



mackay area productivity services



## **ANNUAL REPORT AND FINANCIAL STATEMENT**

**FOR THE PERIOD  
1 APRIL 2018 TO 31 MARCH 2019**

# MISSION STATEMENT

**Enhancing the profitability and sustainability of the sugar industry in the Mackay district through improvements in plant protection and productivity programs.**

## **Objectives**

- 1. Minimise crop loss through advice and assistance about the prevention, control and eradication of pest and disease infestations of cane**
  - 1.1 Provision of high quality pest and disease advisory service
  - 1.2 Provision of programs to monitor and control pest and diseases
  - 1.3 Provision of improved access to pest and disease information via the regional industry computer database
  - 1.4 Education of growers regarding pests and diseases
  - 1.5 Maintaining crop hygiene and quarantine standards
- 2. Maximise the sustainable value of cane production in Mackay Sugar district**
  - 2.1 Provide advice and assistance on maximising the value of cane production and harvesting
  - 2.2 Increase the demand for approved seed
  - 2.3 Distribute new varieties
  - 2.4 Promote practices which enhance the long-term capacity of land and water resources to sustain viable sugar production, while minimising off-site impacts.
- 3. Managing human resources**
  - 3.1 Ensure that the human resources match current and foreseeable objectives
  - 3.2 Improve safety and productivity within work environment
- 4. Strengthen collaboration with research, development and extension providers working within the industry**
- 5. Ensure compliance with all legislation impacting on the Board's operations**
- 6. General**
  - 6.1 Maintain support of industry stakeholders
  - 6.2 Enhance performance in communicating with industry stakeholders through provision of effective, timely and efficient exchange.

## Chairman's Report

It is that time again, another year has passed. Not the greatest of seasons with the long dry spell we saw some farmer's lose plant cane and ratoons struggle to come up. On the other hand those that were using water saw their cost sky rocket due to electricity and water cost. Let's hope for a better season this year. This may take a few years for some to recover.

We at MAPS have had some changes and there may be more to come. We have seen some good experience staff leave due to retirement and personnel commitments and existing people step up as well as new staff.

I would like to personally thank John Agnew for his work as CEO, especially with a new Chair and wish him the best in this new part of his life. He gave many years to this Industry and region and we are better for having him here. All the best John.

We also saw the retirement of Allan Royal another long serving industry stalwart. Allan saw many years at maps and was known throughout the industry. Good luck Al and hope the fish are biting.

As you are aware with John leaving we needed to find a new CEO. In the end we chose Anthony Schembri, who many of you know was one of our long serving Productivity Officer from the North Coast. He is well known through this region as he grew up on a cane farm and to this day still helps out where he can. This gives him a good feel with some of the issues we face as growers today. Anthony has settled in very well and is up and running.

Congratulations also to Andrew Dougan as he has clocked up 25 years with MAPS. Andrew is our Senior Productivity Officer and looks after the MAPS Clean Seed farm as well and has seen it gain BMP Accreditation. Well done Andrew.

Welcome to the fold Britney, Maryanne, Audra and Brendan. These are our new staff members and all have slotted right in.

To the remaining staff well done for the year I personally wish to thank you all for the effort and professionalism you have shown throughout the year.

Once again our staff are involved in major projects, such as

- Smartcane BMP (Audra has covered a lot of ground here)
- Sandy Creek & Brightly Sub-Catchment Water Quality Project
- EEF 60 (Enhanced Efficiency Fertilizer)
- RP 161 Nutrient Project
- Reef Trust
- Maps/SRA Variety Project
- Agtrix Farm – New Data recording Program
- Solider fly Project with SRA

This has been done as well as the core job of pest and diseases. Staff are out there now checking plants and doing surveys to keep ahead of the game and catch an issue before it gets going.

Before I sign off I am excited by what the possible Joint Venture with Nordzucker and Mackay Sugar has to offer. As an entity we should not be closed to having another similar

industry have a look at what we do, any ideas that can help us to improve our performance is worth looking at. We need to keep a positive mind set and outlook.

Once again thank you to John Agnew and also Anthony for their help in allowing for an easy change over.

Hope you all have a good season and the price moves in the right direction

Regards



Frank Perna



# Chief Executive Officer's (CEO) Report

## WORKPLACE HEALTH AND SAFETY (WH&S)

MAPS proactively maintains a strong WH&S environment. Some of the important measures taken include:

- Safety issues is the first agenda item at staff monthly meetings.
- The fire extinguishers, all electrical equipment and slings/chains were tested and tagged.
- Prior to hot water treating, the chains on one of the crates were identified as being unsafe and were replaced. Several slings were also deemed to be unsafe for use and were substituted with new ones.
- All staff attended the annual First Aid course.
- Before the start of planting the MAPS farm and plots, all field staff participated in a job start safety meeting to identify risks and their mitigation.
- Snake awareness and hygiene for the handling of rat-damaged cane were discussed with staff.
- Staff first aid kit supplies are regularly updated before expiry dates.
- The CEO attended SRA's Fire and Emergency Management training.
- Washouts at MAPS' Victoria Plains farm were repaired by an earthmoving contractor
- Mitsubishi Motors were contacted to check that the airbags in MAPS' Triton utilities were NOT listed as faulty and received confirmation that vehicles and airbags were safe.

Monthly WH&S reports over the year shows that a safe work ethic is foremost in the minds of MAPS' staff. Reportable incidents were mostly restricted to minor cuts, stings and bruises received while executing normal field duties. Near misses were dominated by encounters with snakes. Staff are equipped with appropriate knowledge, safety equipment (including snake-bite kits) and communication devices.

An annual MAPS' farm safety audit was conducted on the 24<sup>th</sup> September 2018. No serious issues were detected but some suggestions were investigated and necessary changes were implemented to improve safety.

## SEASON

The 2018 crushing season started on the 30<sup>th</sup> May and finished on the 10<sup>th</sup> November with results being very disappointing, given that Mackay Sugar region had the potential for a much larger crop. The extended dry conditions from April to November had a major impact, reducing the tonnage of the crop considerably.

The crop produced 4.67 million tonnes of cane with an average PRS of 14.32. Lack of rainfall provided ideal conditions for harvesting, however the prolonged dry had a negative effect

on plant cane establishment and ratoons. Good rainfall in December and January made up for some of the lost yield potential. The 2019 crop estimate is estimated to be slightly over 5 million tonnes of cane.

## GROWERS SERVICES

MAPS Productivity Officers perform a vital role in assisting growers to improve crop health, productivity and profitability as well as meeting record keeping and industry BMP requirements. Table 1 (below) shows a breakdown of the number of farmer enquiries, blocks of cane inspected as potential plant sources and planting details collected annually.

**Table 1- Field Staff Farm Enquiry Record (April 17-March 18)**

Farmer Enquiry	Number
Varieties	3965
Disease	423
Pest	568
Nutrition	578
Chemical	693
Plant Inspections (blocks)	3,835
Planting details	1,246

A list of Productivity Officer's major functions is as follows:

- One-on-one advice and extension with their growers.
- Propagation of approved SRA cane varieties.
- Plant source inspections (intensive RSD testing).
- Observation plot establishment/monitoring (advanced clones).
- On farm variety recommendation, selection and management.
- Calibration of fertiliser and chemical applicators.
- Soil test interpretation and nutrient recommendations.
- Chemical advice and recommendations.
- Machinery inspection (biosecurity).
- Surveys (pest, disease, farming practice).
- Data collection/entry for AgDat record keeping.
- Assisting growers with self-assessment for Smartcane BMP & supporting practice change.
- Organising and running of farm walks, shed meetings and field days.

Apart from these general duties, each Productivity Officer has a particular project to manage. A list of field staff, their geographic area and their special projects are as follows:

- **Andrew Dougan**, Senior Productivity Officer (110 Racecourse farms) & MAPS Farm Manager.
- **Ian Marais**, Productivity Officer (200 Upper Valley farms) & Soldier Fly Project.

