HCPSL

Herbert Cane Productivity Services Ltd.

THE CANE STALK

December 2021

Message from the Manager:

Once again, 2021 was a very busy year for the HCPSL team providing services to the Herbert cane industry.

Noticable achievements for 2021 were:

Clean seed provision

1482 tonnes of clean cane through the Clean Seed plots and 138t of cane hot water treated for growers. 17,000 tissue culture plants were sold to growers. These were the highest quantities of clean seed provided over the past few years.

General disease management.

HCPSL continued to provide its Clean Seed, farm, and biosecurity inspection services.

HCPSL offered a new RSD testing method (qPCR) to growers in 2021 with 1577 samples collected. The company also undertook 1707 RSD tests using the PCR method in 2021. Compared to the total of 1771 samples undertaken in 2020, the 2021 figures indicate a significant uptake in testing over the past year.

The HCPSL nematode and *Pachymetra* soil testing service analysed near 100 soils supplied by growers. These soil tests were analysed by both the SRA and SARDI labs. Results show that *Pachymetra* root rot continues to be a significant issue across the district.

Pest animal management.

HCPSL continues to invest in the Hinchinbrook Community Feral Pig Management Program with over 700 pigs being taken out through shooting, baiting, and trapping activities this year.

HCPSL worked with Hinchinbrook Shire Council and Herbert River CANEGROWERS, politicians, and the APVMA to maintain the opportunity to use the chemical 1080 for feral pig control.

The team assisted growers with advice concerning rat management (especially in late harvested cane).

Photo above left- RSD testing. Photo above right- Cutting Approved Clean Seed cane at the HCPSL Stone River farm.

Courses on Offer to all Growers:

- Six Easy Steps
- Intergrated Weed Management
- Precision Agriculture
- Auschem (formerly Chemcert)

INSIDE THIS ISSUE:

Variety development.
HCPSL continued to support the SRA and Wilmar plant breeding programs, as well as making its own significant investments in this space. HCPSL continues to screen varieties for ratoonability, agronomic traits, and general suitability in the HCPSL funded trials.

It must be noted that **HCPSL does not breed new varieties** for the industry; this is SRA's role.

Soil management.
HCPSL is a member of the National Soil Cooperative Research Centre (CRC), HCPSL supporting a number of soils-based projects in the district.

In order for HCPSL to secured funds under the National Landcare Program to assess the impact of organic (green) waste streams from Townsville and Hinchinbrook Shire Councils. Trials were harvested this year.

HCPSL continued to maintain and harvest the field demo sites that were established under the SRA Soil Health Project.

Farm and nutrient management plans.
Over 200 growers were assisted with the development nutrient and farm management plans for their farms. These activities were funded through the Project CaNE and Project Catalyst programs.

Precision Agriculture.
HCPSL continues to support and maintain the community GPS base station network.

Over 3500 hectares have been EM mapped with the HCPSL Dual EM unit. The data generated is now assisting growers better manage sodic and saline soils, with many growers now applying variable rates of lime or gypsum across a field.

Extension activities
HCPSL conducted its annual Herbert Walk and Talk Day, numerous shed meetings, and forums.

The very successful Farming 4 Cash™ and Farming 4 Cash™ Back to Basics series workshops were delivered throughout the year, with growers coming back for more information concerning crop nutrition and soil management. Farming 4 Cash™ and Farming 4 Cash™ Back to Basics workshops were funded through Project CaNE and Project Catalyst projects.

Office hours over the Christmas/ New Year break.
Our office will remain open throughout the Christmas and New Year break to ensure we service your requirements. Some staff will be taking a well-earned break between early December and February. On their return they will attend to your enquiries.

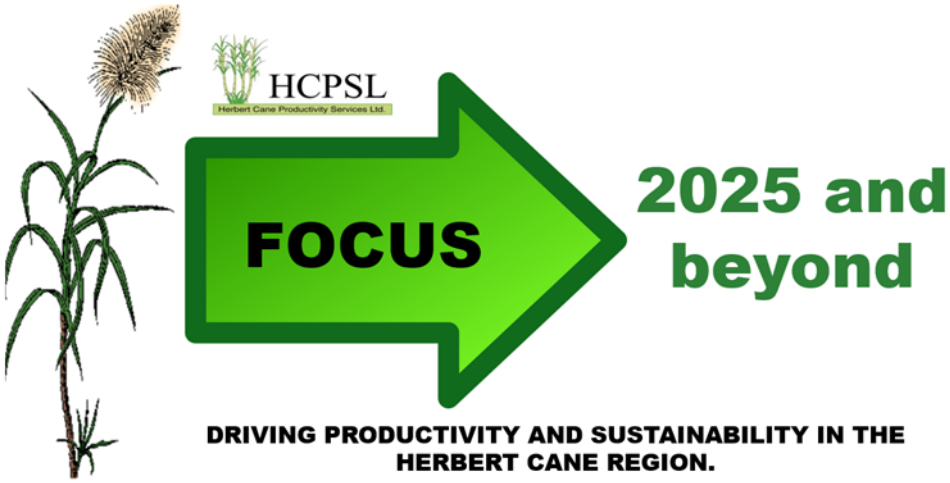
Thanks.
I would like to thank the Board and staff for the huge effort they put in this year. HCPSL has now become the principle sugarcane technical services group for the Herbert cane industry, providing multiple services to the local industry.

HCPSL would also like to thank the industry for its continued support in 2021 and look forward to servicing the industry once again in 2022.

If you have any concerns or suggestions on how we can service our members better please contact me on 47761808 (office), 0448084252 (mobile) or ldibella@hcpsl.com.au (email).

Have a Merry Christmas.

Lawrence Di Bella
HCPSL Manager.



