

## Approved Seed the best investment for your crop

2021 has seen another increase in the uptake of clean seed cane taken from the MAPS plots, with over 1500 tonnes collected in whole stick or billet form. This is the largest uptake of clean seed the region has seen to date. A big thank you goes to Henry Barfield, Colin Dunn, Lachlan McLennan, Justin Muscat and David and Anthony Galea for the work they did in cutting the plants for growers.

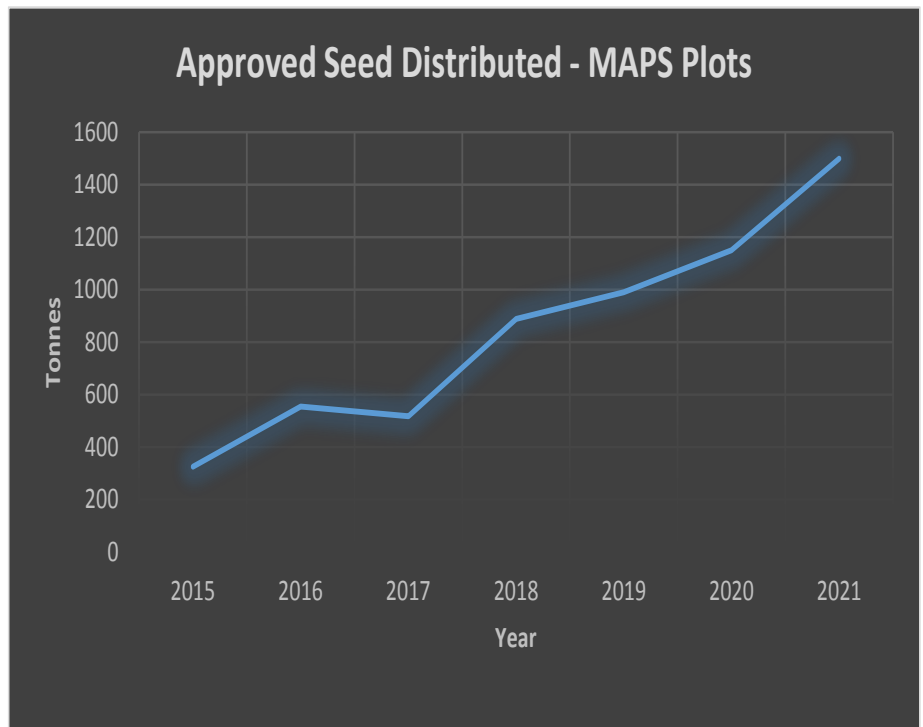
It's good to see growers utilising these plots as a convenient way to maintain their clean seed program and establish the best foundation of future productive crops.

Planting is one of the most expensive farming operations when growing cane and has a large impact on the long-term productivity of a block. MAPS recommend that a clean seed source of a variety should be collected from an approved clean seed plot every three years.

Now with the additional approved plots, growers can collect clean seed in billets on a yearly basis. Using approved seed cane is the best way to minimise major diseases such as chlorotic streak, leaf scald and ratoon stunting disease. Good-quality seed cane is critical to successful crop establishment.

For the 2022 planting season, clean seed can be sourced from three MAPS approved plots throughout the Mackay Sugar region, located at Victoria Plains, Calen and Benholme. A fourth plot in Homebush will be ready for distribution in 2022.

For further details of the plots please contact your MAPS Productivity Officer.



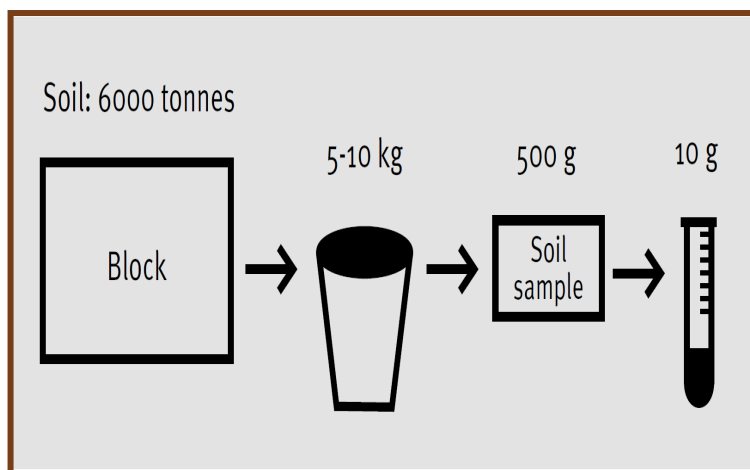
# SOIL SAMPLING

With growers required to have an N&P budget for the 2022 season, the timing of soil sampling is very important and needs to be addressed. Sampling should be conducted at a time that allows for analysis of the sample and interpretation in good time for recommended treatment. If you suspect acidity, salinity (salt) or sodicity (poor soil structure) to be a problem, than soil analysis is recommended 3-4 months prior to planting so lime and/or gypsum can be applied and take effect.

