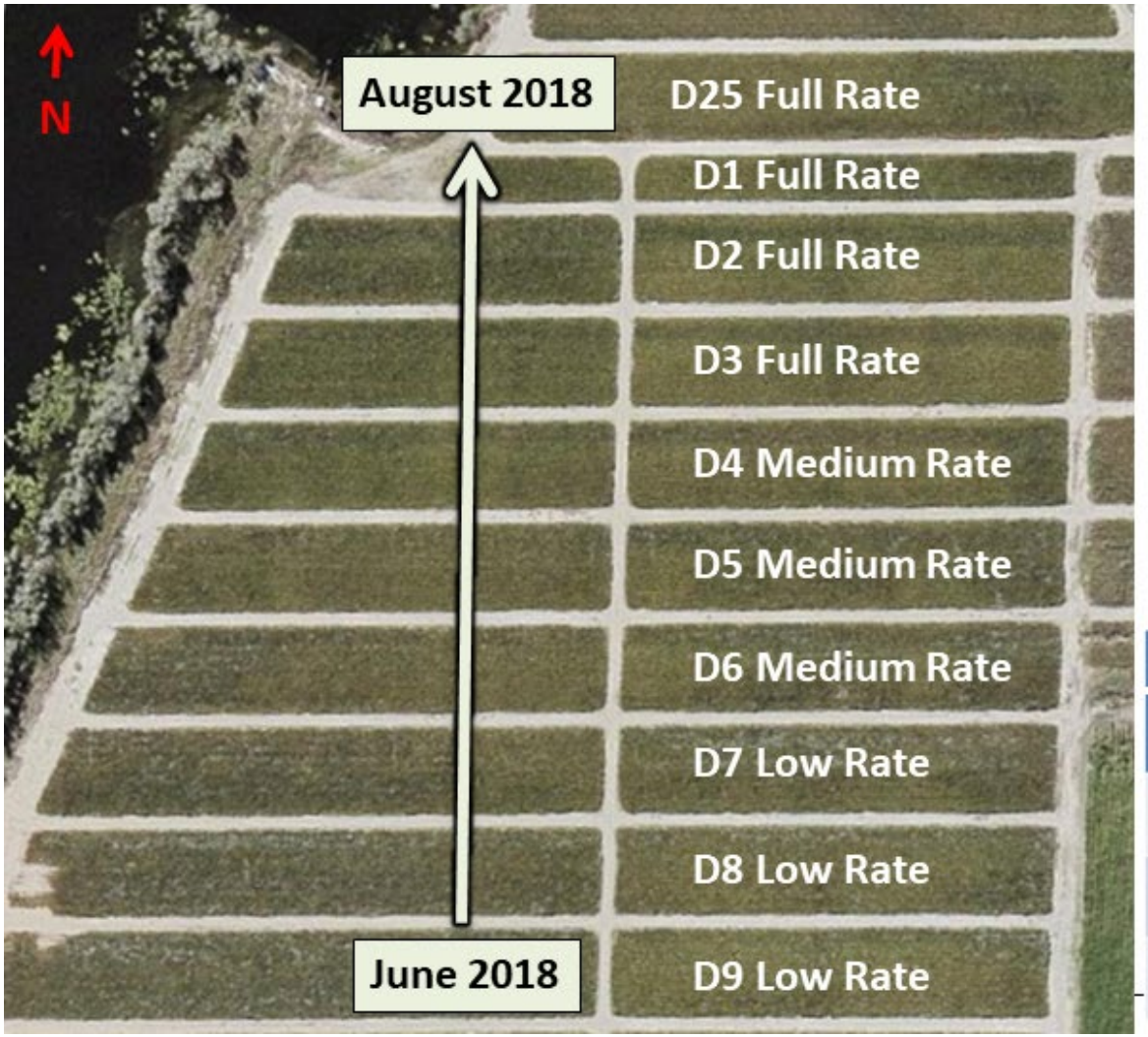
Fig 2. 2019 Hybrid FRESH FRUIT harvest forecast by plant number
3,500,000.00
3,000,000.00
2,500,000.00
2,000,000.00
1,500,000.00
1,000,000.00
500,000.00
-
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
NQ
CQ
WB
SEQ