- **Shane Hare**, Productivity Officer (180 Marian farms) & Feral Pig Project & Information Technology.
- **Steve Garrad**, Productivity Officer (190 mainly Southern Farleigh farms) & Jane Creek Water Quality Project.
- **Britney Gibbs**, Productivity Officer (201 mainly Racecourse farms) & Feral Pig Project.
- **Maryanne Volker**, Productivity Officer (205 mainly Pleystowe farms) & Sandy Creek Project.
- **Brendan Rae**, Productivity Officer (215 North Coast farms).
- **Allan Royal**, Senior Extension Agronomist (175 southern Farleigh farms) & EEF (Enhanced Efficiency Fertiliser) project extension. Resigned September 2018.
- **Audra Allen**, Smartcane BMP Facilitator.
- **Dave McCallum**, Senior Extension Agronomist, worked on a range of activities including: general extension, advisory work, projects/trials, industry liaison, trouble shooting and core MAPS business. Apart from the Racecourse growers whom Dave services, he has specialist areas of responsibility including Harvesting and Irrigation. Details of the work carried out by Dave McCallum are discussed later in this report.
- Both **Andy Humphreys and Robyn Bell** serve as Reef Program Precision Planning Consultants (PPC), and actively encouraged growers to engage in the program. The PPCs assess project submissions by growers for grant eligibility. After signing up they assist with nutrient and chemical management plans. The focus has been on nutrient and pesticide management with the offer of considerable extension assistance. Andy Humphreys has the added responsibility of MAPS Company Secretary.
- **Vicki Royal** works part-time as MAPS Corporate Services Officer. Vicki is the main point of contact for the company and ensures all the daily requests are sorted out effectively.

## GROUP EXTENSION ACTIVITIES

MAPS prides itself on being able to offer all Mackay farmers the only one-on-one service, however we also run a number of other larger group extension activities including:

- **MAPS/SRA Field Day** - held on 10<sup>th</sup> May 2018. Approximately 170 growers attended to view displays and demonstrations including:
  - SRA varieties for release.
  - Vertical Tiller demonstration.
  - Stoolzipa/Central Coast Spreading.
  - Dual Herbicide sprayer.
  - Southern Cross Trapping.
  - EHS Manufacturing innovations and SRA Harvester Loss.
  - Soil pit – RP 161 Nutrient Management.
- **Shed Meetings** – small groups of growers from the same locality discuss topical items leading up to the planting season and harvest. Twenty one shed meetings were held during March, which were well attended.
- The **Trial Information Presentation Day** was conducted in February 2019. The aim is for local advisors and extension providers to get exposure to relevant trial results, both

locally and industry wide. Presentations were made by MAPS, SRA, Farmacist, QDAF (Qld Department of Agriculture and Fisheries) and Incitec Pivot. Topics included:

- SRA 2019 Trial Activities
  - YCS Update.
  - SRA Entomology Update.
  - Staggered N Rate Trial.
  - Enhanced Efficiency Fertiliser (EEF60) Project Update.
  - Holistic Nitrogen Management.
  - Imidacloprid losses in runoff in ratoons.
  - NUE and Intercropping Trials.
  - Myrtle Creek Project Update.
- **MAPS Newsletter** - This topical/awareness style document is posted or emailed to all growers with three editions circulated each year (July, December & March).
  - **CANEGROWERS Mackay Newsletter (*The Billet*)** - MAPS supplies district relevant content to at least every second edition of this publication.
  - **Media** engagement occurs regularly and mostly it is used for awareness of important issues for the local industry. Newsletters, newspapers and ABC radio are most useful.
  - **MAPS website** - although not the favoured medium for most growers, is still an important tool for awareness and provision of more detailed information.
  - MAPS contributes to and attends a range of **industry information meetings** and **field days** conducted over the year.

## SPECIFIC PROJECTS

### Government Reef Program

Reef Trust 3 finishes in June 2019. It has the same basic objectives as its predecessor programs but has an increased focus on extension and improved practice adoption and less funding available for grower projects. The criteria for project support has also been tightened, with assistance dependent on achieving positive behavioural change. The MAPS Extension Officers have a project target of engagement with 100 Mackay growers and they are on track to meet this milestone. Reef Trust 4 will continue from July 2019.

### Farm Recording/Reporting

Better recording means better reporting and more informed decision making.

Growers need a better system to comply with Reef Regulations, provide evidence for Smartcane BMP accreditation and Bonsucro compliance, to participate in the Reef Trust

program and to help better manage their affairs. MAPS staff need a better recording program that meets all requirements for a productivity service. The program needs to be practical and have the ability to generate reports, which can be used as an extension tool for staff in the paddock.

MAPS investment in the new recording/reporting program being developed by AGTRIX (AGTRIX FARM) will ultimately encourage more growers to record operations and produce reports to help make better business decisions and meet compliance needs. AGTRIX FARM is designed to be more user friendly for growers and staff.

### **Smartcane BMP**

Audra Allan commenced as the new **Smartcane BMP Facilitator** in May 2018, as Steve Garrad returned to his Productivity Officer position in Farleigh following the one year's redeployment. CANEGROWERS negotiated a contract extension with DEHP (Department of Environment and Heritage Protection) to provide funding for the project until June 2021.

The level of participation of growers with BMP has increased considerably due to the excellent work of Audra as the BMP facilitator. Growers have appreciated Audra's professionalism and enthusiasm in the role and it has resulted with a large grower uptake in the program.

A snapshot of grower engagement in Smartcane BMP is shown below (Table 2).

**Table 2 - The key Smartcane BMP Mackay numbers (April 2018 to March 2019)**

<b>Growers Status (3 core modules)</b>	<b>Number</b>
Benchmarked	16
Pre-Audits	57
Accredited	21
Interested in Accreditation	67
Started Accreditation	21

### **Variety Observation Plots**

MAPS works closely with SRA Plant Breeding to gain information on promising advanced clones and varieties earmarked for release. These canes are planted in observation plots on 6 farms spread throughout the Mackay Sugar area (North Eton, Septimus, Farleigh, Mt Pelion, Sandy Creek and Victoria Plains). MAPS staff and growers get the chance to view and assess the advanced clones against current commercial canes on a range of soils and under different weather conditions. Valuable new information will be gained on disease susceptibility, lodging and ratooning. With the co-operation of growers, MAPS is now in a position to collect commercial data of varieties within a year of their release. This data will allow growers to make better informed decisions of the variety management on farm.

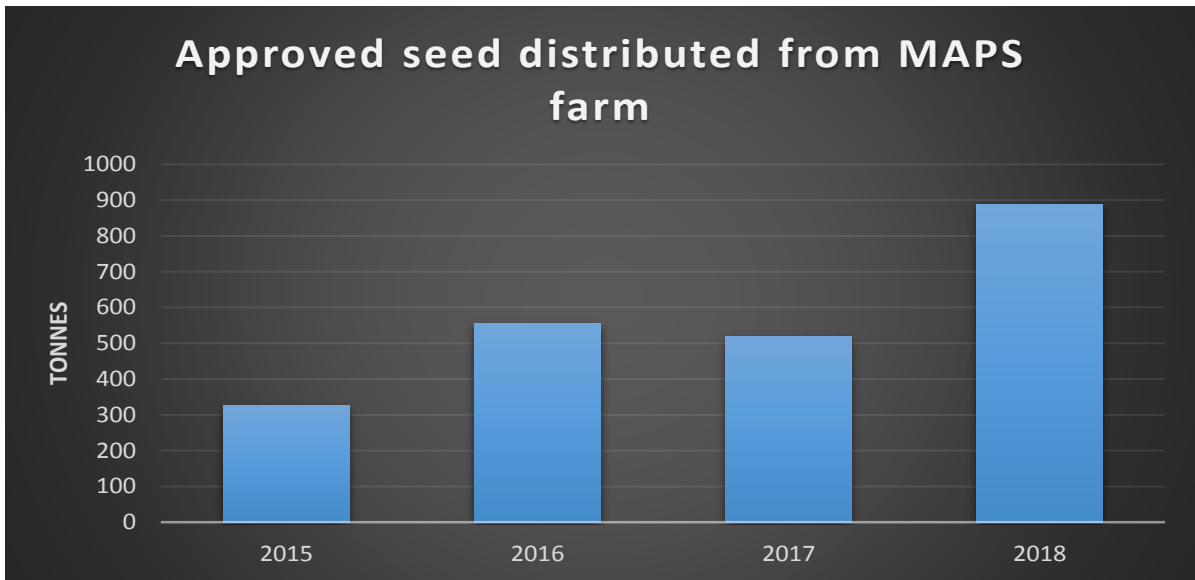
## Seed Plots

Approved seed cane of all major varieties was available from the plots at Victoria Plains, Finch Hatton and Calen. A total of 946 assignments collected their quotas in 2018. To facilitate greater use of approved seed, MAPS continues to fill grower orders using a blower and plant-cutter to supply whole stalks on planter trailers ready to hand load. This only applies to selected varieties. Between cane cut onto trailers and growers cutting their own cane, a total of 492 tonnes were collected. In an effort to get more uptake of clean seed, MAPS have the option of buying billets from the plot. This option proved to be very popular with a total of 396 tonne of billets purchased. A total of 888 tonnes of clean seed was collected from the MAPS plot, which is a significant increase from previous years as seen in figure 2.