Timing is the critical key for an accurate soil test analysis along with ensuring that samples are kept cool once taken. So when is the best time to take soil samples?

- At the end of your cropping cycle which can be from now on.
- Account for soil types – only one soil test needs to be taken for each soil type.
- Identify paddocks/block management practices- mill mud applied, ash applied, water logging etc.
- Select a sampling pattern that provides a representative sample, is repeatable and efficient.
- Avoid working ground and burning off any trash before soil samples are taken, as these can have an effect on the end soil test results (trash in the samples can raise organic carbon levels which could give a false impression that the soil health is way better than it actually is and this will reduce 'N' inputs). Ash could also increase 'K' levels.
- Avoid areas that are not representative, old fertiliser bands, old headlands, fence lines etc.
- Ask your agronomist to rake the trash away from the sampling site and take the sample between the old fertiliser band and the middle of the row (usually this is just to the side of the cane row).
- Ensure sampling equipment is clean (no soil) from previous sampling and use tools that cannot contaminate the soil sample. Galvanised augers must not be used.
- Sample depth is crucial for proper representation of the block/soil type being sampled. For sugarcane the correct depth is from 0-20cm with a 25mm core.
- Ensure enough samples are taken to fully represent the block. Soil test methodology says 20-30 samples with 25mm diameter cores ( $\pm 15\%$  error), preferably at least 10 samples. One core is not sufficient nor a true representation.
- Record geo-coordinates of sample patterns, type of sampling pattern, sampling equipment used, depth, date and field conditions.
- Protect collected soil samples from heat, sun and contamination.
- Store samples briefly in a refrigerator at  $3^{\circ} - 5^{\circ}\text{C}$  prior to dispatch.

- Ensure the Laboratory is certified for particular test analyses and that their results meet qualifying criteria, with their annual certification status updated on the ASPAC website. Send to laboratory shortly after collection.
- Correctly fill out all details on the sample submission forms.
- Follow relevant biosecurity requirements with respect to movement of samples within and across borders, and within and between farms.



*\*This information was an abstract from Fertcare 'A guide for "fit for purpose" Soil sampling'.*

# AgTrix Farming usage assists in successful farm chemical audit

As growers will be aware, Dan Stampa and Phil Morris of the Pesticide Project Team from the Department of Agriculture and Fisheries are currently carrying out a review of farm chemical usage and storage on farms in the Mackay region. The exercise has highlighted the importance of detailed and accurate record keeping on farm. A recently completed review of Charles Townley's farms has demonstrated the important role the AgTrix Farming program can play in this process.

The Townley's farming business was very positive, cooperative and open to the assessment process and on initial discussions and review of chemical operations it was identified that the Townley's had a good standard of records but were missing a few critical label records, such as full nozzle details (Brand, type, size, angle, operating pressure) and air temperature and humidity readings.

The majority of their applications were according to the labels but there was some concern with the application of imazapic (Impose) and diuron and hexazinone (Bobcat Combi) in proximity to some waterways.

The audit review process provided a great opportunity to discuss a number of items including;

- The most suitable way for the Townley's to keep records for their business operations
- What things are required to be recorded and how best to record them
- Definitions and label references to waterways, aquatic and terrestrial systems
- How different labels require different management even though the same active ingredient is used

On returning for a follow-up review, it was very clear that the Townley's had spent time to research, review and discuss chemical management within their business. Through the investigation and implementation of the AgTrix system, the Townley's were able to easily record all their chemical use requirements in one place and quickly and easily provide them electronically as part of the review process.

By reviewing their chemical use in a GIS based system, they were able to easily identify high risk areas (sensitive vegetation, waterways, housing areas etc) and review individual product usage across individual farms and blocks.

Together with an increase in product knowledge, better understanding of label requirements and a GIS record system, the Townley's have clearly demonstrated better chemical stewardship and have now been identified as fully compliant for chemical management.