Effect of Different Pre-plant Fertiliser Rates on Plant Growth

John Steemson and Luke Griffin

Wide Bay Pineapple Study Group Meeting – 08/11/2019

Queensland Government



Trial Layout

- Planted June - August 2018
- Smooth cayenne (F180)
- 3 different rates of pre-plant CK77(S)
- Induced to flower August - September 2019
- Harvest in late February - March 2020

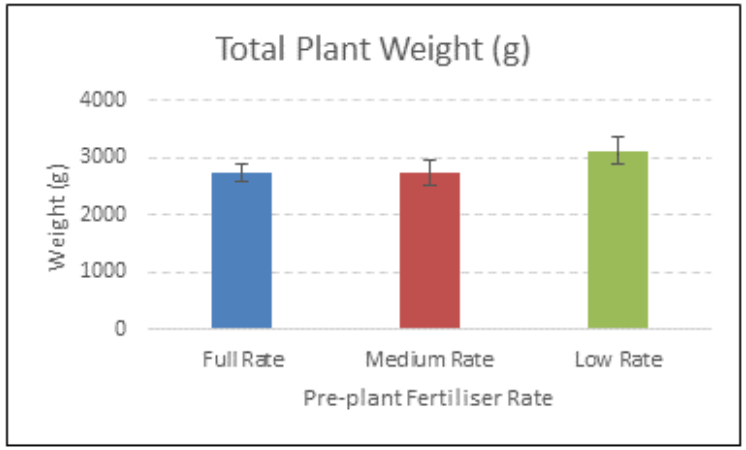
CK77(S)				
Rate	N (kg/ha)	P (kg/ha)	K (kg/ha)	S (kg/ha)
Full 875kg/ha	116	19	118	171
Medium 580kg/ha	77	13	78	113.5
Low 295kg/ha	39	6.5	40	57.5

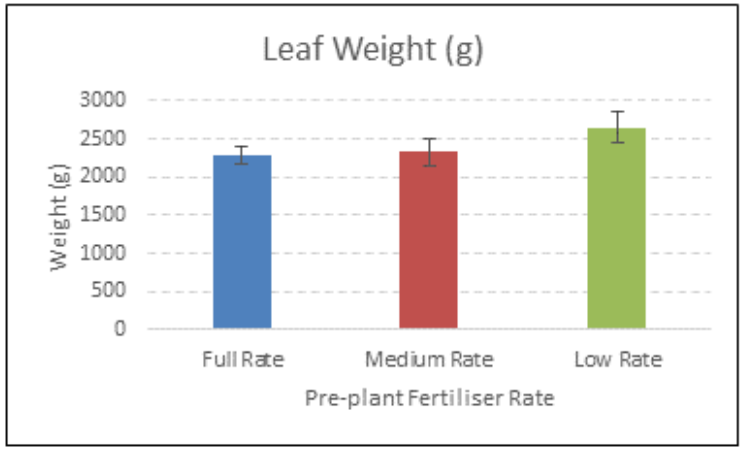
Methods

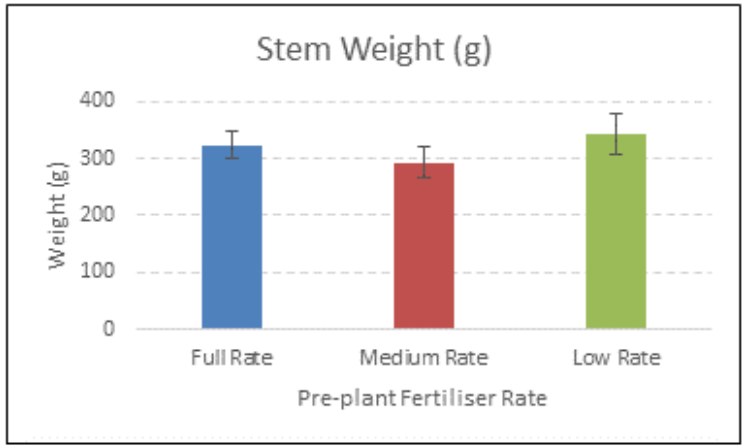
- 72 plants sampled in total
  - 24 from each pre-plant fertiliser rate
- Sampled at approx. flower induction stage
- Plant growth measured in:
  - total plant weight
  - leaf weight
  - root weight
  - stem weight
  - stem diameter

