



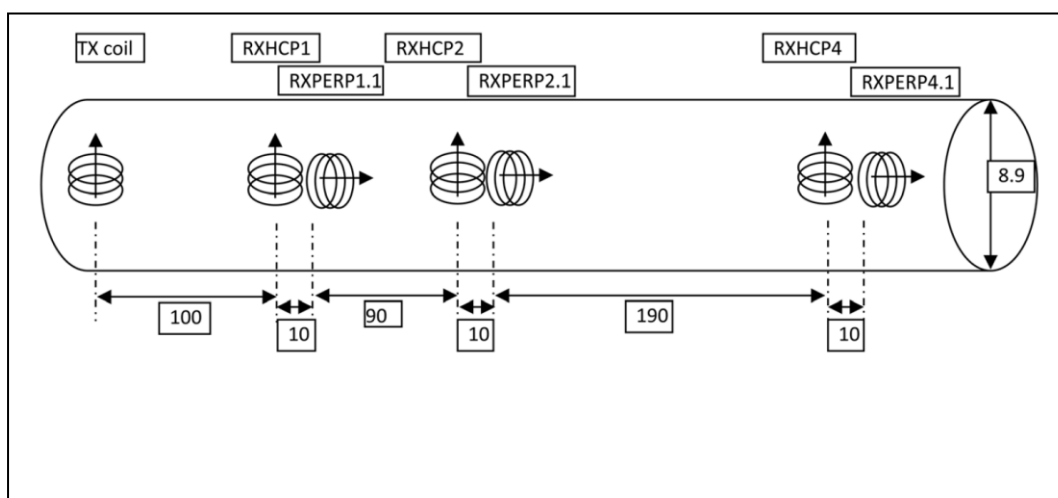
HCPSL Manager's report- July, 2017.

Dualem project update

Significant progress has been made in this project during the past month. This project has allowed the local industry to map soils and now implement precision agriculture practices.

On the week commencing the 5th of June, Rod Nielson and Mike Sefton undertook training with staff from UNSW. The training upskilled HCPSL staff to manage and interpret the data from the unit. The training was undertaken in Sydney where Rod and Mike had full access to all the relevant university staff for training.