Field	007-0001-5	1-3	Sugar	Q183	2nd Ratoon	1.13ha		
			Wind			Rain	Delta	
Date/Time	Duration	Stage	Weather Source	Speed	Direction	Temperature	Forecast	T
02/02/2021 09:30	3 hrs	Canopy closure	Portable (Direction and Speed)	6km/h to 8km/h	E	22°C to 31°C	None	3.4
Humidity	Cloud Cover	Method	Nozzle	Operator				
75%	30%	Flat Boom	Flood Jet					
		Product		Rate	APVMA/Batch	Actives		
		AC TRAPPER 750 HERBICIDE		1.4 L/ha		MCPA PRESENT AS THE DIMETHYLAMINE SALT @ 750g/L		

**Example of chemical report**

# Going Mobile to Record Nutrients and Chemicals applied on farm

Keeping records of chemical and nutrient applications has become a requirement of farming and there are many ways to do it. From notepads to farm maps, growers have found the best option for them.

In this space MAPS have been working with software developers at Agtrix to develop a computer program that allows growers and MAPS staff to record electronically to a farm mapping system. This has certain advantages and benefits over traditional pen on paper.

- ✓ Electronic records cannot be lost when saved in a cloud storage database.
- ✓ Growers farm records can be protected by a password encrypted account.
- ✓ The program is designed around the legislative requirements ensuring that all the necessary details are recorded for chemical and nutrient applications.
- ✓ Record retrieval is quicker in computer programs with the option to filter by paddocks and print reports.
- ✓ Records can be edited if mistakes are ever made.

In addition to the computer program, a mobile phone app version has recently been updated that allows growers to record chemical and nutrients to their own farm paddocks from the palm of their hands.

**Figure 1** shows the front display of the mobile phone app with big orange buttons for each type of recording event.

The advantages of going mobile are numerous. Most importantly it allows growers to record from their sheds or tractors at the time of application instead of leaving it for the end of the day or even the end of the working week when it's not so fresh in their memory.

Also, if your favourite chemical brews, spray equipment and applicators are created in the computer version of Agtrix, then these will carry over into the mobile app each time you login.

Significant time can be saved by having all your common brews and equipment (like boom sprays and billet planters) readily available to select in the phone app.

When recording any application the mobile app allows you to select one or more paddocks from your own farm map as shown in the steps pictured overleaf. Once your blocks are

highlighted by tapping on them with your finger you choose the nutrient blend or chemical brew, the equipment used, the application rate and method and then save that immediately.

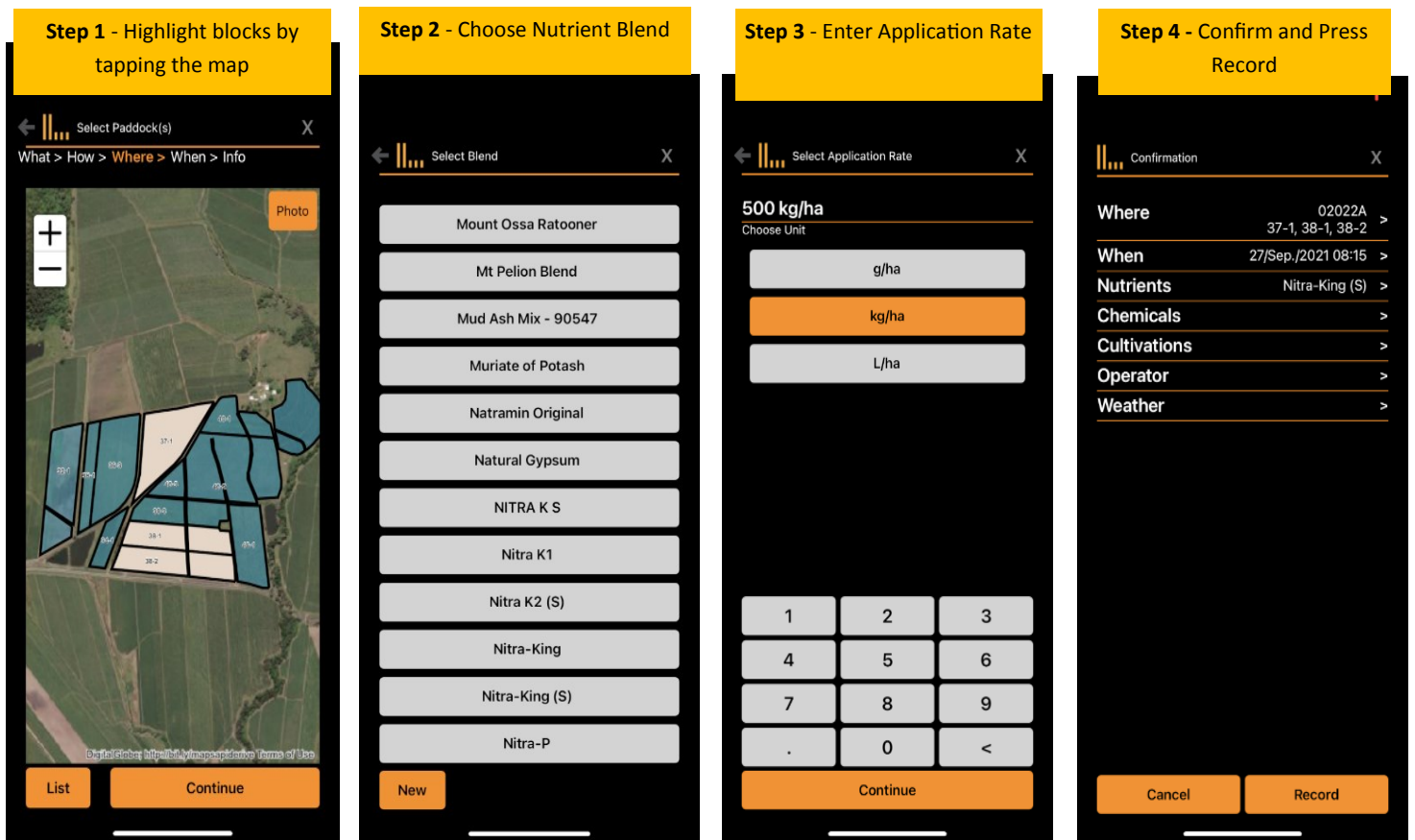
This record will then be immediately visible in the computer version of Agtrix where your records are stored and can be edited or printed as reports when you need them.