HCPSL undertakes a Strategic Planning process every 3 years to establish company work programs and activities for the following 3 years; this activity commenced in November 2021. The HCPSL Strategic Planning program was titled: "Focus—2025 and beyond", encouraging participants to think long term what they would like the company to look like and what services it may offer long term. Participants in the process were also provided an update on what the company had achieved over the past 3 years by the company Manager.

As a part of the Strategic Planning process:

- 150 growers from the industry were randomly selected and invited to attend 1 of 4 meeting across the district to obtain their views, opinions, suggestions, and concerns from a cross section of the industry. These meetings were well attended.
- Wilmar management and staff were consulted.
- All growers were asked to contact HCPSL if they had any suggestions on what services they would like delivered by the company going forward, their views and opinions of the company via an email circulated.
- Grower Collective Groups, HCPSL staff and interest groups were asked for their input into the process.
- Company co-operators and funding providers were surveyed concerning their views on company operations and experiences with the company.

Feedback from all involved will be collated and reported back to the company Board and management in late 2021 to establish a clear vision and work program for the next 3 years. The outcomes of the Strategic Planning process will be reported back to industry in early 2022.

HCPSL aims is to continue to strive for improvement through the services it provides for its members.
On behalf the company thank you for your continued support of the company over the years.

Regards,
Michael Waring
HCPSL Board Chair

Staff Profiles at HCPSL

Hello, my name is Bethany Donker. I moved to Ingham to join the team at HCPSL in July of this year after completing a Master of Agricultural Sciences in 2020. As part of my studies I had the opportunity to contribute to a research and development project with the Australian Centre for International Agricultural Research (ACIAR) developing an extension tool for supporting productive, profitable, and sustainable practices within mixed crop-livestock systems.

My current role is with Project Catalyst's Grower Support program where I have been assisting in the development of nutrient management plans. Since joining the team I have also had the chance help Megan with the harvesting and preparation of a number of Catalyst trials covering everything from mixed legumes to enhanced efficiency fertilisers and reduced nitrogen rates after mud. I am looking forward to our upcoming workshops as a chance to meet with producers and develop my understanding of cane production in the Herbert district.

Hello, my name is Melissa Royle, and I am an Administration and Technical Support Officer – Projects at HCPSL.

I grew up on a wheat and sheep farm in Red Cliffs Victoria. My family name Simmons, farmers who come from England in 1851 became one of the early pioneering wheat and sheep farming families who helped clear the Mallee for crops in the Sunraysia area around Mildura and Red Cliffs Victoria. In 1996 I moved to Ingham with Adam my husband and have called Forrest Beach home for the past 26 years.

I started working for HCPSL in 2012 as a Field Technician on the early externally funded trials managed by HCPSL.

After working six years in the paddock, I moved into the HCPSL office in a Technical Support Officer role working on the WTSIP and Herbert RP161 projects.

I am currently working with the Project CaNE and Catalyst teams as their Support Officer, collecting and collating grower soil test data for CaNE and Catalyst nutrient plans. I also support the team with all office operations meetings, workshops, travel arrangements, promotional material, and office administration support pertaining to the externally funded projects.

I thoroughly enjoy my job and get satisfaction helping industry achieve positive outcomes.

Project CaNE
CROP & NUTRIENT EFFICIENCIES™

Apply Now!

HCPSL
Herbert Cane Productivity Services Ltd.

On 1st December 2021, under the Queensland Governments Reef protection regulations, all sugarcane farmers in the Herbert region will need to have a Farm Nitrogen and Phosphorus budget.

HCPSL, through Project CaNE™, is offering a limited number of eligible growers the opportunity to develop a CaNE Plan™, which includes a nitrogen and phosphorus budget.

What is a CaNE Plan™?

CaNE Plan™ is a whole farm nutrient management tool that provides growers with a one-stop solution to managing and recording on-farm nutrient applications.

Based on SIX Easy Steps, CaNE Plan™ is easy to use, paper-based, reef regulation compliant, and can be used toward BMP accreditation.

What do I get from doing a CaNE Plan™?

- ✓ A whole farm nutrient management plan and record keeping book.
- ✓ On-farm support with soil testing and tailored agronomic advice
- ✓ Access to Farming 4 CASH® and Back 2 Basics™ Workshops (hands on, interactive workshops tailored to grower needs)

Who Can Do a CaNE Plan™?

Free to eligible growers, Project CaNE™ is looking for growers who have not yet developed a nutrient management plan. Growers interested in a CaNE Plan™ should contact HCPSL on 47761808.

Click on the link for more info on the Nitrogen and Phosphorus Budget –

Reef protection regulations Farm nitrogen and phosphorus budget guide for sugarcane cultivation (www.qld.gov.au)

FOR FURTHER INFORMATION & ADVICE CONTACT HCPSL

181 Fairford Road, Ingham QLD | (07) 4776 1808 | www.hcpsl.com.au

Australian Government | REEF TRUST | Great Barrier Reef Foundation

Project CaNE™ is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation.

Why do we Lime?

By Jarrod Sartor

Amelioration of the soil is an important part of agriculture. One of the ameliorants commonly used is lime. Lime, or calcium carbonate, has multiple functions within an acid soil. The calcium acts as a crop nutrient and helps to maintain soil structure and the carbonate alleviates the acidifying effects of rainfall, crop growth and N-based fertilisers.