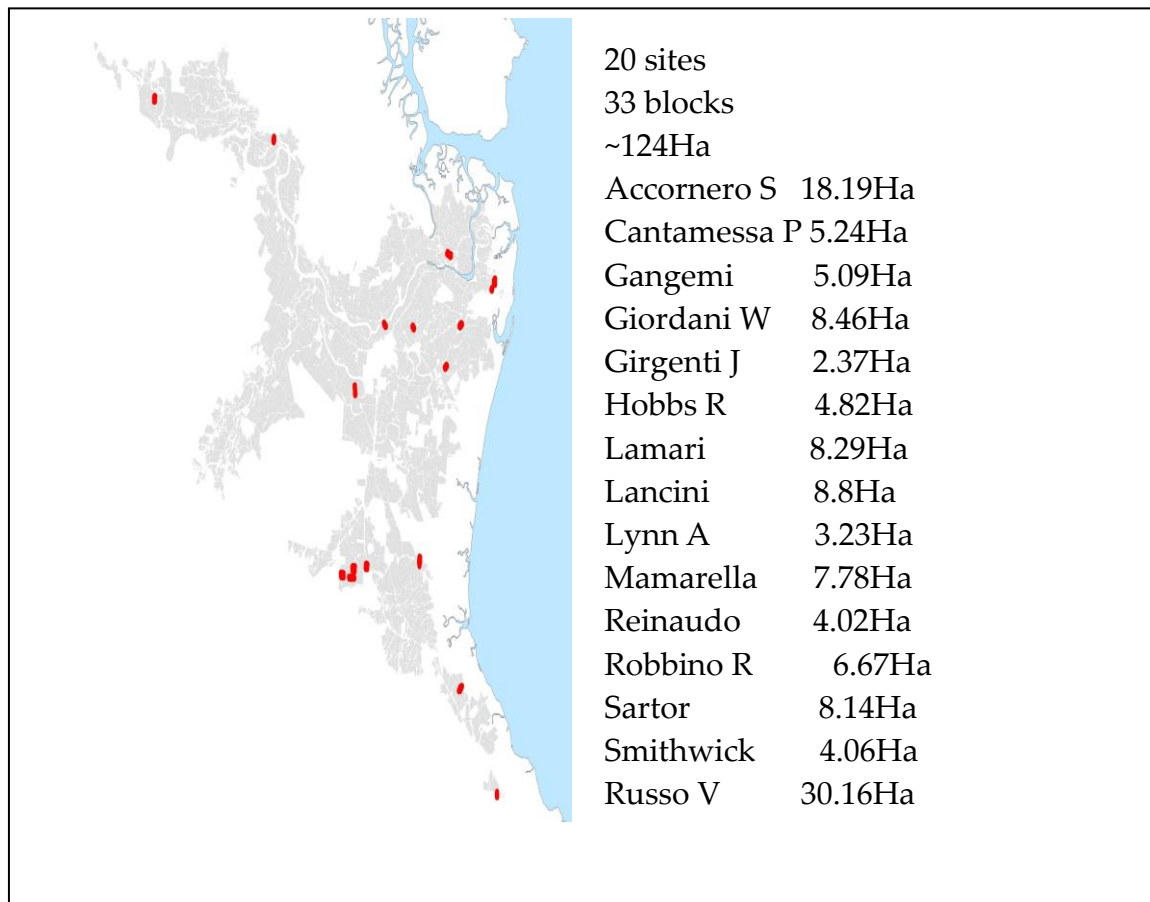
Dualem- internal configuration map.



A photograph of the Dualem in operation.



The following blocks have been mapped by the HCPSL soil mapping team to date:

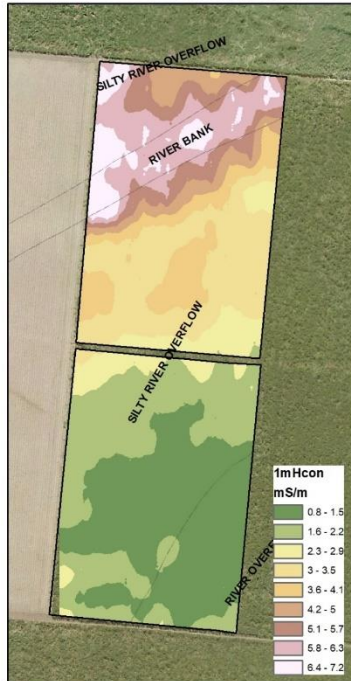


Examples of data collected on specific blocks:

CANTAMESSA **BLOCK 0421A-04-04**

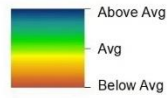
Electromagnetic Conductivity
1mHcon

Scale All Maps - 1:2,000

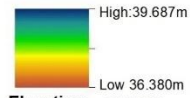
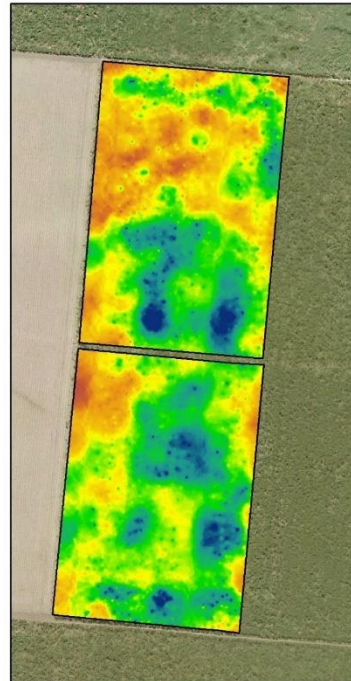


