



CLEAN SEED - THE SMART CHOICE

There are many ways to address productivity, however the most cost effective and simplest way is the investment into clean seed. It's a message you have heard a thousand times before and yet the easiest solution to productivity improvements is often overlooked. Clean seed forms the foundation of your future crops, therefore it's vital you start with a healthy and vigorous plant source from a MAPS plot.

In an endeavour to support growers in the uptake of new varieties and clean seed, MAPS have a mixture of both whole stick and billet cane available throughout the Mackay Sugar district. The dates for billet cane will be communicated with growers through text messages and the cost will remain at \$66/tonne, with growers providing their own tipper bin transport. If you require more information on billets or whole stick collection, please call your Productivity Officer.

Planting remains the single most costly activity for growers, hence the importance of clean planting material. The use of Clean Seed Cane is vital for all varieties as it eliminates the risk of introducing diseases such as ratoon stunting disease, leaf scald and chlorotic streak. To ensure our MAPS clean seed plot we go through a rigorous and lengthy process every year to make sure that our plots are disease free.

- Stalks of selected varieties are cut and cold-soaked and then long hot-water treated (CS/LHWT) before being planted into mother plots.
- Plant material from the mother plots is CS/LHWT for two consecutive years then planted into approved seed plots.
- The plant material from the approved seed plots becomes the approved Clean Seed Cane supplied to cane growers.
- Every year plots are inspected for visual signs of pest, disease and weed infestations before the 'out of hand' stage by walking every row. Then once cane is mature enough, we then walk back through and cut a stick of cane every 20 metres for every row. It is then sliced up into billets so that we can take a juice sample from each stick of cane and send them away for RSD testing at the Sugar Research Australia labs using a method called qPCR which is a highly sensitive testing method.

MAPS is proud of the strict vigilance that goes into our triple check regime which gives up the best possible opportunity of detecting any diseases in the clean seed plots. The Mackay Sugar region has the lowest levels of RSD in the state with less than 1% RSD affected farms. Growers collecting cane from the MAPS plots plays an important role to maintaining our low RSD levels.

We not only test for RSD during plant inspections, but we look for signs of other diseases and issues like smut, chlorotic streak, pest damage and mixed varieties to insure the best quality plants are used to establish a productive crop.

Call your Productivity advisor for your upcoming plant inspections and plot opening dates.



New Staff Member

My name is Will Motti and I am the new Productivity Advisor for MAPS in the Racecourse area.

I grew up in Ingham on a family sugarcane farm which was my introduction into the sugar industry.

During high school I completed work experience with an agronomist which furthered my interest in the agriculture industry.

Once completing high school, I moved to Gatton to attend the University of Queensland where I studied Ag Science and Ag Business majoring in Agronomy.

During my free time away from work I enjoy the outdoors, especially going fishing and playing golf.