The Calcium

Calcium is not only an important nutrient for crop growth but is also important for correct soil structure. Calcium is essential for the growth and development of the cane spindle, roots, and leaves, strengthens the plant and has an important role in nitrogen use in the plant (Australian Sugarcane Nutritional Manual, SRA). For healthy soil structure calcium should be the major component of the cation exchange capacity (CEC) within the soil. It is recommended to be between 65-80% of the CEC. If calcium were to fall out of this range the soil may become magnetic or sodic or effect the crop through aluminum toxicity. Aluminum is present in most soils but it only becomes soluble to the CEC if the pH reduces to below 5.5. Aluminum is not only toxic to plant roots it also reduces the availability of essential nutrients. Soil can only have a certain amount of nutrients soluble (or plant available) at any one time, so as pH decreases below 5.5 aluminum becomes more soluble more aluminum means fewer essential nutrients like calcium, magnesium, potassium.

The pH

The main acidifying effects in a tropical environment are rainfall, crop growth, and N-based fertilisers. Soil acidification is driven by hydrogen ions (H+). Rainfall is slightly acidic due to the carbonic acid from the atmosphere, nutrients leached by rainfall are usually replaced by the H+. As plants grow, they exchange the nutrients in the soil with H+. In the nitrogen cycle in the soil as urea changes to ammonium it will absorb H+ and raise the pH in the fertiliser band, but as ammonium changes to nitrates it will release H+ and lower the pH in the fertiliser band. The above points show that in a tropical environment pH will naturally decrease over the years, regardless of the amount of fertiliser or crop grown on it.

Fertiliser	Kg of lime required to neutralise 100kg of fertiliser
Anhydrous ammonia	148
Sulphate of ammonia	113
Urea	83
DAP	65
Super phosphate	0
Potassium chloride	0

*Source taken from Agronomy in Practice

When applying lime it is important to keep in mind that it will need time for it to properly neutralise the acid in the soil. Work has shown that it would take roughly 12 to 18 months for pH to reach its maximum in the soil. Timing is important and applying lime just before planting will only have a limited on that plant crop and will only begin to affect the first ratoon.

Liming is just one part of the amelioration and farming process and is not a silver bullet to fix all issues. It is a good place to start though to get the best out of your cane and crop cycle; and for fixing any issue with calcium, low pH, and aluminum, lime is the most efficient and effective product to use.

For more information contact a HCPSL extension agronomist.

SOIL TESTING

By Ellie McVeigh

Soil sampling forms the basis of an effective fertiliser program. Soil testing determines nutrient inputs by identifying chemical properties and nutrient deficiencies. Since 2010, is has also been mandatory under QLD Reef Regulation to soil sample blocks being planted to sugarcane.

Why soil testing is important:

- Determines nutrients and deficiencies of the soil
- Assists in monitoring soil changes
- Calculates crop nutrient and fertiliser requirements
- Monitors soil issues – acidity, sodicity or salinity
- For applying adequate fertiliser for the crops needs
- Maintaining soil health and water quality

It is recommended that soil sampling be conducted straight after harvest. This allows for remediation or the application of ameliorants (lime, gypsum etc.). It is also very important to sample before the soil is cultivated or ploughed out. Sampling after cultivation can result in increased organic matter in the sample, subsequently resulting in a skewed organic carbon reading. As organic carbon determines nitrogen requirements it is important to soil sample using this strategy.
(Source: Sugar Research Australia's Australian Sugarcane Nutrition Manual)

Soil Sampling Top Tips

- Sample prior to cultivation to avoid organic matter in the sample
- Sample from an area that is a fair representation of a block
- Avoid sampling on the fertiliser band
- Sample a depth of 0cm to 20cm

Avoid sampling certain areas:

- Do not sample areas prone to waterlogging
- Do not sample edges of the block
- Do not sample old drainage lines, near wind breaks or trees
- Use a clean bucket
- Take a GPS point

HCPSL has soil augers available for growers to use and are happy to answer any questions regarding taking an effective and accurate soil sample.

For further information contact HCPSL or consult SRA's Australian Sugarcane Nutritional Manual.

Project Catalyst

By Megan Zahmel

Project Catalyst started out in 2008 as a group of growers that wanted to show Australia that they were doing the right thing by the environment and Great Barrier Reef while improving productivity through on-farm innovation.

Since then the group has grown to over two hundred members from the Mackay Whitsundays through to the Mossman regions. Innovative farming practices aimed at generating improved yield and profit, with additional emphasis on soil health, sustainability, and quality improvement of runoff water were top priority for Project Catalyst from the beginning. Every year Project Catalyst holds a Grower Forum so all Project Catalyst growers can get together to share the new things they have been trying and seeing what has or has not worked. This opportunity to get together and network with other growers from all around Queensland opens great discussions about farming practices and sustainability, plus a good laugh of course.

In 2016 Project Catalyst launched in the Herbert region with 16 growers on board wanting to try new farming practices they thought would help in several areas of their business, such as yield improvement, soil health benefits, better economic outcomes, and water quality improvement.

Over the years, Project Catalyst has helped growers to trial practices such as: mixed legumes, lime products, microbial and biofertilizer products, nitrogen inhibitors, variable rates of amendments, sub-surface and lower rate mill by-products, zonally applied Imidacloprid, variable rates of phosphorus and mapping weeds with drones.

After 12 years of sharing experiences and building knowledge, Project Catalyst is now applying this work by helping other growers increase productivity and economic outcomes by adopting improved practices.

This year with the support of the Great Barrier Reef Foundation, Project Catalyst has taken on 14 new growers who are adopting two new improved practices. In addition to receiving support with these new practices participants will have their Nutrient Management Plans reviewed annually for the next three years. They also have the opportunity to attend grower information sessions, the Project Catalyst Forum and all have free access to EM mapping; drone flights and legume planter hire from HCPSL while participating in the program.