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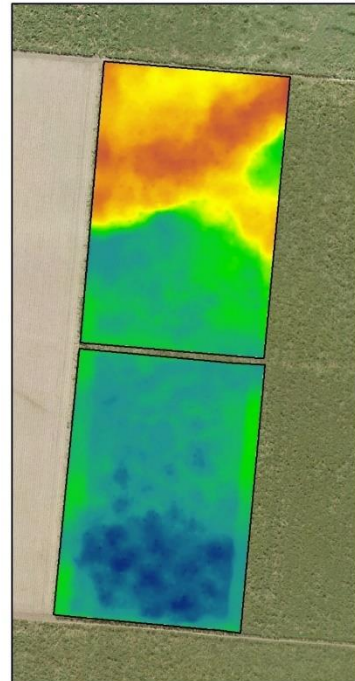
0 50 100
Metres



Yield 2015 - 3rd Ratoon



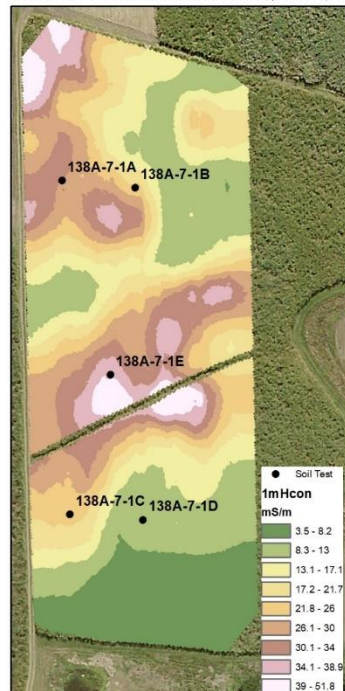
Elevation



Lynn **BLOCK 0138A-07-01**

Electromagnetic Conductivity

1mHcon EC measurements in millisiemens per metre (mS/m)



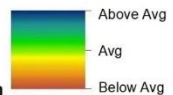
Scale All Maps - 1:2,000

0 50 100
Metres

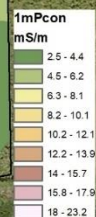
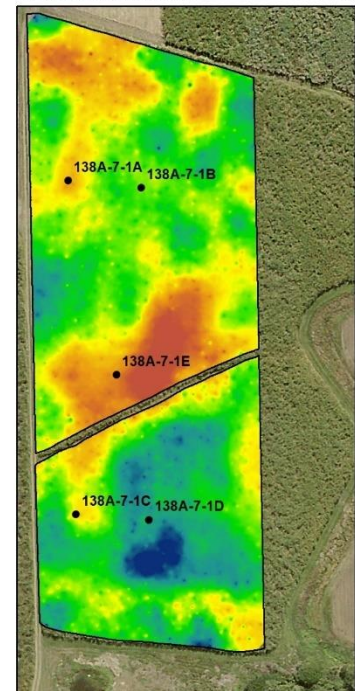