The mobile phone app makes farm recording as simple and as quick as possible and is completely free to download today.

**Figure 1** - Front display of Agtrix Mobile App



If you want to give the Agtrix recording app a try please contact your local MAPS advisor who can help you to create your free account and give you a run through on how it all works.



## Rat Baiting MUST be recorded

If you have baited for rats or plan to bait, please let your Productivity Officer know the details straight away! If you are going to bait, you can record your baiting on the MAPS website by following the links.

MAPS must have this information, so we can report to government every three months in line with our Permit. MAPS has secured a Damage Mitigation Permit from the Department of Environment and Science till November 2024.

Only use Ratoff, ZP Rat or Racumen for baiting rats on farm.

Failure to report your baiting and the use of non-registered baits will spell the end of our Mackay Sugar-wide Permit. It will then be up to each and every Mackay grower to deal with government when they want to bait for rats.

Good in-crop weed/grass control and keeping non-crop grass/weed patches around the farm mowed or grazed will reduce rat breeding and rat damage. Some of the common findings of rat damage currently being reported can be seen here.





Figure 1: Dogboxes and flumes setup at one of the demonstration sites.



Figure 2: SRA Project Officers Steph Duncan and Karanbir Singh Sidhu collect water samples from one of the monitoring stations.

# MACKAY WHITSUNDAY CANE TO CREEK YEAR 2 DEMONSTRATION SITES

**E**ach day on a very busy rural road in the Mackay district hundreds of drivers speculate on the purpose of three dogboxes and six flumes located in a cane paddock visible from the road. Theories range from animal traps, insect monitoring to early-stage sub-division work.

The dogboxes and flumes are set up to monitor run-off water from the paddock during rain events. The aim is to determine the amount of the applied nutrients, insecticides and herbicides which leave the paddock during run-off inducing rainfall events. This equipment will provide data on the environmental impact of the farming practices (under demonstration) – the productivity impact will be assessed through yield measurements during the 2022 harvest season. At this particular demonstration site we are considering the effect of inter-row cultivation on nutrient/chemical run-off and productivity.

Two other sites in the Central region have been setup with the same monitoring equipment similarly targeting nutrient, insecticide and herbicide run-off. One demonstration site is focussed on a commercial liquid fertiliser and its application, with the other demonstration site investigating the environmental and productivity effects of banded mill mud in ratoons. This latter site has had one run-off rain event and water samples collected for analyses.

The three demonstration sites are part of the Year 2 work for SRA's project Cane to Creek Mackay Whitsunday. The Cane to Creek Mackay Whitsunday project aims to build the knowledge of farming practices and the effects on the quality of water leaving the paddock and on farm productivity. This knowledge can be used by growers to select farming practices that are beneficial for both the environment and farm production.