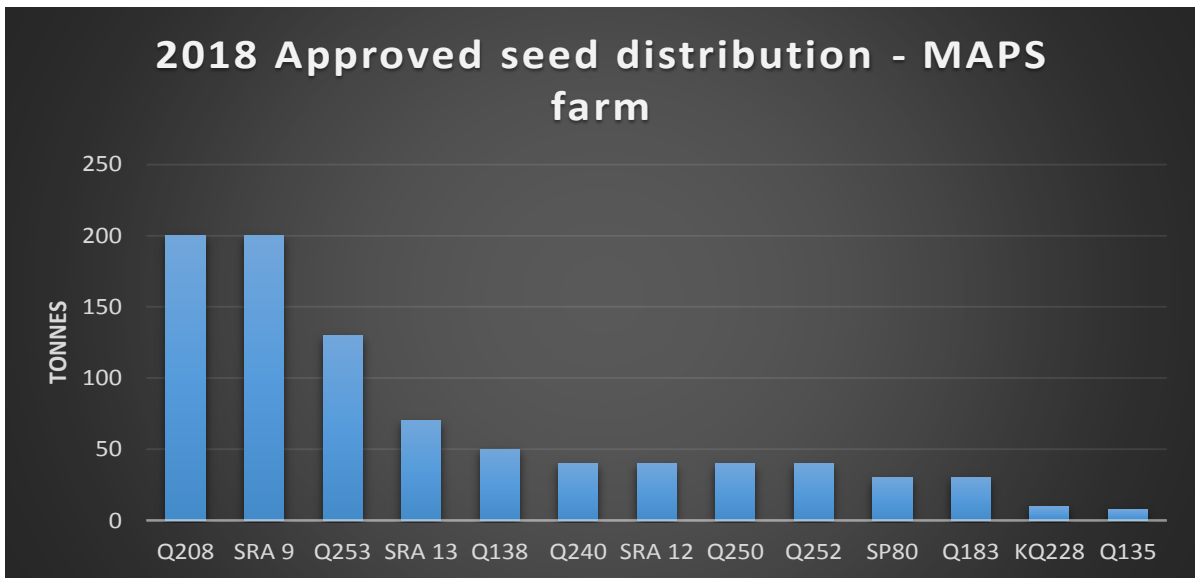
The hot water treatment tank was operational during the month of August, with cane treated for Plane Creek Productivity Services, SRA and the MAPS plot. A total of thirty (30) tonnes was treated.



**Figure 1: Calen Clean Seed Plot.**



**Figure 2: MAPS farm approved seed distribution.**



**Figure 3: Variety breakdown of approved seed.**

### Rural Water Use Efficiency

The Rural Water Use Efficiency Program is funded by DNRM (Department of Natural Resources and Mines), is administered through CANEGROWERS Queensland and is delivered by agencies such as MAPS. This project aims to provide relevant irrigation information to sugarcane producers to enable them to make better irrigation decisions and improve their practices. Through this program, MAPS were able to fund three new weather stations located throughout the Mackay Sugar region. The three locations are Pindi Pindi, Balberra and Victoria Plains. Data recorded includes wind speed, wind direction and rainfall. The Victoria Plains station also measures relative humidity and barometric pressure. Data from the three sites can be accessed on the MAPS website.

## Harvester Sugar Loss Testing

The MAPS test rig has been used in Mackay Sugar as part of the state-wide SRA Harvest Loss Project and also accessing harvesters involved in the Jane Creek Project.

## EEF60 (Enhanced Efficiency Fertiliser) Project

MAPS is a collaborator in the new EEF60 project administered by CANEGROWERS and run by SRA. MAPS (through Dave McCallum) is responsible for managing extension of the project (seven Mackay co-operators) and its findings in the Central district. The project is one year into a three year project, therefore it is too early to draw any conclusions.

## Sandy Creek – water quality improvement

12 growers spread throughout the Sandy Creek catchment, from Mirani to Chelona, took multiple water samples during the first 3 run-off events of the 15/16, 16/17 & 17/18 wet seasons. The sampling confirmed that there are issues with the concentration of certain pesticides in Sandy Creek.

MAPS and Farmacist worked directly with the co-operating growers, the latter conducting several block-scale trials evaluating the impact of specific practices on run-off water quality. MAPS Productivity Officers visited all growers whose farms drain into Sandy Creek each season, showing the results of the water tests and specifically targeting Diuron and Imidacloprid. They had a general discussion with each about their pesticide, herbicide and nutrient practices, viewed their records, looked at application equipment and offered to help calibrate and scrutinise during application. They conducted an initial survey of grower practices in 16/17 and a follow-ups in 17/18 and 18/19

Grower awareness of the issues, willingness to co-operate and make positive practice change has been occurring. However, we have a real problem because concentrations of Diuron and Imidacloprid usually exceed environmental thresholds and this has not improved over the life of the project. Some of the more important points to note from the grower surveys includes:

- Incomplete record keeping is of major concern
- The action of just one grower can cause a pesticide exceedance in a local waterway. This effect can be seen all the way down the creek.

Diuron:

- Fewer growers are using Diuron - 30% of farms not using in 16/17 versus 35% farms in 18/19
- Spraying during the *closed window* was still an issue but had dropped from 6% to 5% of farms
- Problems with technical issues (eg. calibration) reduced from 12% to 3% of farms

Imidacloprid:

- 26% of farms did NOT use Imidacloprid
- Soil cover/placement issues reduced from 38% to 5% of farms
- Treating the whole farm was not always justified

Nitrogen:

- 90% of the area used Six Easy Steps N (nitrogen) rate in ratoons
- 24% of the area exceeded Six Easy Steps N rate in fallow plant cane - the median excess was 20 kg/ha

Other positive messages:

- Many of the herbicides/pesticides detected were at concentrations below environmental threshold levels
- Sandy Creek is not carrying big loads of pesticides, the issue is more about high concentrations of particular pesticides over several rain events.
- Data from a farm sediment trap showed it can help reduce loss of certain pesticides (Imidiclopid, Atrazine) and Nitrogen into the drain/creek

### **RP161 Nutrient Management Project**

This is a new joint project between MAPS and Farmacist building on their success in the Burdekin. The aim is to work with growers to assess their nutrient management practices and assist where possible to bring them in line with best practices. The starting point is the production of a nutrient management plan. Planning discussions were held in early 2018.

### **Jane Creek Water Quality**

This joint project between Reef Catchments and MAPS will work with producers in the Jane Creek catchment on monitoring and improving water quality. MAPS will collaborate by working with up to 10 cane farmers and 4 harvesting contractors in the catchment. Steve Garrad is the main contributor to this project.

### **Munbura Feral Pig Project**

MAPS through funding from QDAF assist a grower group with developing a collaborative feral pig management program. Shane Hare and Britney Gibbs are the main contributors of this project working with 20 Munbura growers.