Soil Samples

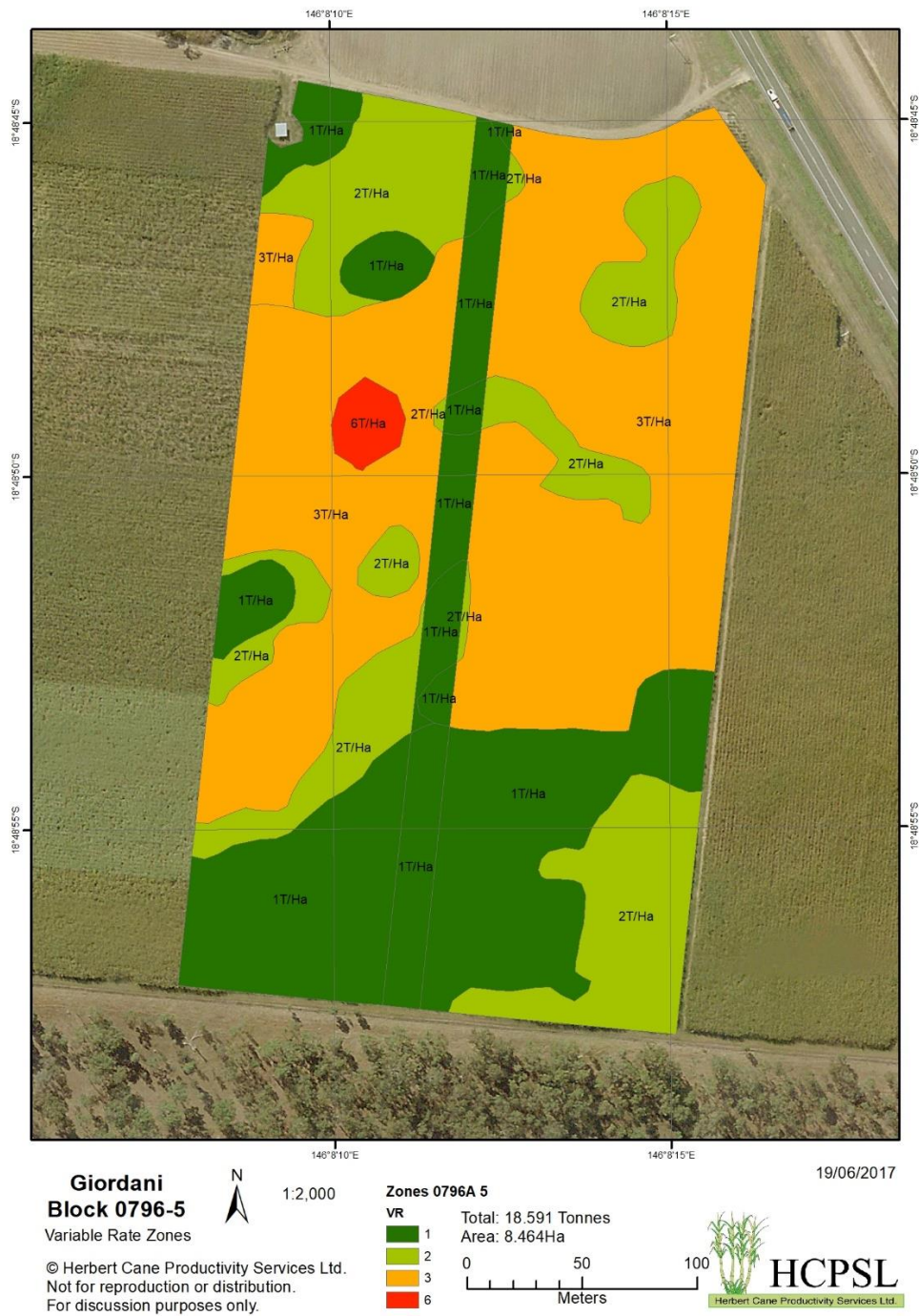
1. 415732.101E, 7939394.174N
2. 415762.134E, 7939414.254N
3. 415627.799E, 7939521.269N
4. 415658.28E, 7939540.727N
5. 415705.375E, 7939460.635N