The Project Catalyst “Practice Change Program” started in January 2021 and will run through to early 2024. The program will be recruiting 16 more growers over the next two years, so if you would like to be involved, please give HCPSL a call on 4776 1808 to find out if you’re eligible and how to join. Please feel free to also check out the Project Catalyst website at www.projectcatalyst.net.au.

Weed control in Plant Cane

By Richard Hobbs

An ideal time to control weeds in plant cane, is just after final hilling-up to the out of hand stage prior to the wet season commencing. Controlling weeds and using pre-emergents against weed seeds germinating at this stage can be achieved with standard tractors or high-rise tractors. This allows for clean weed-free fields leading into the wet season.

Weather and soil moisture conditions will determine when and what products are used. There are a range of pre-emergence herbicides that can be used. This includes UV stable products that can be applied to dry soil surfaces and incorporated at a later stage by rain fall. These products give you a wider window of application as surface moisture is not as critical. However, if your fields are sloping at greater than 3˚ and there is a risk of storm or heavy rain occurring, some of the applied herbicide may wash down into the lower sections of the field or into the root zone. You should also check that the CEC % *(Cation Exchange Capacity)* of the field is above 3% to help avoid the herbicide leaching into the root zone of the plant cane and causing damage. The CEC % reading can be found in soil samples. Aim to avoid soils that have a high % of sand as these free draining soils also can leach herbicides into the root zone and cause damage.

The most common UV stable products are Amicarbazone *(Amitron®)*, Isoxaflutole *(Balance 750®, Balance Flow®, Palmero®)*, Hexazinone + Imazapic *(Bobcat i-Maxx®)*, Terbuthyazine + Isoxaflutole *(Palmero TX®),* Imazapic *(Flame®)* and Flumioxazin *(Valor®).* You must read the label before applying for critical advice and application rates. These products should all be applied with a Paraquat herbicide to help reduce the impact of the residual herbicide entering on the cane and causing phytotoxicity damage.

If there is a moist soil profile plus moist surface or a very high chance of receiving 15- 20mm rain within 4-5 days of application. Products such as Atrazine, Diuron, Metolachlor *(Clincher®, Clincher® Plus)*, S-Metolachlor *(Dual Gold®, Clincher Gold®)*, Metribuzin *(Mentor®, Metribuzin, Soccer® 750 WG),* and Pendimethalin *(Stomp Xtra®)* can be applied at this time. You need to read the labels before using any chemical to understand the weeds to be controlled, rates, compatibility, buffer zones, and any critical comments about the use of these products.

All the above herbicides do a good job when used correctly and under the right conditions. The conditions at application time are a critical part of a successful weed control. The length of control can vary by the rate of herbicide applied. You can go from just a knockdown rate to short term control *(2-4 weeks*), medium term control *(4-8 weeks*), and long term *(8+ weeks).* The longer the residual control the higher chance of crop damage occurring.

If you are unsure of what to apply contact HCPSL 4776 1808, Richard Hobbs 0400 544 301.

Cover crops for tropical cane systems

By Lawrence Di Bella, Mick Rose, Megan Zahmel, Lukas van Zwieten, Terry Rose

Key Messages

- Many cover crops contributed > 4 t/ha biomass to soils
- The top performing legume cover crops fixed around 100 kg N/ha in shoots + roots
- Cover crops had no significant effect on nematodes or Pachymetra root rot compared to a fallow control in this trial.
- Cover crops had no significant effect on plant cane or ratoon yields compared to a fallow control in this particular trial (this maybe because Q253 is highly nitrogen efficient), in this trial.

Background

While legumes have been investigated as break crops (cover crops) during the fallow phase in tropical sugarcane systems, little is known about how legumes perform compared to other cover crop species or mixed species cover crops. Herbert Cane Productivity Services Ltd established a long-term (five-year) trial as part of a national Cooperative Research Centre for High Performance Soils (Soil CRC) project, led by Southern Cross University. The trial assessed the biomass and N fixation (legumes only) of cover crops, and cover crop effects on nematodes and cane yields over the plant and 1st ratoon cane crops.

Methods

A field trial was established on a property on the outskirts of Ingham, in December 2018 on an alluvial soil, with a controlled-traffic permanent bed system with 1.83 m row spacing. Cane crops has been green harvested since 1985. The trial was laid out in a randomised block design with three replicate plots per treatment. Plots were three beds wide (5.49 m) x 20 m in length. Cover crops were planted on the 21st December 2018 at seeding rates shown in Table 1. All legumes were inoculated with appropriate rhizobia prior to sowing. Herbicides were not used to control weeds in the trial due to the risk of damage to neighbouring cover crops.

Cover crop biomass production was assessed by cutting 1 m length of the centre row (of three) in the middle bed on 12 April 2019. Samples were dried in an oven, weighed, and sent to EAL, Lismore, for nutrient analysis. Nitrogen fixation in legume shoots was determined using the ^{15}N natural abundance method. Cover crops were slashed down on 1st June 2019, and plots were sprayed with sprayseed (2.5 L/ha) and starane (0.8 L/ha) on 23rd June.

Plant cane

Beds were renovated on the 14th July and Q253 was planted on 27th July with 185 kg/ha Nitrophoska (= 24 kg N/ha, 10 kg P/ha, K= 28 kg K/ha, 12 kg S/ha), fungicide (sinker at 0.5 L/ha) and insecticide (Lorsban at 2 L/ha). On 1st September 2019 all plots were side dressed with MOP at 185 kg/ha and weeds were controlled with Balance at 150 g/ha, Atradex at 2.5 kg/ha and Paraquat at 1.3 L/ha.

Nematode samples were taken from plots on 5th February 2020 using SRA protocols and sent to SRA Tully labs for assessment. The trial was harvested on 28th August 2020.