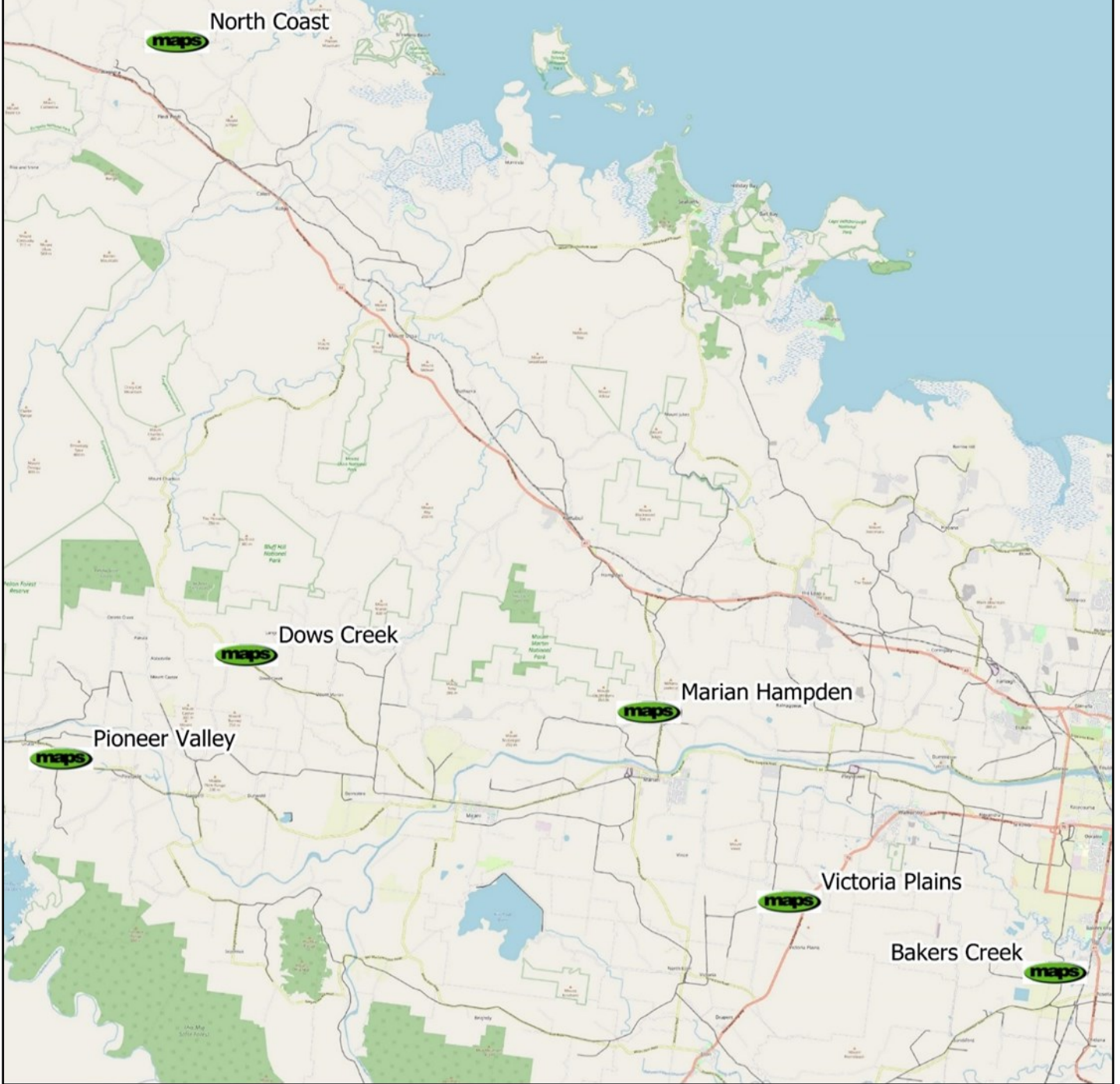
I am very interested in expanding my knowledge about the sugar industry especially on different practices that improve soil health to increase farm productivity.

Contact me by:

PH: 0417 326 672

Email: wmotti@maps.org.au

MACKAY AREA PRODUCTIVITY SERVICES
APPROVED CLEAN SEED PLOTS
2023



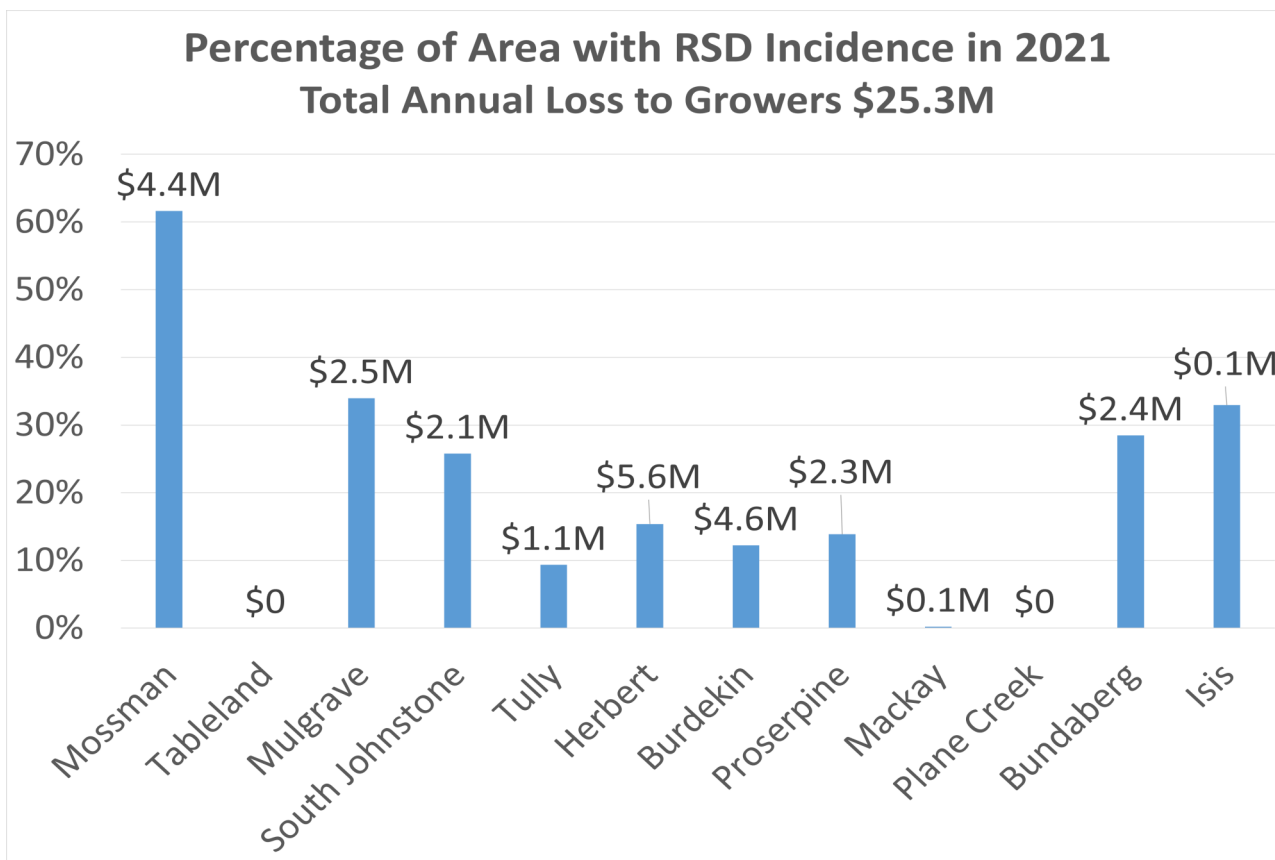
Victoria Plains				
Whole stick		Billets		
Ian Marais – 0417326669				
SRA26, SRA22, SRA21, SRA9, Q253, Q240, Q183, KQ228, Q208, Q208R		Q183, Q208R, Q240, Q253, KQ228, SRA9, SRA21, SRA22		
QS07-7049- subject for release at RVC meeting				
Pioneer Valley		North Coast	Racecourse	Marian
Whole stick Tannalo	Billets Dows Creek	Billets Pindi Pindi	Billets Bakers Creek	Billets Marian Hampden
Ian Marais – 0417326669		Brendan Rae - 0417326393	Indiana Zarb - 0439557839	Shane Hare - 0417326668
SRA26	SP80 SRA9	Q253 Q183	Q253 SRA9	Q208R SRA9

Industry RSD Comparison

RSD is present across most sugar cane growing regions and there are 3 key steps to minimise it's spread:

- disease-free seed cane is used to establish crops,
- crops are planted into volunteer-free land and
- equipment is decontaminated regularly.

No sugarcane varieties are resistant to RSD: they can all become infected, suffer yield losses, and further spread the disease. RSD can survive on base cutters for 4 days.



When your productivity officer does a plant inspection, they are only looking at a small percentage of the paddock, so a negative RSD test may not always mean your paddock is RSD free. As only a small number of stalks are sampled, it's recommended that the **most sensitive assay** is used:

- Slicing - Needs to be conducted by an experienced Productivity Advisor
- Phase - Contrast Microscopy (PCM) = older technology, microscope magnifies sample
- **qPCR DNA-based Assay = highly sensitive, quantitative, 1000X more sensitive than (PCM)**

Developing a system to test sugar juice for RSD at the mill lab is a current SRA research project. This will collect information from all rakes of bins supplied to mill to help understand RSD distribution across farms and the district.