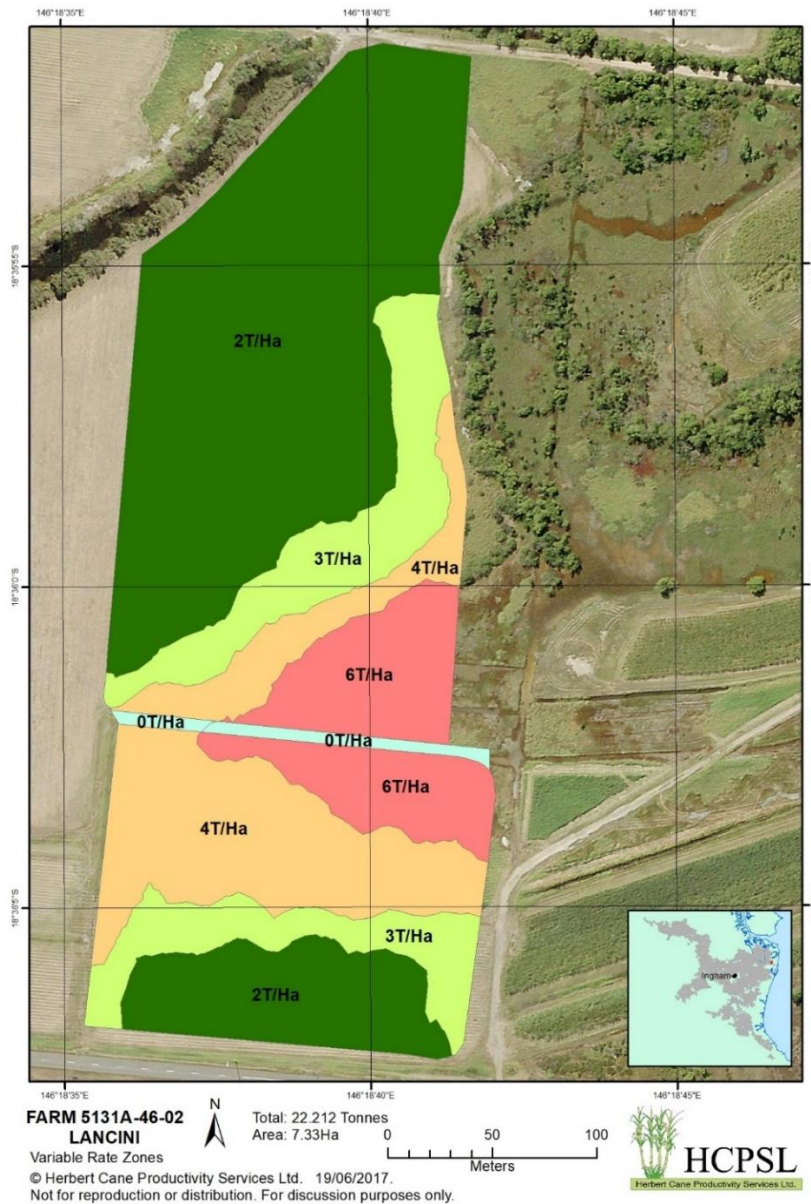


Yield 2015 5th Ratoon



Examples of variable rate soil amendment application maps:





Variable rate application at the Lancini farm.

Laser levelling surveys

Tony McClintock has been undertaken numerous laser levelling surveys during the past month.

Aerial rat baiting

Aerial rat baiting continues throughout the district, with applications being made in May, June and July. It appears that the baiting is having some effect on rat population numbers.

Rats continue to be an issue with many cane blocks throughout the district, especially in the varieties of Q208, Q250 and Q183. Growers are urged to considering aerial baiting of these blocks before significant damage occurs.

UAV project

- R. Nielson undertook and completed a 1 week training session to become accredited to operate the UAV.
- The HCPSL UAV has arrived and is now being commissioned.
- A UAV has been used to date to on the HCPSL herbicide trial, Project Catalyst project sites, and to assist with soil mapping of cane blocks.

Harvest Best Operation project

The HBO forum was well attended with 51 attending the event, in May.

Presenters at the forum:

- “What did we learn from the 2016 harvest trials – pick-up losses, chopper losses, extractor losses”- Phil Patane (SRA)
- “New harvest trials to improve harvest practices planned for 2017 – 2019”-Joseph Bonassi (SRA)
- “Reducing harvest losses in your region 2017/2018”-Bernard Milford (Project Coordinator)
- “In-field sucrose loss assessments for Herbert: 2016 season”- Peter Larsen (Wilmar)

A workshop was conducted at the forum to investigate the option of conducting Harvest Optimisation Week (HOW). There was discussion concerning the parameters to be assessed and if the industry was supportive of the concept. The forum participants agreed that HBO week offered significant opportunities and approved that the week be undertaken mid-August 2017. It is proposed that the 14 harvesters supplying Macknade Mill will be operated at different harvesting settings compared to those harvesters supplying Victoria Mill. The purpose of HOW is to investigate what opportunities exist to increase the financial returns from the harvested crop.