## **SENIOR EXTENSION AGRONOMIST ACTIVITIES**

**Dave McCallum** engaged in a wide range of work during 18/19. A summary of some of the more significant activities is as follows:

- 1. Service 60 Racecourse farms as their Productivity Officer**
  - Grower Services including: plant inspections, pachymetra sampling, refractometer testing, calibrations, biosecurity checks on equipment, legume advice, farming systems, Soldier Fly and grub issues, rat damage assessment and advice, assess armyworm infestation, plant germination checks, fire claims, harvesting timing,

irrigation queries, variety identification, Yellow Canopy Syndrome and BMP self-assessment.

- Helped plant, monitor and distribute seed cane from MAPS Approved Seed farm
- Helped plant some variety observation plots.
- Organised and attended 3 grower shed meetings.
- Assisted Canegrowers Mackay with fire assessment reports of growers farms affected by the 2018 November fires.

## **2. Harvesting**

- Meeting with SRA personnel (Nick Hill) regarding planning and harvesting EEF trials.
- Conducted four harvesting sugar loss tests as part of the Janes Creek Project.
- Attended two contractor/grower meetings to discuss SRA Harvesting trial results.
- Attend SRA Harvesting Forum in Mackay.

## **3. Irrigation**

- Installed 10 GDots and repaired multiple GDots and probe transmitters.
- Installed 2 EnviroProbes.
- Measured cane growth weekly and recorded on EnviroProbe website.
- Patriciate in four grower irrigation pump assessments.
- Installed three weather stations with Agritech Solutions technicians.
- Attend the Irrigation Advisors Focus Group meeting regarding the SRA Irrigation project.

## **4. Sandy Creek Water Quality Project**

- Attended project team meeting 2018.
- Attended water quality results 18/19 meeting.
- Attended pre-season grower co-operator meeting.

## **5. RP161 Nutrient Management Project**

- Attended meetings with Farmacist to discuss MAPS' role in this new nutrient management project.
- Engage 17 growers to patriciate in the RP161 project.

## **IMPORTANT BENCHMARKS**

The benefits of having a spatial record keeping system means we can produce information which can be used to evaluate our various activities and report on a collective basis to industry and government. The following information was extracted from AgDat.

### Fallow break crops

420 ha of fallow legumes (92% soybean) were planted in 2017/18. This represents only 6% of the fallow (Figure 4). This is less than half the area planted in the previous year. This reduction is not because of lack of desire but rather due to circumstances out of growers' control. With the dry conditions at the end of the harvest, the opportunity to plant legume crops was reduced. Once it rained, growers concentrated on completing their fertilising and spraying programs. Growing fallow legumes is a recommended management practice, if growers want to address our poor soil health issues.

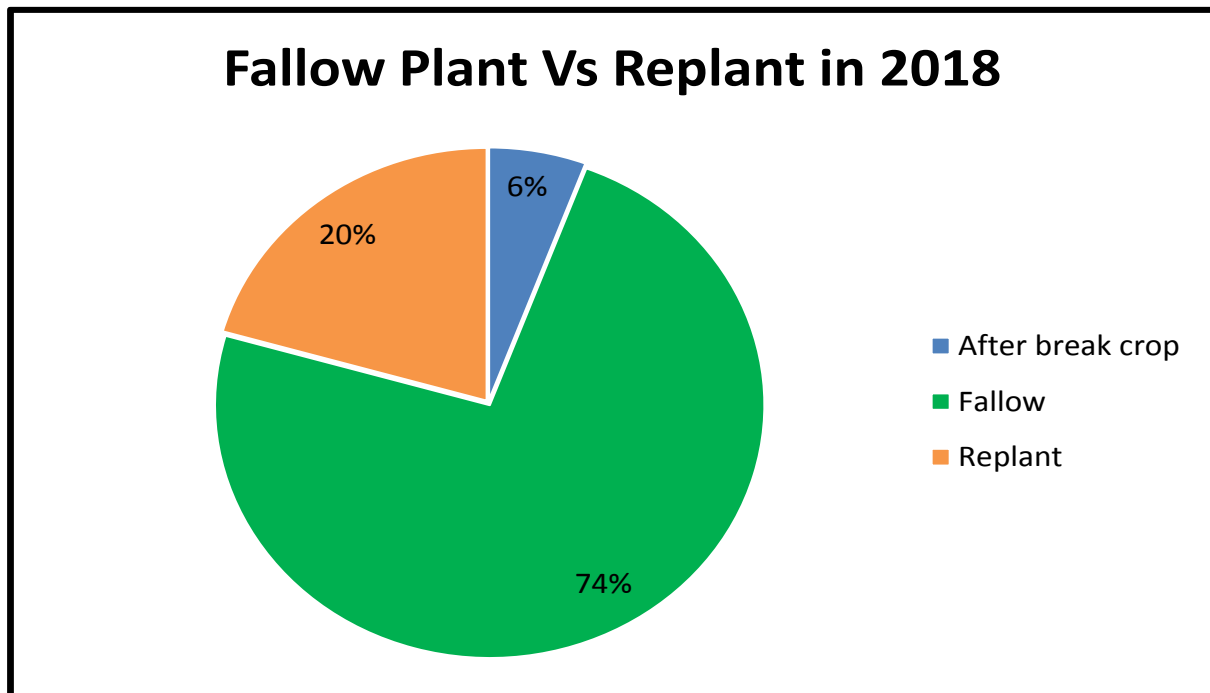


Figure 4: Fallow plant Vs Replant.

### Row spacing

Compaction of the stool by heavy harvesting equipment will continue unless row spacing is changed to match machinery track widths. It is encouraging to see that "conventional" row widths around 1.5m mark only accounted for 5% of all cane planted in 2018. Approximately 25% of all plantings were at acceptable row widths, being 1.8 m or greater (Figure 5). The true crop health benefits of wider row spacing are difficult to achieve because haulouts still wander and it is not yet economic to fit them with GPS.

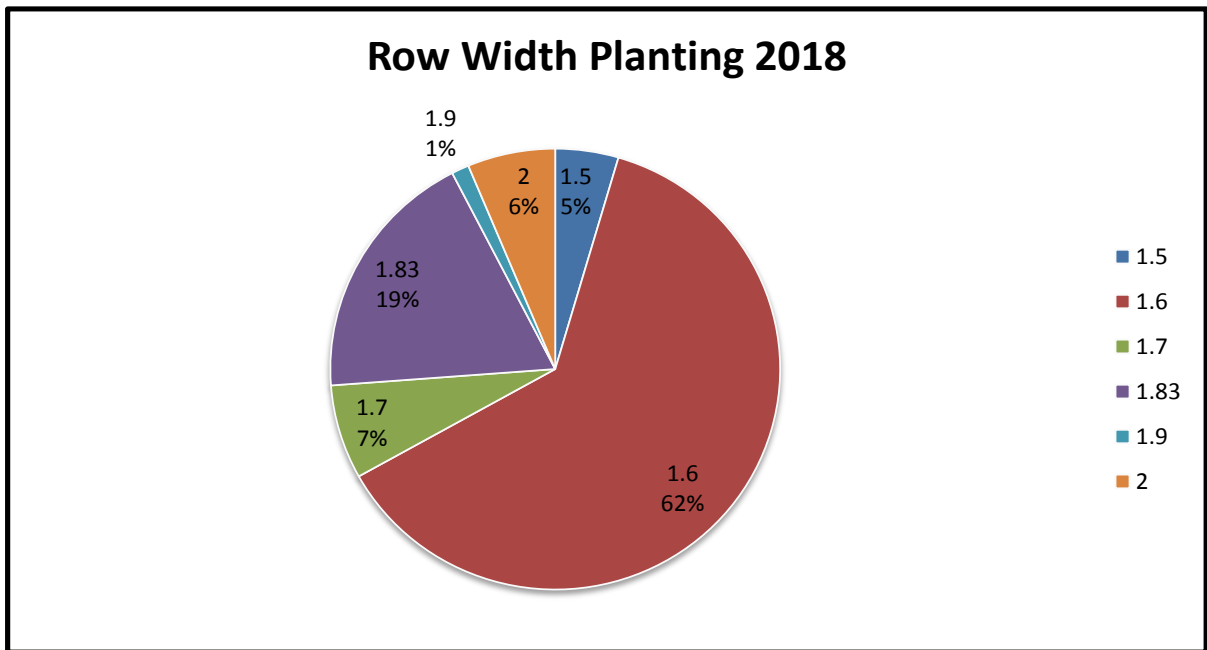


Figure 5: Row spacing (m) in 2018 plantings.