1st ratoon

The ratoon crop was sprayed with 0.8L/ha of 2,4-D and 0.7L/ha of Starane to control weeds during the ratoon crop.

Nematode samples were taken from plots on 15th October 2020 using SRA protocols and sent to SRA Tully labs for assessment. The trial was harvested on 20th August 2021.

Results and Discussion

Soybean, Sunn hemp and pigeon pea, and mixes 3 and 4 all produced > 4 t/ha biomass in shoots, providing substantial input of carbon into soils. Some non-legume plots, particularly radish, appeared N deficient, indicating the value of having a legume component in the cover crop. Soybean cv. Kuranda and Pigeon pea fixed 68 kg N/ha in shoots, roughly equivalent to around 100 kg N once N in roots is accounted for (i.e. around 200 kg/ha of urea fertiliser equivalent). It is also likely that the presence of cover crops reduced leaching of nitrate during the fallow period, where > 2000 mm of rain fell.

There was no statistical difference in numbers of any nematode groups or levels of Pachymetra root rot among treatments in either the plant cane or 1st ratoon cane. As shown in Figure 1, there is a large degree of variation (see standard error bars) between replicate plots of the same treatments for nematode counts. Predicting the outcome of a particular species and cultivar of cover crop on nematode populations is inherently difficult. Work in the USA and elsewhere has shown that individual cultivars of a cover crop can decrease levels of a particular parasitic nematode while increasing levels of others, and reports of effects of particular species vary widely within scientific literature. However, the one positive from the trial was that no cover crops, or cover crop mixes, caused a significant increase in pathogenic nematodes or Pachymetra.

Cane yields were unaffected by cover crop treatments (Table 1). However, it should be noted that both plant cane and 1st ratoon cane crops received full N fertiliser rates for all treatments. Given cover crop treatments were able to fix up to 100 kg N/ha, it is likely that N fertiliser rates could have been reduced in many of the cover crop treatments without compromising cane yields.

Conclusions

Overall, the benefits of cover crops in terms of N contributions, potential lower nitrate leaching in the fallow period, and carbon inputs into soils, are not offset by any potential increases in disease or nematodes or yield reductions in plant or 1st ratoon cane. Any seed costs of the cover crops is likely offset by reduced need for weed control in the fallow, particularly in the mixed species cover crops that appeared quite weed suppressive.

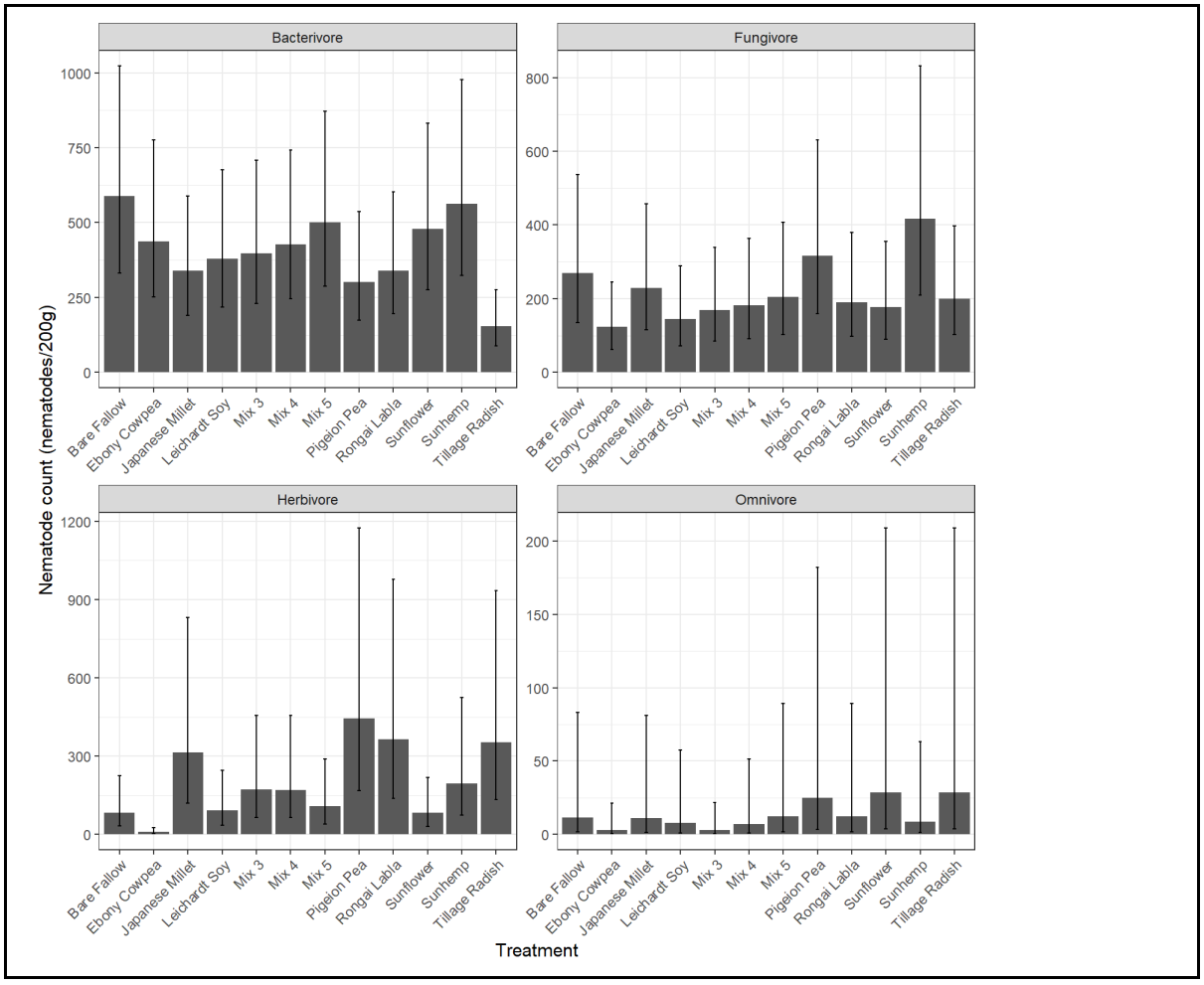
Table 1 – Cover crop treatments, seeding rates and CC and cane yields