HCPSSL, SRA and Wilmar teams are working together to prepare for HOW. Harvesting groups are now being asked to sign on for HOW.

HOW now has the support of the following industry stakeholders: CANEGROWERS Herbert River, ACFA, Wilmar, HCPSSL, SRA.

WTSIP project

Numerous WTSIP meetings have been conducted during June:

- 5th of May- Management team.

Leanne Carr will commence employment with HCPSSL, as a WTSIP Extension Officer. Leanne will join Jarrod Sartor who is already employed by HCPSSL as a WTSIP Extension Officer.

Both Leanne and Jarrod are employed to develop nutrient and pest management plans for growers and provide assistance for the Reef Trust tender processes. Over a 3-year period it is proposed that both Leanne and Jarrod will outreach to approximately 400 growers.

Project NEMO

Adam Royle continued to work with growers through Project NEMO. Activities undertaken are:

- Collate and present trial data from the 2016 harvest.
- Report back to EHP on the project.
- Undertake NMP with growers who are involved with project activities.
- Collate and present trial data from the 2 glasshouse trials undertaken to date to access EEf products.
- Present the research findings for HCPSSL and partner groups concerning ways to improve NUE and water quality.

Project Catalyst

Megan Zahmel continued to support grower projects. Significant activity has occurred with the following projects:

- Di Bella- rotational legumes
- Cordner- chicken rotation with cane
- Reinaudo- fallow cropping
- Marino- bio fert
- Fighera-bio fert
- Reid- Serenade
- Zatta- Bioactivate and Seasol
- Lynn- Soil amendments trial
- S. Accornero- Lignite coated urea

Activities undertaken are monitoring and trial establishment.

SRA funded- “Soil health project” project, led by Davey Olsen (SRA).

The project team (consisting of SRA, HCPSL, BPS and Wilmar) from the Herbert and Burdekin met in Townsville on the 30th of May, to commence the project. The Herbert project team met again on the 13th of July to develop trial protocols, extension strategies and to establish demonstration sites.

In the Herbert the following demonstration sites will be established as a part of the project:

- Lower Herbert- Paul Marbelli’s farm.
- Abergowrie- Lawrence, Candy and Brendan Tento’s farm.
- Hamleigh/Trebonne/ Lower Stone- Vince Russo’s farm.
-

It is also proposed to have 6 paired benchmark farms comparing soil health parameters.

Soil health indicators will be developed or assessed within the project scope. It is hoped that a “Soil Health Tool Kit” will be developed during the duration of the project for use of the industry.

Reef Trust 4 EEF project, led by Barry Salter and Julian Cornelian (both SRA), has commenced in the Herbert. HCPSL has assisted Julian locate 10 trials throughout the Herbert district.

The treatments in the trial are:

1. 6ES nitrogen rate
2. 6ES -20% nitrogen rate
3. 6ES -20% nitrogen rate using 1/3 Entec and 2/3 AgroMaster
4. A wild card treatment, which could be a growers current practice, Entec, eNtrench or AgroMaster.
5. Zero N treatment (only a small area of the total trial area) to assess background N levels.

The trials will commence in 1st ratoon crops and followed through till the end of the cropping cycle.

Andrew Memory (SRA Herbert) will be the Herbert technician for the project.

HCPSL will host a 0.5 FTE EEF Extension Officer, as a part of the project. This appointment will work very closely with the SRA research team, in the Herbert and Tully areas.