### Variety profile

Q240 was again the major variety planted with almost 30% of all plantings (Figure 6). Q208 planting surged relative to last season because, although it is intermediate for Pachymetra, it is still the most versatile and productive cane. The area planted to Q183 has increased substantially relative to last season due to its Pachymetra resistance and proven performance when matched to the right conditions. SP80 plantings are on par with 2017 rather than increasing due to traits such as snapping in wind during storm events or cyclones.

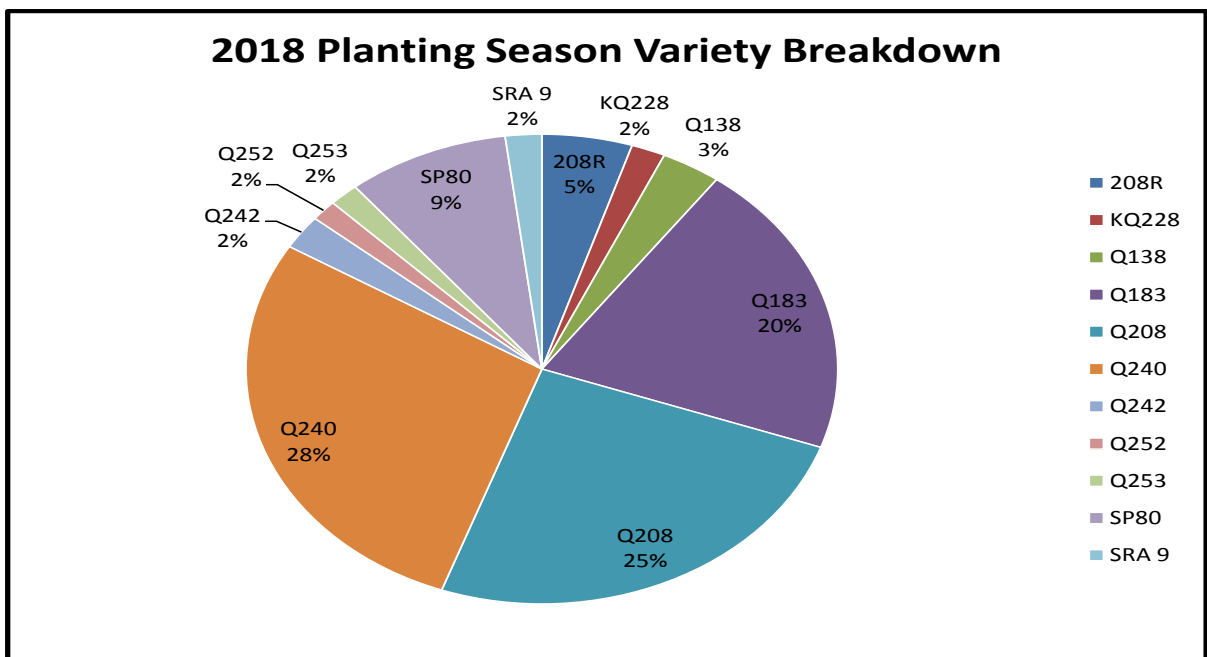


Figure 6: Variety breakdown in 2018 plantings.

## Pachymetra Root Rot

Pachymetra is still our most serious disease issue. The percentage of area planted to resistant varieties is about 40 % with intermediates at 60%. Resistant plantings are shown in Figure 7. With more resistant varieties being released such as SRA9, SRA12 and SRA13, the reliance on intermediate varieties should decrease.

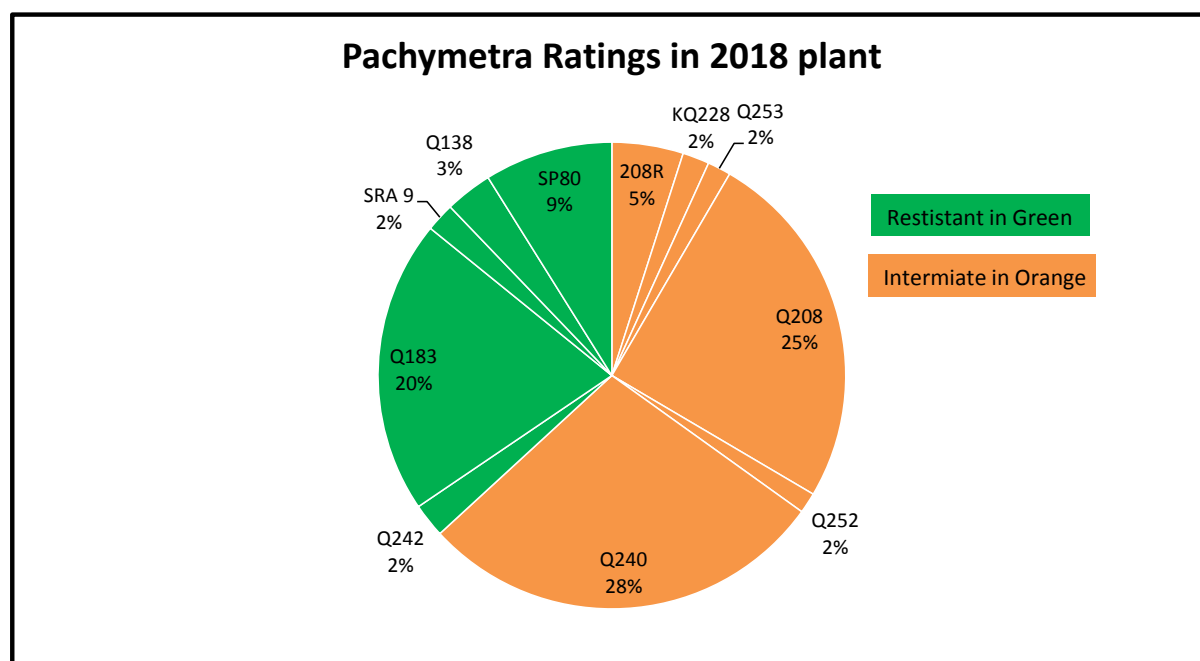


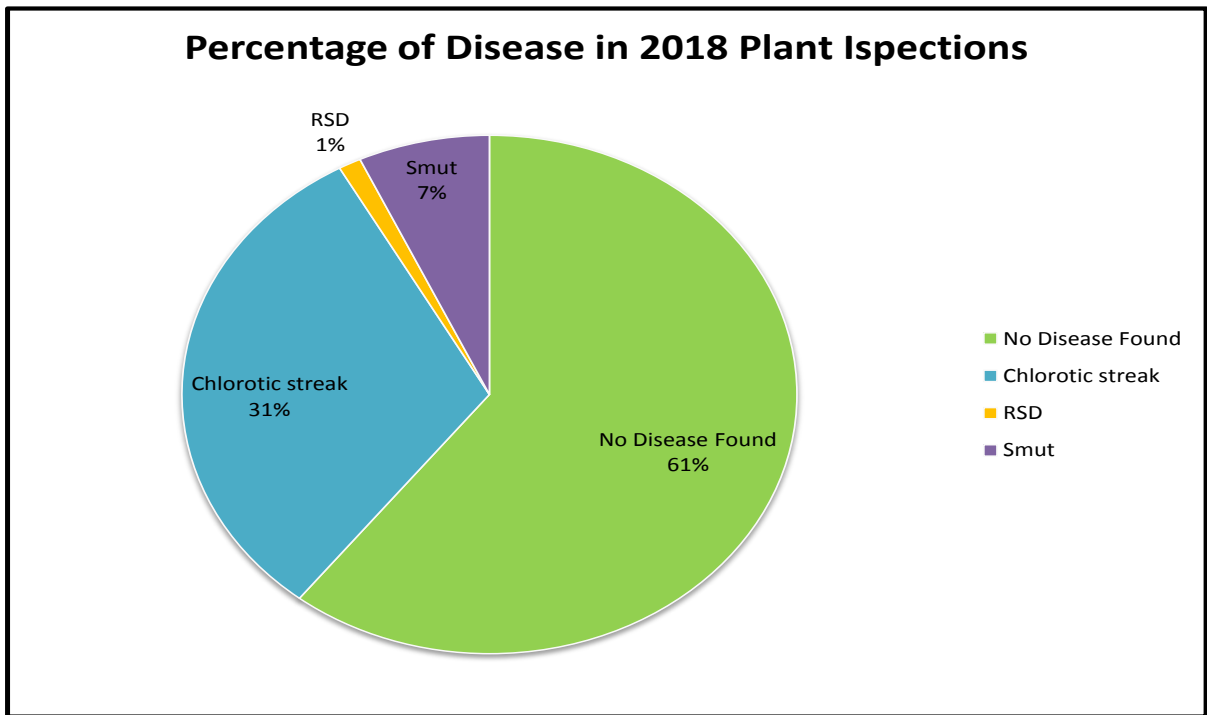
Figure 7: Pachymetra ratings in 2018 plantings.