Cover crop treatment and seeding rate (kg/ha)	Cover crop biomass in 2019 (t/ha)	Cane yield 2020 (t/ha)	Cane yield 2021 (t/ha)
Fallow control	NA	95 a	108 a
Soybean (*Glycine max*) cv. Leichardt (40 kg/ha)	5.3 d	96 a	106 a
Sunflower (*Helianthus annuus*) cv. White stripe (2 kg/ha)	1.0 ab	100 a	108 a
Sunn hemp (*Crotalaria juncea*) cv. Global sunn (20 kg/ha)	4.3 cd	95 a	108 a
Lablab (*Lablab purpureus)* cv. Rongai (25 kg/ha)	3.1 bc	104 a	108 a
Cowpea (*Vigna unguiculata*) cv. Ebony (30 kg/ha)	4.4 cd	105 a	116 a
Pigeon pea (*Cajanus cajan*) cv. ASSG sunrise (30 kg/ha)	3.3 bc	102 a	108 a
Radish (*Raphanus sativus*) cv. Daikon (9 kg/ha)	0.5 a	97 a	105 a
Jap millet (*Echinochloa esculenta*) cv. Japanese Barnyard (6 kg/ha)	2.9 bc	102 a	111 a
Mix 3: Soybean cv. Leichardt (7.5 kg/ha), Cowpea cv. Ebony (7.5 kg/ha), Cowpea cv. Meringa (7.5 kg/ha), Sunn hemp cv. Global sunn (7.5 kg/ha), Lablab cv. Rongai (7.5 kg/ha)	4.5 cd	97 a	102 a
Mix 4: Soybean cv. Leichardt (4 kg/ha), Cowpea cv. Ebony (4 kg/ha), Sunn hemp cv. Global Sunn (4 kg/ha), Pigeon pea cv. ASSG sunrise (4 kg/ha), Sunflower cv. White stripe (4 kg/ha), Jap millet (5 kg/ha), Radish cv. Daikon (5 kg/ha)	4.6 cd	109 a	116 a
Mix 5: Cowpea cv. Ebony (7.5 kg/ha), Cowpea cv. Meringa (7.5 kg/ha), Lablab cv. Rongai (7.5 kg/ha)	3.5 bc	103 a	110 a

Table 2 – Fixed nitrogen in shoots of legumes cover crops. Mean values are shown ± the standard error of the mean.

Legume	Fixed N in shoots (kg ha^{-1})
Soybean cv. Leichardt	68 ± 11
Pigeon pea cv. ASSG Sunrise	68 ± 8
Soybean cv. Mossman	49 ± 1
Burgundy bean cv. B1	49 ± 14
Soybean cv. Kuranda	49 ± 14
Velvet bean cv. Dominator	45 ± 10
Lablab cv. Rongai	41 ± 21
Sunn hemp cv. Global sunn	29 ± 8

Figure 1 – Effect of cover crops and fallow on nematode groups in plant cane roots at 6 months after planting. Bars show standard error of the mean. The 'herbivore' group contains root knot, root lesion, spiral and dagger nematodes. Note that there were no statistical differences between treatments at $P < 0.05$.



Performance through collaboration

Research looks to improve delivery efficiency for imidacloprid

Herbert Cane Productivity Services Ltd. is part of a Soil CRC research team working on a project led by the University of Newcastle – "Improving pesticide delivery efficiency".

This project focuses on the development of controlled release formulations for imidacloprid, the most commonly used neonicotinoid insecticide in sugarcane farming. Currently imidacloprid is applied by various methods including in furrow application, granular application, irrigation systems, or seed treatment.

While imidacloprid is an effective pesticide, it can also have negative environmental effects, especially if it infiltrates water bodies in areas surrounding the farms where it is applied. The pesticide has been detected in various water bodies including groundwater, creeks, rivers and marine environments originating from agricultural land via drainage and runoff. This discharge to the Great Barrier Reef poses a potential risk to marine ecosystems.

The aim of this project is to develop a porous structure material that can be used for the controlled release of imidacloprid in pest control. The materials are developed based on natural clay minerals that function within the date and depth parameters required for different cane systems when using the conventional liquid forms of imidacloprid.

The project began with a literature review and discussions with HCPSL and Burdekin Productivity Services to understand the requirements for the application of imidacloprid on farms. This identified the challenges facing by farmers including the correct placement of imidacloprid at the correct concentration; the difficulty in achieving a desired release pattern and separate application processes. The project designed a staged releasing formula based on the material and imidacloprid interaction mechanisms. Various clay minerals and their modifications are being used to formulate the materials that will be used for delivery. The materials are being developed and will be evaluated for their releasing behaviour to validate the design.

HCPSL is an important partner in the project, along with other Soil CRC participants the University of Newcastle, Griffith University, Burdekin Productivity Services. It is a great initiative that **farmer groups are working** closely with researchers to develop new technologies to better deliver imidacloprid in sugar cane systems to manage canegrubs, while also benefiting our environment.
If the concept proves to be successful, commercial partners will be sought to take the technology to market and make it available to farmers.

For more information concerning this project contact Lawrence DiBella.