VARIETY DEVELOPMENT

The SRA breeding team in the Central region plants about 35,000 unique varieties each year to cater for both the Central and Southern regions. From there these varieties enter a series of assessments that narrow that number down to a select few that are presented to the Regional Variety Committee (RVC) each year. The RVC are responsible for deciding which varieties are approved for release to the industry. The committee consists of 6 voting members (3 Canegrowers and 3 Miller Representatives), Grower co-operators, SRA and Productivity Services staff.

In 2022, the RVC approved the release of **SRA26^A** to Central region growers. It was distributed to growers in Proserpine and Plane Creek in 2022 and will be distributed to Mackay growers in 2023. **SRA26^A** was first released in the Northern region in 2019 and has since been tested in Central region FAT trials. It's performance in these trials is shown in the table below. **SRA26^A** is a variety that is resistant to smut, pachymetra, leaf scald, and red rot, and is intermediate to fiji leaf gall. It has been evaluated in plant and 1R crops in Central trials where it is slightly below in TCH & higher CCS compared to current commercial cane varieties.

SRA26^A is a reliable germinator with a semi-prostrate early growth habit, often up to and including at fill-in stage. It will straighten up to stand erect providing good harvester presentation. Preliminary experimental results and initial commercial experience in the Northern region suggest **SRA26^A** has RSD sensitivity similar to Q253^A. **SRA26^A** is a very sparse or non-arowing variety, is moderate trashing with hairy leaf sheaths and does not sucker readily. It is recommended in the North to be harvested mid- to late-season to maximise its CCS.

Variety: SRA26[Ⓟ]		Parentage: QN97-2122 x Q146				Summary: Slightly below tonnes cane; higher CCS.				
Trial harvest year	Crop class	Yield (TCH)				CCS				# of trials
		SRA26[Ⓟ]	Q208[Ⓟ]	Q240[Ⓟ]	SRA9[Ⓟ]	SRA26[Ⓟ]	Q208[Ⓟ]	Q240[Ⓟ]	SRA9[Ⓟ]	
(2020 series FATs): 2021	Plant	116	130	118	129	17.7	17.0	17.3	16.8	3
2022	1R	127	133	125	126	17.4	17.1	17.1	16.7	3
Overall performance		122	132	122	128	17.6	17.1	17.2	16.8	6



This year the RVC will discuss whether to release a new variety, **QS07-7049**. It's main features are consistently high tonnes in SRA yield trials, and combined resistance to smut and Pachymetra. It has a large stool with high stalk number, the stalks have average thickness with good length. **QS07-7049** has sparse arrowing, remains upright even in large crops, and doesn't sucker readily even in sprawly crops. Trial data shows that it has significantly higher TCH than the standards used in the trials but has lower CCS when compared to the same standards (see table below). **QS07-7049** has performed well in FAT trials for TCH on a range of soil types.

QS07-7049 has great disease resistance and has shown to be resistant against smut, Pachy, leaf scald, red rot, and intermediate for Fiji leaf gall. **QS07-7049** may be a good choice for growers with blocks with poor soils and high pachymetra. One concern with **QS07-7049** is that it suffers from brown rust similar to Q253; this moderate level of brown rust was observed in SRA FAT trials and also at the MAPS farm at Victoria plains.

Variety: QS07-7049		Parentage: CP70-1547 x QA96-1492			Summary: High tonnes cane; low CCS.			
Trial harvest year	Crop class	Yield (TCH)			CCS			# of trials
		QS07-7049	Q208[ⓓ]	Q240[ⓓ]	QS07-7049	Q208[ⓓ]	Q240[ⓓ]	
(2014 series FATs): 2015	Plant	105	95		15.7	17.4		4
2016	1R	112	104		16.0	16.8		4
2017	2R	86	84		17.2	18.5		4
(2018 series FATs): 2019	Plant	115	91	96	15.2	16.9	16.7	3
2020	1R	100	103	99	15.6	16.8	16.8	3
2021	2R	105	99	104	16.6	17.8	17.8	3
Overall performance		104	96	*	16.1	17.4	*	21

*Q240^A was only evaluated in the 2018 series FATs and can only be compared against those particular plant and ratoon crops.