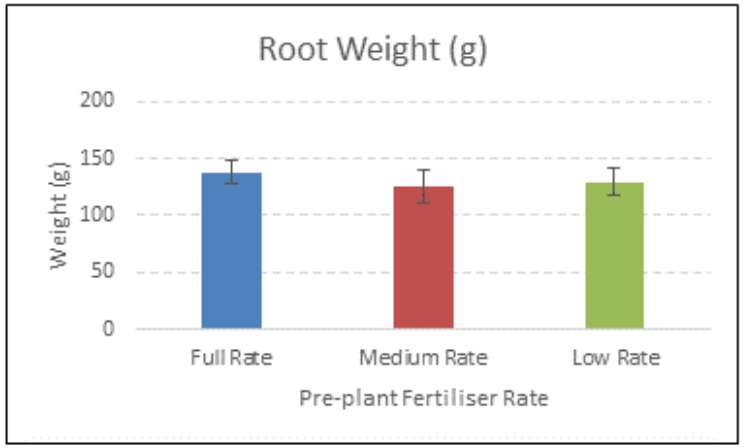
Sampling and Processing Procedure

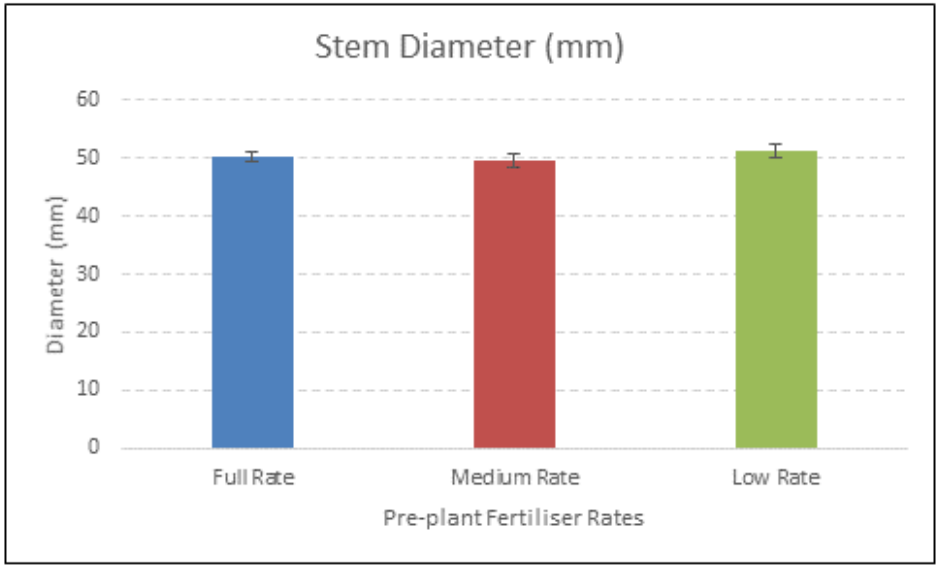
Department of Agriculture and Fisheries


Total Plant Weight (g)
Weight (g)
4000
3000
2000
1000
0
Full Rate
Medium Rate
Low Rate
Pre-plant Fertiliser Rate


Leaf Weight (g)
Weight (g)
3000
2500
2000
1500
1000
500
0
Full Rate
Medium Rate
Low Rate
Pre-plant Fertiliser Rate


Stem Weight (g)
Weight (g)
400
300
200
100
0
Full Rate
Medium Rate
Low Rate
Pre-plant Fertiliser Rate


Root Weight (g)
Weight (g)
200
150
100
50
0
Full Rate
Medium Rate
Low Rate
Pre-plant Fertiliser Rate


Stem Diameter (mm)
60
50
40
30
20
10
0
Diameter (mm)
Full Rate
Medium Rate
Low Rate
Pre-plant Fertiliser Rates

Take Home Messages

- Plants performed just as well on the lower rate of pre-plant fertiliser compared to the full and medium rate
- This indicates there was an adequate supply of nutrients to the plants from foliar sprays and residual nutrients in the soil from previous crop residues
- Slight differences can most likely be attributed to the quality of planting material and time in the ground
- Pre-plant nutrition is still important, but higher rates may not have any benefit on plant growth and development
- Using lower rates of pre-plant fertiliser will reduce the potential for nutrient losses, while saving on production costs

Contact Details

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