Queensland Government

Using Trees to Control Weeds

A video just released by the Queensland Department of Agriculture and Fisheries (DAF), shares some practical advice on how to effectively get rid of weeds in riparian zones by using passive revegetation.

“By selecting the right herbicide that allows native trees to flourish, weeds can be driven out - something that’s good for growing sugarcane and our creeks and waterways,” said Marcus Bulstrode, DAF agronomist.

The video is freely available on the Queensland Agriculture YouTube channel. For more information please contact DAF on 13 25 23.

Reef protection regulations - Sugarcane article and social media posts

Sugarcane nitrogen and phosphorus budget required under the Reef protection regulations

The Reef protection regulations are continuing to roll out in more regions with new requirements for **sugarcane nutrient management** in the **Wet Tropics, Burdekin and Mackay Whitsunday regions** from **1 December 2021.**

All sugarcane growers in these regions will need to develop a farm nitrogen and phosphorus budget to calculate the amount of fertiliser they can apply in the 2022 season.

The requirements still use soil testing and the regulated method (including parts of the SIX EASY STEPS™) to work out nitrogen and phosphorus rates for each block. However, growers can now refine these rates across their farm as long as they do not exceed the whole-of-farm amount.

The regulations are designed to minimise farm run-off. Refining rates with support from an appropriately skilled person and based on sound agronomy can help to improve nutrient use efficiency.

Compliance officers will work with sugarcane growers to help them understand what is required and provide information and pathways to compliance.

Growers who are accredited under the Smartcane Best Management Practice program are deemed to be compliant with the regulated standards and will be the lowest priority for compliance inspections. They will also not need to update, review or have their nutrient management approach verified.

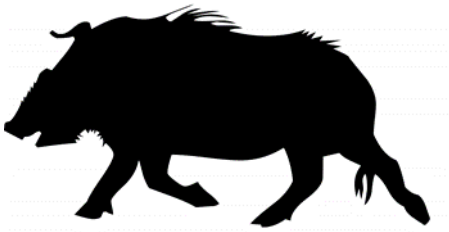
Small updates are proposed to the minimum practice agricultural standard and the prescribed methodology for sugarcane cultivation. These updates are administrative in nature and will make the requirements easier to understand.

Consultation on these small updates will close on Thursday 20 January 2022. Online information sessions are being held in December and January.

For more information, including a video outlining the process to develop a budget, registering for an online information session and ordering an information pack:

Visit www.qld.gov.au/ReefRegulations
Phone 13 QGOV (13 74 68)
Email officeofthegbr@des.qld.gov.au

Facebook and LinkedIn	Twitter
Sugarcane – farm nitrogen and phosphorus budget From 1 December 2021, sugarcane growers in the #WetTropics, #Burdekin and #Mackay #Whitsunday regions will need a farm nitrogen and phosphorus budget to calculate the amount of fertiliser they can apply in the 2022 season. Watch this video to learn more about nitrogen and phosphorus budgets. For more information on the Reef protection regulations – follow this link www.qld.gov.au/ReefRegulations	**Sugarcane – farm nitrogen and phosphorus budget** From 1 Dec 2021, sugarcane growers in the #WetTropics, #Burdekin & #Mackay #Whitsunday regions will need to develop a farm nitrogen and phosphorus budget under the Reef protection regulations. www.qld.gov.au/environment/agriculture/sustainable-farming/reef/reef-regulations/producers/sugarcane
General – Reef Regulation consultation Have your say – the Queensland Government is consulting on small updates to the minimum practice agricultural standards. Some changes are being made to the minimum practice agricultural standard for #sugarcane and the prescribed methodology for sugarcane cultivation under the Reef protection regulations. These updates are administrative in nature and will make the requirements easier to understand. Consultation closes on Thursday 20 January 2022. For more information, and to have a say – follow this link www.qld.gov.au/environment/agriculture/sustainable-farming/reef/reef-regulations/about/consultation	**General – Reef Regulation consultation** Have your say – the QLD Government is consulting on small updates to the minimum practice agricultural standard for #sugarcane and the prescribed methodology under the Reef protection regulations. www.qld.gov.au/environment/agriculture/sustainable-farming/reef/reef-regulations/about/consultation



ACTION ON FERAL PIGS

HCPSL has been very active with other partners of the Hinchinbrook Community Feral Pig Management Program (HCFPMP) in the past 12 months, with over 1000 feral pigs taken out across the Shire.

During the year HCPSL, Hinchinbrook Shire Council and CANEGROWERS Herbert River representatives met with Senator MacDonald and the APVMA to defend the use of 1080 in tropical fruit baits to manage feral pigs.

The program partners are supporting the Lannercost Action Group better manage feral pigs in this hot spot area. The landholders in the Lannercost area have agreed to pay an additional $2/ha to have a coordinated service and additional services within the sub-district; this will operate under the auspice of the HCFPMP. Below is a photo of the HCPSL Board meeting with canefarmers in the Lannercost area to discuss the program.

L-R Greg Erkilla (HCPSL Board member), Ross Lyon (canefarmer), Ian Davies (HCPSL Board member), Nicole Butler (HCPSL Board member), Michael Waring (HCPSL Board member), Peter Larsen (HCPSL Board member), Ray Stallan (Feral pig management volunteer), Samuel Patane (cane farmer). Absent from the photo: Gino Zatta (HCPSL Board member) and Lawrence Di Bella (HCPSL Manager).

The HCFPMP has undertaken 3 aerial shoots along the coastline in remote areas to manage feral pigs this year. Below is a photograph of 2 dead feral pigs shot during the June shoot. These shoots have been very successful with over 150 pigs shot. The program continues to use 1080 baiting and trapping methods as the main control methodologies with good success. The largest challenge is pig chasers disrupting pre-feeding, baiting and trapping activities.