SRA recommends that growers try new varieties on all management zones of your farm – eg. irrigation, soils, waterlogging.



New Research Projects Responding to Central District Priorities

The following SRA led research projects are currently in the final stages of contracting for commencement in 2023, some are in direct response to district priorities that are in our Central District Productivity Plan:

- Soldier fly diagnostics, distribution and development of an artificial diet – **Central District Priority**
- Development of a resistance screening method for chlorotic streak – **Central District Priority**
- Viruses to aid biological control of major root-feeding pests of sugarcane – **Central District Priority**
- Delivery of a pest and disease diagnostic step change for the sugarcane industry – **Central District Priority**
- Industry wide leaf and soil survey to detect hidden macro and micronutrient constraints
- Real-time drone detection and spot spraying of vine weeds in tall sugarcane
- Fiji Leaf Gall (FLG) Eradication Strategy: Peri-urban surveillance for area freedom
- Moth borers – How are we going to manage them when they arrive?
- Assess weed impact/distribution for prioritisation
- Understanding phosphorous requirements for sugarcane crops growing in alkaline soils

In addition to these research project there are a number of others that will be led by external organisations – details of these will be available on the website in April.

Online Sugarcane Nutrient Management Training

The Online Sugarcane Nutrient Management training course based on the SIX EASY STEPS® workshops was developed in order to reach more sugarcane growers who want to refresh or up-skill their knowledge of nutrient management for sustainable sugarcane production.

In response to requests across the industry from sugarcane growers and advisors alike, the training will also provide growers with the necessary knowledge to develop a nutrient management plan and create an annual nitrogen and phosphorus budget for their farms.

There are multiple options for recording the budget from hand written ledgers and Excel spreadsheets to software programs like Agtrix which is available through MAPS.

A face to face workshop will be held on the 14th of March in Mackay. A link to the training will be emailed out to all growers in the coming weeks when the training is launched.

2,4-D Aerial Application

The emergency use permit for MCPA has expired and the Australian Pesticides and Veterinary Medicines Authority (APVMA) have notified CANEGROWERS that trials to measure crop residue levels are required before any further approvals for MCPA to be aerial applied.

An alternative solution for aerial control of vines was proposed following a meeting with APVMA last year. In forestry 2,4-D is applied using “Accuflo” nozzles which produces low drift droplets like rain drops and if this was adopted in sugar cane the buffer zones may be reduced to ~5m. The efficacy of this application method is currently being assessed in Mackay and Far North and if successful will support an application for an Emergency Use Permit.

Standover Management

Nutrient Management

Previous experiences indicate there is little to no benefit in applying additional fertiliser to standover cane.

Pest Control

When standover blocks are near rat harbourage areas, a larger headland between the harbourage and the crop is advantageous. Any crops on the farm that have weed cover will increase the reproductive potential of ground rats and allow climbing rats to colonise the crop earlier than usual. Manage your in-crop weeds wherever possible to minimise rat colonisation and breeding across the farm. Maintain headlands with regular slashing to keep grass as short as possible through to the next harvest. Spray the edges of all crops, particularly standover and perimeter bait rat harbourage areas and the adjacent standover crop.

Strategic use of permitted rodenticides (prior to the onset of breeding is economically and environmentally viable). Ensure that products are used as per their label and recorded with the local productivity board in accordance with the local damage mitigation permits. There is also an industry wide permit for the aerial application of registered products containing 25g/kg of Zinc Phosphide in lodged crops.

Harvesting

The best time to harvest standover cane is early in the crushing season as this is when the CCS will be closest to mill average. Previous experiences indicate the mixing of standover cane with one-year-old cane can improve the CCS level. Consider burning standover crops prior to harvest as this may help remove most of the dead material. Burn blocks at a time when a good 'hot' burn can be achieved and harvest as soon as possible.