Our thanks go to the growers in 2020 and in 2021 who have allowed us access to their paddocks to conduct the demonstrations.

The water quality results from the three sites will be presented to the industry after the wet season in 2022.

More information about the project is available on the [SRA website](#).

The Cane to Creek Mackay Whitsunday project is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation with support from Sugar Research Australia, Mackay Area Productivity Services and Plane Creek Productivity Services.



Great Barrier  
Reef Foundation



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As of the 1st December 2021, all growers in the Wet Tropics, Burdekin and Mackay Whitsunday catchments are required to have an N&P budget. Growers accredited under the Smartcane Best Management Practice (BMP) Program, which is a recognised accreditation program under the Environmental Protection Act 1994, do not need to use an appropriate person to update, review or verify their N&P budget. This only applies while a grower holds a

current accreditation under the Smartcane BMP. Should a grower cease to be accredited, the requirement for review, updating and verification by an appropriate person will apply. Growers who are not accredited will need to use an appropriate person to develop and verify their first N&P Budget. However, growers who then become Smartcane BMP accredited will not need to use a third-party appropriate person for the five-yearly review, assuming they remain accredited at that time.

This requirement will remain in place whilst the Smartcane BMP Program is a recognised program under the Environmental Protection

Act 1994. Recognised programs provide assurance that a person is complying with the agricultural ERA standard (e.g. sugarcane cultivation).

This requirement is in place because through the BMP accredited growers already:

- comply with all regulated soil testing and N and P application requirements and meet the BMP standard for overall nutrient management
- have their nutrient management standards independently assessed by a third party
- have annual reviews and must confirm they are continuing to meet the BMP requirements may be

subject to an audit to re-assess their compliance with all BMP requirements at any point during the five-year accreditation period

- undergo an independent third-party audit of all BMP requirements to renew their accreditation after five years

The Smartcane BMP Program is grower driven and not compulsory, so your participation is essential to help reduce the risk of ongoing interventions on how we farm. It's all about you, and 'setting the record straight' by showing our farming practices and records are at or above industry level.

**Smartcane BMP Contact:**  
Indiana Zarb – 0439 557 839

smartcane.com.au



## Grower reaps the benefits of improved fertilizer program

The GBRF/MAPS' water quality program is in its second year, continuing to provide tailored agronomic advice on nutrient management to growers in the Mackay region. The program can assist you improve your nutrient program and upgrade your nutrient application equipment, thanks to funding from the Great Barrier Reef Foundation.

After participating in the program, Hamden grower Peter Doyle received a grant towards purchasing a StoolZippa™. He has had success using the StoolZippa™ in sandy soils and is considering narrowing the angle of the disc openers to encourage more successful soil coverage in the heavier clay soils.

The project is continuing in 2022 and 2023. Growers who get involved are eligible for:

- A \$2000 grant towards upgrading nutrient application equipment and/or soil testing
- Tailored advice and recommendations on your fertilizer program
- Help with N&P Budgeting



To find out more, talk to your local Productivity Officer or contact:

**Andy Humphreys**  
0407 334 141  
ahumphreys@maps.org.au

**Erin Headon**  
0417 326 672  
eheadon@maps.org.au



Great Barrier  
Reef Foundation

# IT PAYS TO IRRIGATE

**If you're not fully utilising your irrigation, we want to hear from you!**

It has been identified that irrigation is not used to its full potential in the Mackay Whitsunday region.

We would love to learn your thoughts on irrigation, so SRA is able to assist growers in improving productivity using irrigation.

Please complete the survey here: [SRA Central District Irrigation Survey](#). Responses to this survey will be anonymous, unless you wish to be contacted.

## Does it pay to irrigate?

The rising cost of electricity and water have potentially scared you away from irrigation, but have you worked out if irrigation is still a profitable operation on your farm?

Typically, cane yields are increased by **6 to 10 tonnes of cane for each megalitre (ML)** of water applied.