"Project Squealer" will commence in 2022 with project partners: HCPSL, Hinchinbrook Shire Council, National Parks and technology companies, working together to assess novel approaches to manage feral pigs in remote locations. The HCFPMP (with HCPSL as partner) were successfully in securing funding for "Project Squealer". Please find a copy of the government press release concerning the funding on the next page.

If you wish to be involved in the Hinchinbrook Community Feral Pig Management Program (HCFPMP) please contact:

David Bacchiella (Hinchinbrook Shire Council Feral Pig Management Officer)- 0458 764 660
Matt Buckman (Hinchinbrook Shire Council Biosecurity Officer)- 0439 005 471

PRESS RELEASE.

Minister for Agricultural Industry Development and Fisheries and Minister for Rural Communities
The Honourable Mark Furner

More funding to fight feral pests

Local governments and Landcare groups across Queensland will receive grants totalling almost $1 million to support projects that reduce the impact of invasive plants and animals.

Minister for Agricultural Industry Development and Fisheries and Minister for Rural Communities Mark Furner said under Round 6 of the Queensland Feral Pest Initiative (QFPI), $964,888 will be invested in the fight against feral pigs, local government capacity building, invasive ants, weeds such as Cats Claw Creeper, and preventing the further spread of some established species such as cane toads.

Successful applicants include:
- Herbert Cane Productivity Services Limited
- Sunshine Coast Regional Council
- Woorabinda Aboriginal Shire Council
- Brisbane City Council
- Burdekin Shire Council
- South Burnett Regional Council
- Terrain NRM
- Torres Shire Council
- Gympie Regional Council.

“Through this initiative the Palaszczuk Government has now committed more than $25 million over five years to support the construction of cluster fencing and the control of invasive plants and animals,” Mr Furner said.

“This funding is complemented by a $14 million investment from the Federal Government.

“As with previous rounds, these grants help reduce the impact of feral pests and support more jobs in the regions as part of the Queensland Government’s COVID-19 Economic Recovery Plan.”

ENDS

Media contact: Ron Goodman 0427 781 920

HCPSL
Herbert Cane Productivity Services Ltd.

PROJECT CATALYST

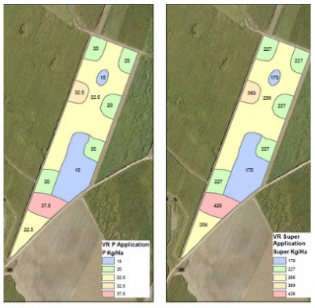
PROJECT CATALYST
GROWER SUPPORT PROGRAM

OPPORTUNITIES

Get support for making change on your farm.

PLANNING

Full scale Nutrient Management Plan.



MAPPING

EM & drone mapping for identifying soil constraints.

SHARING

Grower information sessions & annual forum.

WHO IS ELIGIBLE?

Growers willing to adopt two farming practice changes. Some **examples** of practice changes are: mixed legumes, enhanced efficiency fertilisers, banded mud, or variable amendments. What are you interested in? Let us know!

INTERESTED? | CONTACT

Megan Zahmel **phone:** 0447 317 102 **email:** mzahmel@hcpsl.com.au
Bethany Donker **phone:** 0490 077 176 **email:** bdonker@hcpsl.com.au

Australian Government | Reef Trust | Great Barrier Reef Foundation

Project Catalyst is funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation.

TITLE	NAME	MOBILE#	EMAIL ADDRESS
Manager	Lawrence Di Bella	0448 084 252	ldbella@hcpsl.com.au
Administration Manager	Sue Beccaris	0488 696 246	admin@hcpsl.com.au
Resource Officer	Sandra Coco	0437 716 345	scoco@hcpsl.com.au
Hot Water Treatment Tanks		0437 017 805	
Macknade Office		4777 7643 4777 7349	
Crop Agronomist	Tony McClintock	0447 304 963	tmcclintock@hcpsl.com.au
Crop Agronomist	Graeme Holzberger	0428 761 808	gholzberger@hcpsl.com.au
Extension Agronomist	Adam Royle	0417 610 446	aroyle@hcpsl.com.au
Extension Agronomist	Richard Hobbs	0400 544 301	rhobbs@hcpsl.com.au
Extension Agronomist	Megan Zahmel	0447 317 102	mzahmel@hcpsl.com.au
Extension Agronomist	Jarrod Sartor	0499 034 968	jsartor@hcpsl.com.au
Extension Agronomist	Ellie McVeigh	0491 149 245	emcveigh@hcpsl.com.au
Extension Agronomist	Bethany Donker	0490077176	bdonker@hcpsl.com.au
GIS Officer	Rod Nielson		rnielson@hcpsl.com.au
Field technician	Jason Caruso	0417 622 129	jcaruso@hcpsl.com.au
Admin Support Officer (Projects)	Melissa Royle	0439 697 080	mroyle@hcpsl.com.au

Managing COVID-19 @ HCPSL

With the on-going concerns in relation to Covid-19, the way we all do business will be different.

We are asking that growers please ring to:

1. Make an appointment to meet with staff in the office or to meet on farm, so social distancing can occur.
2. Stay home if you are sick, have been in contact with someone who is infected or suspected of having Covid-19, or if you have travelled to Covid-19 hotspots in the past 14 days.
3. Use hand sanitiser on entry or exit to HCPSL site.
4. Practice social distancing.
5. When attending HCPSL activities, HCPSL will have a Covid-19 plan in place. Please follow instructions from the HCPSL staff during the event (i.e., shed meetings).

Together we can all stop the spread of Covid-19 in our community.