Cane to Creek Mackay Whitsunday

Two years of in-paddock water quality monitoring trials:

- Collected data supports known industry knowledge.
- New findings.

Farming practice	Message
Liquid Imidacloprid (Confidor, NuPrid) in ratoons	Apply as per label and best practice: <ul style="list-style-type: none"> • 100-125 mm depth (measured from top of soil, not top of trash). • Nozzle directed at bottom of double disc slot. • Cover the slot. • Applies for both stool split or side dress.
Residual herbicides	Most surface herbicide losses occur in the first flush run-off event: <ul style="list-style-type: none"> • Therefore, aim to apply herbicides away from high-risk periods i.e. high rainfall events. • Incorporate herbicides with irrigation (no run-off application). • In high-risk periods of storms/heavy rains, consider herbicides with less mobile actives such as flumioxazin (e.g., Valor) • Herbicides are highly vulnerable to run-off in the first 48 hrs following application - avoid application of residual herbicides where there is risk of run-off event within first 48 hrs of application.
Residual herbicides	Use lower aquatic risk actives: <ul style="list-style-type: none"> • Replace diuron/hexazinone with non PS11 actives for example imazapic (e.g., Spark) or isoxaflutole (e.g., Balance).
Fertiliser in final ratoons	Reduction of N rate by up to 20% for final ratoon crops. <ul style="list-style-type: none"> • Check 6ES Toolbox "Final Ratoon Crops" as it only recommends rate reduction where final ratoons are in poor condition.
Fertiliser in late season crops	Reduction of N rate by up to 20% for late season ratoons. <ul style="list-style-type: none"> • Check 6ES Toolbox "Late Season Ratoons" as it only recommends rate reduction where the late season ratoons are in poor condition.
Fertiliser and mill mud in ratoons	For any applied rate of mill mud or mill mud/ash, consider reduction in N rate to account for N in the mill mud or mill mud/ash. <ul style="list-style-type: none"> • Suggest use 6ES Toolbox "Accounting for nutrients contained in mill by-products"
Fertiliser	Similar DIN run-off results were found comparing surface applied liquid dunder and sub-surface applied granular fertiliser.
Fertiliser	Similar DIN and imidacloprid run-off results were found comparing sub-surface applied LiquaForce and sub-surface applied granular fertiliser.
Inter-row cultivation	Similar DIN, imidacloprid and residual herbicide run-off results were found comparing inter-rows treated with an aerator and non-treated inter-rows.

ADDRESSING SOIL HEALTH NORTH COAST LEGUME TRIAL

A healthy soil has good water infiltration and retention. The biological activity within the soil increases soil fertility and helps build good soil structure. These things reduce the need for expensive inputs and increase plant resilience to drought, pests and intense rains. Legumes play an important role in improving your soil health by adding organic matter to the soil, breaking the sugarcane monoculture and have the ability to fix nitrogen.

MAPS efforts to address soil health led to the development of our zero-tillage legume planter which has been used by growers over the last three years. The legume planter has demonstrated that a legume crop can be grown successfully into the existing row profile under a trash blanket. Dryland growers have grown and produced excellent crops using the MAPS planter.

Paul Manning farms 128 ha at Pindi Pindi on the North Coast, his soil type is mainly Solodic, a sandy clay loam over a mottled grey clay subsoil. Paul is continually trying to improve his soil health and over the years has planted legumes, mainly cowpea in his fallow. In 2021, Paul used the MAPS planter to direct drill soybean into the old sugarcane stool, this was a success which produced a uniformed green manure crop. Paul saw firsthand the environmental and soil health benefits of the planter and how it important it is to have his own seeder as timing of planting is critical under dryland conditions. Through MAPS, Paul applied for a grant with the Proserpine/O'Connell River Basin Water Quality Project towards the cost of a new planter. With the application successful, Paul constructed his own planter designed similar to the MAPS planter, but instead of seed boxes, he purchased an air seeder and fitted straight coulters prior to the seeder legs to improve seed to soil contact. The air-seeder has the ability to plant different seed sizes of legumes and other plant species.