## Chlorotic Streak

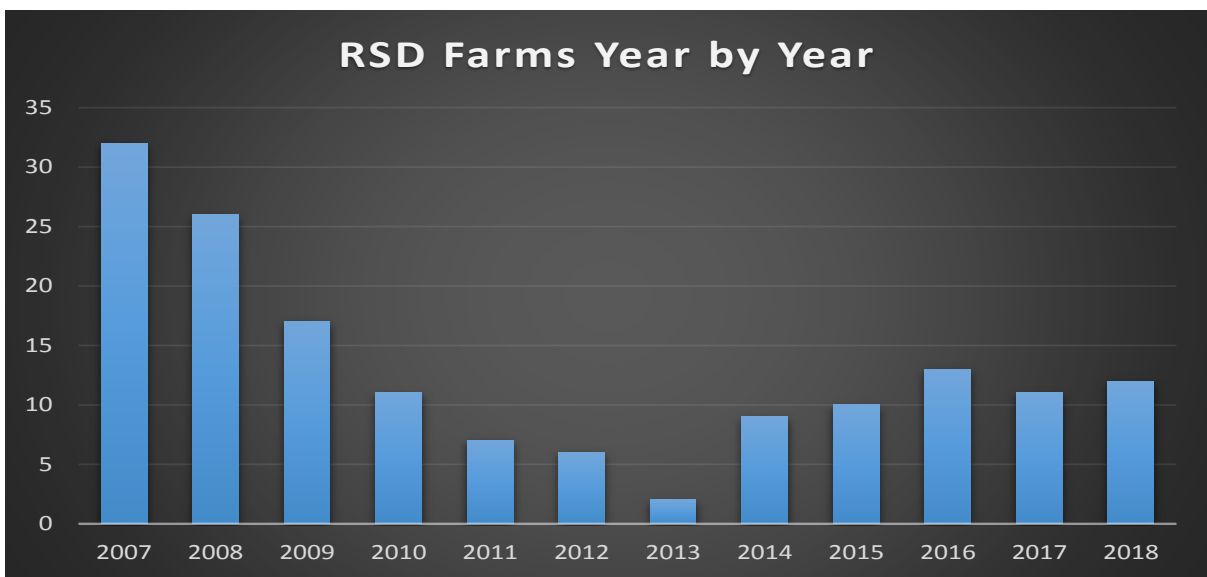
Approximately 56% of the area planted in 2018 was with resistant and intermediate-resistant varieties. The area planted with intermediate-susceptible canes was 37%. Yield loss from this prevalent disease would be much greater if not for the efforts put in by MAPS staff giving advice during plant inspections.

## Ratoon Stunting Disease (RSD)

This disease is managed closely by the Productivity Officers who check the majority of plant sources. Incidences are very low in absolute terms and relative to other cane growing districts. Regardless of the effort put in by MAPS, some growers still give little notice of planting intentions or use poor hygiene. Some harvesting contractors could also do with more care and attention to clean down and sterilise machinery between farms. Twelve farms have been recorded as having RSD infection in at least one block. Figure 8 shows in 61% of plant inspections performed, no major diseases are recorded. Where diseases are found, an alternative plant source is found, to ensure the best possible crop is achieved.



**Figure 8: Diseases in 2018 plant inspections.**



**Figure 9: RSD farms 2007-2018.**

### Approved Seed Use

One of MAPS’ most important, yet time consuming and expensive activities is the provision of Approved Seed sources. MAPS maintains its Victoria Plains farm plus Finch Hatton and Calen lease plots for this sole purpose. Once a seed source gets GREATER than 4 years away from hot water treatment (HWT) it is deemed to be high risk in terms of potential disease infection. About 60% of cane planted in 2018 came from a seed source LESS than 4 years away from HWT. In an effort to supply more clean seed to growers, MAPS has established another two mother clean seed plots in Calen and Gargett. These mother plots will provide the clean plant material for the two bulk clean seed plots to be open for plant distribution in 2020.

## Sugarcane Smut

This disease is largely under control because most of our recommended varieties are smut resistant. There are still some susceptible canes being planted on permit. Resistant and intermediate varieties will show the occasional whip. The dry conditions experienced throughout the 2018 season provided ideal conditions for smut to flourish. Although medium levels of smut were recorded in blocks of intermediate and susceptible varieties, such as Q138, Q242, Q252, Q208 and SRA 13, no major yield losses were recorded.

## Yellow Canopy Syndrome (YCS)

While SRA understands much more about the effects of YCS on cane plant physiology and bio-chemistry, the causes of this syndrome remain largely unknown. The levels of YCS were slightly higher overall in the 2018 crop, compared to last year. While there are still blocks suffering significant yield loss due to YCS, the spread and severity of this infliction across the district was not as severe.

## PESTS

MAPS data suggests that over 24,000 tonnes of cane was lost due to pest activity in 2018. Rats caused the most damage, followed by pigs and armyworms (Figure 10).