Below are 4 examples of the costs and profit associated with running a winch in different scenarios:

		Eton Irrigation Pipeline	Ground Water	PV Water Riparian	PV Water Septimus
Costs \$/ML	Water Usage	14	0	4	55
	Electricity Usage	60	90	90	0
	Irrigator Move Labour	50	50	50	50
	Interest 2yrs @5%	12	14	14	11
	<b>Total</b>	<b>136</b>	<b>154</b>	<b>158</b>	<b>116</b>
<b>Potential Profit \$/ML</b>		<b>184</b>	<b>166</b>	<b>162</b>	<b>204</b>

Key points:

- Water allocation charges are a cost to you whether you use the water or not, so only consider the usage cost when assessing the value of applying irrigation. In the examples above, the allocation charges would be more than covered with the potential profit.
- To calculate your own electricity usage cost/ML:  

$$(\text{End kWh} - \text{Start kWh}) \div (\text{End water meter ML} - \text{Start water meter ML})$$
- If your pumping costs are significantly higher than in the example above, there may be opportunities to improve the efficiency of your system.
- Costs for irrigation are incurred up to 2 years prior to you receiving all cane payments, the interest component demonstrates that the cost of finance can be covered by the additional crop grown through irrigation.
- Please contact Steph Duncan at SRA Mackay on 0459 863 298 if you'd like to discuss your irrigation efficiency further.
- $(\text{End kWh} - \text{Start kWh}) \div (\text{End water meter ML} - \text{Start water meter ML})$

# Early soybean planting in Wagoora



**Mixing seed with inoculant before planting**

Steve Comelli has been wanting to improve his soil health and increase his organic matter on his Wagoora farm. He decided to plant a green manure crop of soybeans in this sugarcane fallow period and as a participant in the Proserpine O'Connell Basin Project, he used MAPS soybean planter. He fallowed a 7 ha block early and had the trash bailed so as to make working the soil easier. Mill mud at 75 t/ha was banded and incorporated.

An early storm at the end of September 2021 gave Steve the opportunity to get the Leichardt soybeans planted in the beginning of October.

Most of the bean had sufficient moisture to germinate except for some patches of heavier soil which were a bit too cloddy and dried out; a quick irrigation with the winch was enough to bring up the bean in those areas.

The block initially had no weeds, but there were soon patches of nutgrass and small vine growing; an overall spray of Spinnaker at 140 g/ha has been effective. There has also been an incursion of Soybean Moth when the crop was quite young, but an application of Abamectin at 300 ml/ha has sorted them out.

Normally the bean would have been planted on a raised bed to keep them out of any standing water after a major rainfall event, as they will be well established by that stage and should be able to handle any flooding. Steve will be spraying the bean out at early pod formation, probably at the end of January 2022.

Steve is pleased with the result so far even though there were some germination issues. Soybean will compensate for any population shortfall especially when planted so early. He feels he has learnt a lot and will be more confident when planting next year.

If he manages to get some more cane harvested this year and the weather is kind to him, he will try and plant more soybean through the trash blanket into the old stool of the fallow blocks.



**Early soybean emergence**



**60 days after planting**

# Milkweed Control

Milkweed, *Euphorbia heterophylla*, is a common but serious weed species that competes vigorously with sugarcane in the early growth stages. It is described as a milky-sapped, annual growing, erect plant, reaching 60 - 120cm tall. The leaves are ovate in shape and occur in opposite pairs at the lower nodes and flowering site but are alternate over most of the stem. The flowers are found in clusters at the top of the stem and are yellow or green in colour. Small fruit are formed after flowering which separate into three segments to aid in seed dispersal. Milkweed seeds germinate deep within the soil and plants will grow in low light conditions beneath the canopy.



Cultivation or tillage is not an effective control method for milkweed because each root segment can give rise to a new plant. The same can be said for burning, this will effectively kill the top portion of the plant, but it can grow back from surviving parts under the soil.

Therefore, chemical control of milkweed, either by broadcast application or spot spraying is the most effective form of control. It is outlined in the following table from the 2021 SRA Weed Management Manual.

WEED	WEED STAGE	TREATMENT	RATE/HA	INDICATIVE COST/HA (GST INCLUSIVE)	COMMENTS
Milkweed	< 8 true leaves	dicamba (Cadence WG) + atrazine (900g/kg)	560g + 830g	\$10 + \$7	Boom or directed spray.
	Up to flowering	fluroxypyr (Comet 400)	1500mL	\$74	Better control achieved with the atrazine mixture. Delay application until just before the cane reaches the "close-in" stage.
		or	or	or	
		fluroxypyr (Comet 400) + atrazine (900g/kg)	1150mL + 2200g	\$57 + \$20	

Herbicides are an important tool in weed management and should be used in accordance with label directions.

As the year draws to a close, on behalf of staff and the Board, MAPS wishes you a Merry Christmas and a safe and Happy New Year.  
Our office will be closed from 4pm Friday 24<sup>th</sup> December and will re-open Tuesday 4<sup>th</sup> January.