In January 2023, Paul, with the help of Scott Bennett of NQ Farm Shed, planted demonstration strips of different legumes (see table below); they also applied a residual pre-emergent herbicide in some of the strips for demonstration and phytotoxicity symptom purposes. A grower field day was held in February at the demonstration sites providing an opportunity to check out Paul's planter and see how the different legumes handled the January rain event of 850 mls. The field day provided an excellent opportunity for growers to exchange their own experiences with break crops and gaining valuable information about legumes and soil health from Scott and the MAPS team.

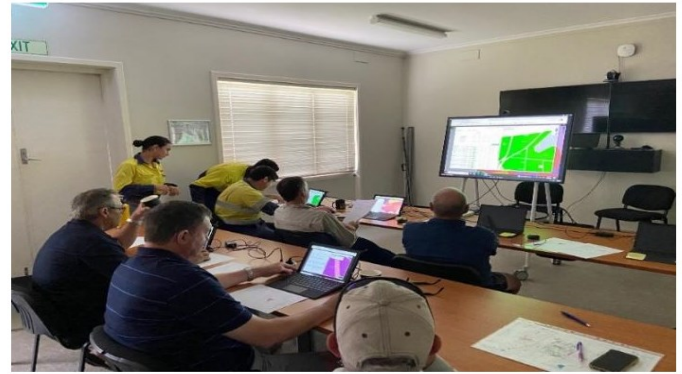
In the coming weeks, they will be taking bio-mass samples from the different legumes and analysing them for their Nitrogen content.

Multi-Species	Legume Mix	Cowpea	Fallow	Sunnhemp	Soybean
Buckwheat	Cowpea				
Pantain	Sunnhemp				
Sunnhemp	Soybean				
Cowpea					

GROWERS GET TO GRIPS WITH N & P BUDGET TRAINING IN AGTRIX GIS

MAPS and the Agtrix development team have been working on a project through the Great Barrier Reef Foundation (GBRF) to build on its current GIS recording platform to include some smart functionality that does a lot of the heavy lifting for you when it comes to farm record keeping and nutrient budgeting for your farm. This ultimately means less time writing notes and more time out in the paddock farming.

MAPS staff recently held short training/demo sessions for a group of growers who have shown interest in using the software to develop on farm N&P budgets.



Growers were shown the basics of the new platform and how to navigate between entering soil tests with tailored nutrient recommendations and copying those recommendations to adjacent blocks of the same soil type which in the end automatically developed a whole farm N&P budget.

They then could see how much fertiliser they need to order, save planned events as actual records and print reports with associated thematic maps related to recommendations and applications of products on their farms.



Grower feedback was encouraging, Therese Townley has welcomed the addition of N&P budget functionality to Agtrix as she uses it to record all their current farm nutrient and chemical applications and said it's going to be great having all their farm records in one place going forward as the N&P budget has always been a separate record for her in the past.

Albert Deboni of Devereux Creek a long-time user of Agtrix, has been recording his on-farm practices for a while now and said he likes that the records can be stored conveniently on a portable device with no mass of paperwork to sift through or get lost.

The Agtrix recording platform is a free service to growers that is a convenient and efficient way to meet current government regulations.

Soil Test, Recommendations, Action and Budget: Farm

Crop Type: Sugar Season: 2023 (GLD)

The Running farm total of soil, recommended and actual applied NPKS will be displayed here in kg

	Total (kg)				
	N	P	K	S	HA
Soil Test Budget	25456	2736	19183	2754	160.01
Recommended	25408	1635	17541	3359	160.01
Actual Applied	0	0	0	0	0
Budget Status	-25456	-2736	-19183	-2754	160.01