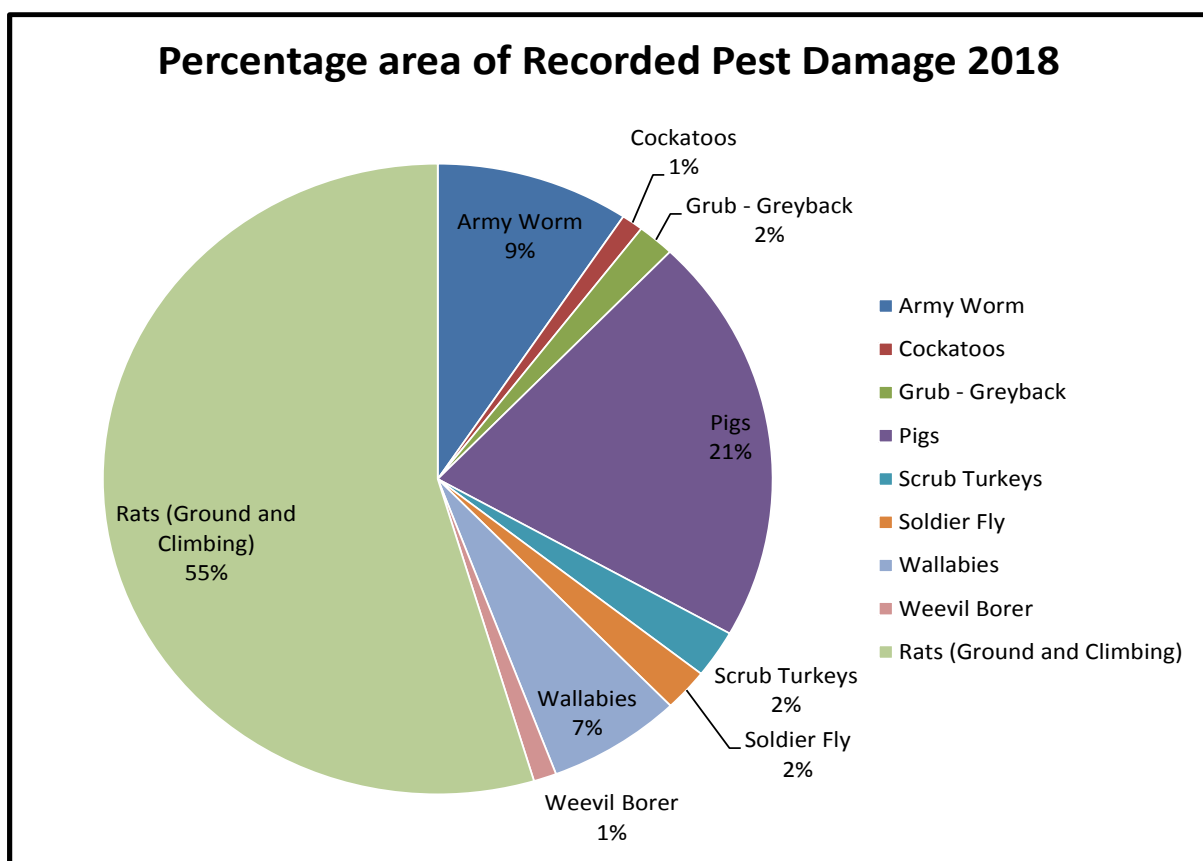


Figure 10: 2018 Recorded Pest Damage.

## Rats

Approximately 12,000 tonnes of cane are estimated to have been eaten and destroyed by the combination of climbing and ground rats in 2018. The rat damage has almost doubled from the previous year. With the dry conditions experienced during the harvest, the rats used the cane blocks as a harbourage and a food source, resulting in the considerable yield losses.

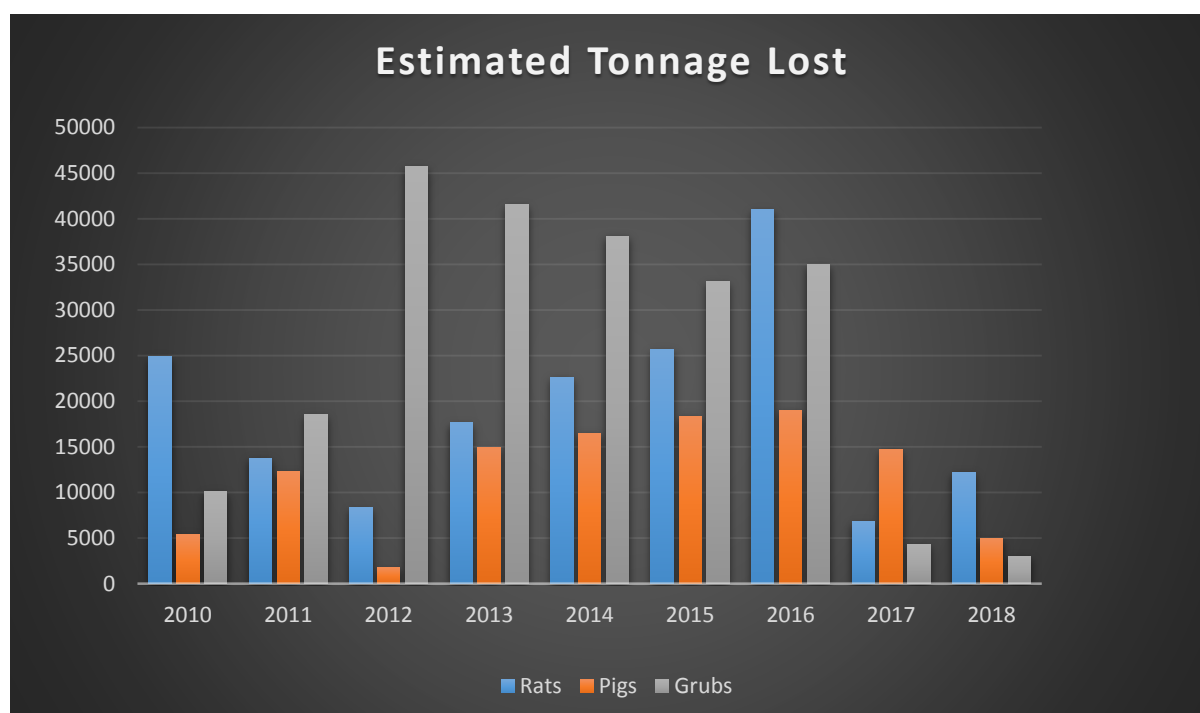
## Feral Pigs.

Approximately 5000 tonnes of cane are estimated to have been destroyed by feral pigs in 2018. Pig damage was significantly lower than the previous year.

**Other vertebrate pests** which pose problems each year but vary in severity and geographic spread and which require attention by MAPS staff include: swamp hens (coots), scrub turkeys and cockatoos. Both cockatoo and swamphen damage slightly increased from the previous year.

## Cane Grubs

Previously cane grubs have been our most damaging insect pest with over 4000 tonnes estimated to be lost in 2017. However the cane grub damage was light to moderate during the 2018 season. Growers have effectively used the grub control chemical (Imidacloprid) to reduce the risk of grub damage and therefore yield losses.



**Figure 11: Estimated pest damage 2010-2018.**

## Soldier Fly

Soldier fly infestations are on the increase, with some new outbreaks occurring in areas which have not been exposed in recent history. MAPS continues to work with soldierfly (SF) affected growers and SRA to ensure that current SF management techniques are extended and any new ideas evaluated.

Ian Marais, MAPS Productivity Officer, has spent a considerable amount of time reviewing literature and chasing up any information concerning potential control measures. He has also worked with affected growers doing various trials and observations including the following:

- Effect of different chemicals on soldier fly mortality (pot trial)
- Effect of soil additives on speed of ratooning in SF affected blocks (field strips observation)
- Monitoring different grower practices for effect on ratooning (i.e. bare fallow, soybean fallow, ploughed & bumpered, Ploughed immediately prior to fly emergence, insecticide (registered for use in sugarcane) sprayed on bare fallow as soon as fly emergence is noticed.)
- Monitoring of SF adult distribution (trapping) in an attempt to better understand emergence patterns
- SRA will commit more funds to the research and MAPS is working closely with SRA to move closer to sourcing a solution to the problem.



Figure 12: Soldier fly larvae

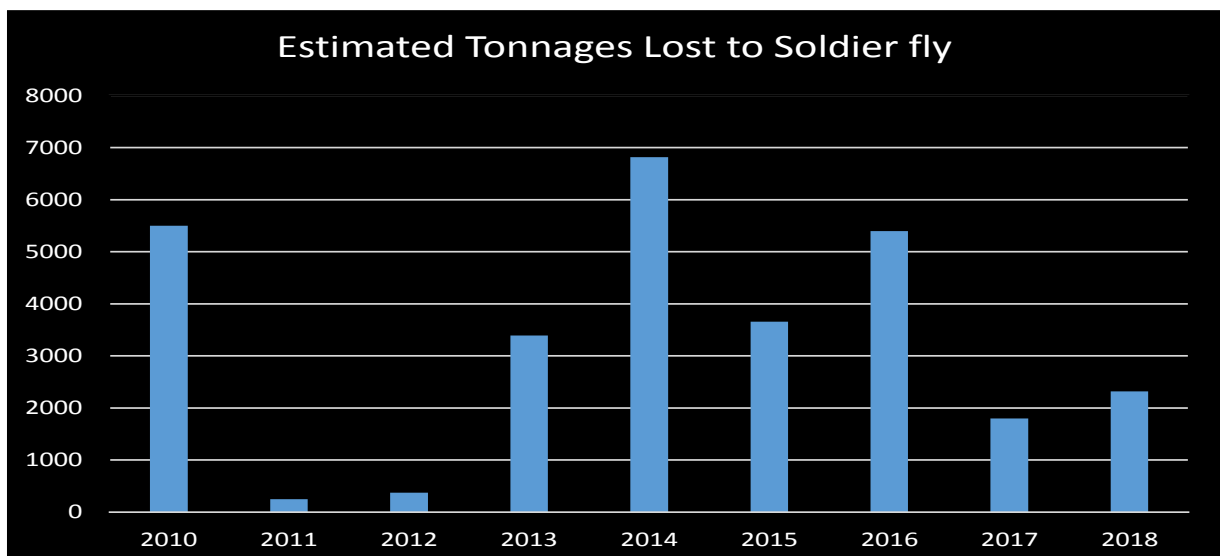


Figure 13: Soldier fly damage 2010-2018.