Soil tests and fertilizer recommendations are added to each paddock

Apply all as Actual

Paddock...	Ha	Class	Variety	Soil	N	P	Last	Status
37-1 - 7	3.24	Plant	Q240	Prairie	150	15	2023	Soil Rec
38-1 - 14	3.9	Old Rato...	Q208	Prairie	150	15	2023	Soil Rec
38-2 - 1	4.33	4th Ratoon	Q253	Podzolic	160	20	2023	Soil Rec
38-3 - 7	3.31	2nd Ratoon	Q208r	Prairie	150	15	2023	Soil Rec
40-1 - 13	2.58	1st Ratoon	Q253	Mountains And Hills	130	20	2023	Soil Rec

Paddock Soil Layer

- Black Earth
- Mountains And Hills
- Podzolic
- Prairie
- Solodic

If you are a grower in the Mackay Region looking to try the Agtrix Recording Software, please contact your Productivity Officer or Shane Hare at Mackay Area Productivity Services on 0417 326 668.

ITCH GRASS IS SPREADING

MAPS Productivity Officer, Steven Garrad, was contacted by a grower north of The Leap who was aware that he needed help with a grass weed problem. The grower had first seen the weed's appearance on a nearby cane rail siding about three years ago.

One of the 12 worst weeds of sugarcane, according to the Global Invasive Species Database (2020).

The grower had correctly identified it as Itch Grass (*Rottboellia cochinchinensis*) and he had made sure it was spot sprayed regularly. Knockdown herbicides proved effective in killing the individual plants, but a seed bank had rapidly built up and the weed had spread across the headland and into the nearby cane. Several pre-emergents had been tried but the weed seemed to germinate unchecked.

An aggressive, invasive grass

Itch grass has cylindrical, hollow stems, branching at the upper nodes (swollen areas on the stems where leaves arise). The leaves are blue-green when growing vigorously, otherwise yellowish, flat, 5-20 mm wide with conspicuous pale mid-vein. There are prop roots at the base of the stems, and plants produce multiple tillers. **Hairs of silica are present on the leaf sheath that can penetrate and irritate the skin.** Flowers are borne on a spike up to 15 cm long; the spikes can be on their own or in groups of 3-4, arising from the leaf axils at the top of the stem. As the spikes mature, the cylindrical rice-size seeds progressively break free starting from the furthest end and fall to the ground.



Hand weeding

At the time when the area of infestation was inspected (January 2023), the grasses were the height of the ratooning cane and had already set large amounts of seed which was dropping as it ripened.

An immediate strategy was to manually rogue the tussocks out of the cane. The damp soil made the task easier and gloves and long sleeves protected against the characteristic long sharp hairs on the grass stalk. After a dedicated effort there were tussocks piled on the headland for collection and burning.



Residual control

MAPS contacted SRA researcher, Emily Fillols at Meringa Station, for advice on controlling the weed with pre-emergents. She had noted some success with *Stomp® XTRA* – Active is *Pendimethalin*, 455 g/L – applied at 2 to 3 L/ha to bare soil and incorporated by rain or irrigation within 5 days.

Bobcat® Combi – a mix of Diuron and Hexazinone - is listed as an option for residual control applied as a spotspray @ 1 kg/100L water. Be aware of the closed window for Diuron from 1 November to end of May if applying more than 0.5 kg Diuron/ha and to not apply more than 1.8 kg ai Diuron/ha in any one season.

There is also a downwind buffer zone of 25 meters (aquatic) and 50 meters (terrestrial).

Keep Informed

Growers are encouraged to be on the lookout for this grass. Make yourselves familiar with its appearance and report any potential sightings quickly.



Mackay Sugar
Member of Nordzucker Group

Mill Mud available now.



Mackay Sugar has a limited volume of 2022 Mill Mud remaining at Marian which is available now for immediate delivery.

Mackay Sugar's Mill Mud will be made available to growers at 2022 prices, with pricing increases expected for the 2023 crushing season.

- ✓ 8000T of Mill Mud is available now for delivery from Marian Mud Pad.
- ✓ Order now. First in first served basis applied.



Who is eligible?

Existing Mackay Sugar Growers.



How do I order?

Use the contact details below to order now.



How does it work?

Mackay Sugar has a contractor standing by to deliver to your farm.



Order via Phone - 07 4953 8511



Order via Mackay Sugar Grower Web