**Other insects** which pose problems each year but vary in severity and geographic spread and which require attention by MAPS staff include: Wireworms, Weevil Borer, Moth Borer, Bud Moth and Army worm. The combination of armyworms and dry weather experienced during the 2018 crushing caused a great deal of concern for growers.

## WEEDS

### Red Witchweed (RWW)

MAPS, through Steve Garrad, provides liaison between affected growers and Biosecurity Queensland (BQ). They continue working toward eradication using hygiene practices, false host fallow crops, ethylene injection and other means.

## ENVIRONMENTAL

### Frost

The Mackay Sugar region experienced three major frost events throughout the 2018 harvest. Standing blocks of cane in certain locations were severely frost damaged, which were harvested quickly to prevent a yield loss. However a reduction in the PRS (2-3 units) of the damaged blocks was recorded. Young ratoon blocks were also affected by the frost. Unfortunately the combination of the several frost events and dry conditions resulted in ratoon blocks not recovering and being ploughed out.



**Figure 14: Frost in standing cane.**



**Figure 15: Frosted young ratoons.**

## OTHER SIGNIFICANT ACTIVITIES/EVENTS

### **MAPS Budget**

MAPS made considerable cost savings in line with the difficult financial climate faced by the local industry. The 18/19 levy was unchanged relative to previous budgets, which was reduced by 29% in 15/16. MAPS expended some reserves to balance the budget. The draft 2019/20 budget again saw no change in the levy income. The CEO, MAPS Chairman and Vice Chairman presented the 2019/20 budget to shareholders and to Independent Bargaining Agents.

### **SRA Strategy for Industry Led Adoption**

A joint meeting of the three Central district Productivity Services boards to discuss the SRA Strategy for Industry Led Adoption was held on 5<sup>th</sup> June 2018. The basic structure of the Regional Adoption Advisory Committee (RAAC) was developed and met with SRA to address the issues. A meeting with Ian McBean (Executive Manager) occurred on 27<sup>th</sup> June 2018 and was relatively productive. The central district RAAC consist of the following voting members: two Mackay growers, one grower each from Plane Creek and Proserpine, plus two millers (one each from Mackay Sugar and Wilmar). The SRA Regional Coordinator (Phil Ross) held a meeting on the 7<sup>th</sup> February 2019 to discuss the local issues that can be targeted to improve productivity and profitability through improvrd extension and adoption within the central region. Variety management, nutrients/weed management and harvesting were the issues to be forward to the Industry Adoption Advisery Committee, which will determine which topics get selected. The Central Strategy is meant to help identify where current adoption/extension activities are focussed and where the gaps are. The Strategy should also assist in coordinating activities so that potential duplication is avoided and also in identifying opportunities for collaboration.

### **Improved use of Nitrogen fertiliser and imidacloprid**

MAPS co-operated with John Hughes (Queensland Department of Agriculture and Fisheries) regarding further developments in and promotion of the finger press-wheel (project - better closure of fertiliser/Imidacloprid slot). EHS Manufacturing completed the machine and called it the "Stoolzippa". The machine is available to all farmers via three pathways: downloadable design plans on EHS website, sale of components to allow buyer-assembly or sale of complete units. Bayer commissioned the manufacture of three units to be used for extension purposes in Central, Burdekin and Herbert districts. Rainfall simulation showed use of Stoolzippa gave an almost two-fold reduction in Imidacloprid concentration and dissolved inorganic nitrogen in runoff compared to conventional application. MAPS help promote the Stoolzippa at the MAPS Field day and through the MAPS Newsletter.

## **Cane Regional Working Group (CRWG) and Technical Working Group (TWG) meetings**

The CEO participated in both CRWG and TWG activities. Several issues and items were addressed:

- Reef Trust 3 NUE milestone reporting.
- Potential extension projects that could attract some of the QDAF water quality funding.
- Providing opinion on suitability of grower grant applications in Reef Trust 4.
- Providing advice and concerns with the Paddock To Reef Modelling structure.

## **Management of Fibre Quality Attributes in the SRA Variety Development Program**

A SRA workshop reviewed the emergence of several “soft canes” within the SRA plant breeding program that has caused some serious milling issues, which has meant that growers have forfeited the use of some new varieties. Because the fibre quality measurement is taken late in the breeding program, development expense has been wasted when a new variety is discarded pre-release.

Fibre quality measurements will now be taken earlier in the program, which will increase the number of clones tested from 36 to 150, extending the processing time from 2 weeks to 8 weeks. QC90-289 is a parent of many of the soft canes produced in the Central district. There are other parents which also convey the soft cane characteristics. SRA does not want to throw out these clones as a parent as it provides a source of diversity in the breeding program.

SRA are confident that using NIR will be a more effective method of detecting unfavourable fibre qualities early in the plant breeding program. More research is needed to properly calibrate for fibre measurement.

## **Project evaluating new technique for RSD diagnosis**

A meeting of collaborators (including MAPS CEO) involved in the project evaluating LSB-qPCR for RSD diagnosis was held to update trial progress at SRA Woodford and seek guidance regarding cane sampling strategy.

## **Community Involvement**

MAPS staff gave assistance and support to a number of community activities such as the Mackay Show, Pioneer Valley Show and Canegrowers Ag-Trade Expo.

## STAFF CHANGES

**Alan Royal tendered his resignation** and finished at MAPS on the 19<sup>th</sup> September 2018. Alan had worked for MAPS for 23 years and had fulfilled a range of duties including Productivity Officer, Technical Manager and Senior Extension Agronomist.

**John Agnew tendered his resignation** and finished at Maps on the 31<sup>st</sup> January 2019. John had worked for MAPS for ten years, six years as a Senior Extension Officer and four years as the CEO.

**Britney Gibbs** commenced at MAPS as a Productivity Officer on the 4<sup>th</sup> June 2018.

**Maryanne Volker** commenced at MAPS as a Productivity Officer on the 11<sup>th</sup> June 2018.

**Brendan Rae** commenced at MAPS as a Productivity Officer on the 11<sup>th</sup> February 2019.

**Audra Allan** commenced as a Smartcane BMP Facilitator on the 8<sup>th</sup> May 2018.

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## STAFF TRAINING

Dave McCallum, Maryanne Volker and Britnet Gibbs attended a Biosecurity QLD Certification Assurance Accreditation (CAA) **Authorised Inspection Person Training** Workshop at Brandon SRA.

Audra Allen, Maryanne Volker, Britney Gibbs and Brendan Rae attended a **Behavioural Skills Training** Workshop at Harrup Park.

Maryanne Volker and Britney Gibbs attended a **Chemical Accreditation Training** course at Mackay SRA.

Several staff attended the **Soils and Nutrition Training** Workshops (RP196 Farmacist) held at Calen and West League Club.

CEO attended annual **Fire and Emergency Training** at Mackay SRA.

Maryanne Volker, Britney Gibbs and Brendan Rae attended an **Identifying and Managing Sugarcane Disease** Workshop at the SRA Pathology Station at Woodford.

## ACKNOWLEDGEMENTS

MAPS is the main on-farm provider of quality advice and extension for all Mackay cane growers. By helping growers to be more productive and profitable we are also helping Mackay Sugar to crush more quality cane. We rely on good partnerships and relationships with individuals and several organisations including CANEGROWERS Mackay, Mackay Sugar Ltd, SRA, Reef Catchments, Farmacist, Queensland Department of Agriculture and Fisheries, Department of Science and the agribusiness companies.

Thanks to those farmers and harvesting crews who have co-operated with MAPS to organise and cut various trials.

No one should take for granted MAPS' hard-working, dedicated and loyal staff. The Board and I are lucky to have such a great bunch of people. Thanks to the MAPS Board for their support and for their efforts throughout the year.



**Anthony Schembri**





Notes