YCS update

YCS levels are low at present compared to previous years. The usual areas are again impacted this year- long the Herbert River, Ripple Creek, Macknade, Palm Creek and 4-Mile areas.

Megan Zahmel has sampled the HCPSL YCS management trial at Macknade. This trial has assessed Liddle Liquid Pedrick fertiliser product (NPK+ trace elements) against conventional granular fertiliser (based on 6ES). The trial results indicated no significant differences in YCS impact, cane yield or CCS.

Lawrence Di Bella and Davey Olsen (SRA) met on the 12th of July to discuss treatments for the 2017-18 YCS trials. Two research trials will be established in the Herbert:

- One site at Macknade- assessing various crop management practices.
- YCS RVT planted at Reinaudo's John Row Bridge.

Introgression project

- The current SRA funded project will conclude 30 June, 2017.
- SRA has announced that introgression research will be now a part of the core SRA plant breeding program. SRA will base its introgression effort in the Herbert under the guidance of Dr. Hu. SRA will utilise the HCPSL glasshouse at Macknade annually between February and May annually. Seedlings will be grown in the B beds at Macknade annually, with selections from these trials going into the Herbert CAT's and genetic material being planted at Macknade and Meringa for crossing activities.

Approximately 600 promising seedlings have been selected and propagated at Macknade in 2017 from the 2015 seedling trial.

RVT and Variety Adoption project

The data from the HCPSL funded RVT program was used at the annual variety selection meeting. The following datasets have been established: variety germination and establishment data, early CCS data and ratooning data.

Discussions have occurred between the HCPSL Manager- Lawrence Di Bella and SRA Introgression plant breeder Dr. Hu concerning introgression material to be assessed in RVT's post 2017. The assessment of promising introgression material in the RVT program will enable significant genetic gains to be made in ratooning be made earlier, especially on challenging soil types and environments in the Herbert.

Sam Sellick has developed variety adoption plans for approximately 30% of the area to be planted in 2017. HCPSL has up loaded the Seedcane calculator (developed by BPS) onto the HCPSL website for growers to use.

The early plant/ early harvest YCS RVT block was established at the Reinaudo site. The late plant/ harvest YCS RVT block will be established in September, 2017.

The second RVT site will be established at Paul Cantamessa's farm at Abergrowrie, late July-early August. This site has a *Pachymetra* count of 700,000 spores/kg of soil. The purpose of this trial is to assess the impact of *Pachymetra* on varieties.

CRC for High Performing Soils- BPS and HCPSL have been invited to be a part of the CRC. BPS and HCPSL are the only cane related group as a signatory to the CRC at present. The CRC will focus on sustainable farming systems and getting soils to perform highly. BPS and HCPSL have been invited to sit on the technical committees for extension and sustainable farming systems, respectively. The CRC will be based at the University of Newcastle with focus on grain, cotton and cane.

Richard Hobbs (HCPSL) and Rob Milla (BPS) attended the inaugural CRC meeting in Melbourne, on the 4-6th of July, 2017. There appears to be significant opportunities for both HCPSL and BPS to attract University groups and commercial companies to partner in the delivery of research, development and extension activities in the cane industry.

WPHS

- All electrical equipment was checked and tagged at all HCPSL sites.
- The HCPSL WPHS policies and procedures will be reviewed at the July Board meeting.
- A JSA and safety procedure was developed for the new leaf grinder.
- The hand control for the crane at the hot water treatment tanks was repaired by Wilmar Victoria staff.
- A tool box meeting was held to discuss safety matters on the 30th of June.

GFRAS APEN conference

At this stage, it is anticipated that up to 400 people will attend the week-long event, with already 150 people confirmed to attend the GFRAS event in the Hinchinbrook area. Delegates will come from all over the world for the week-long event from agencies like GIZ (Germany), US Aid, Agridea (Switzerland), EU, World Bank, WWF, Buonsucro, Horticulture Australia, Cotton CRC, GRDC, SRA, Wilmar, SASRI, Mauritius SRI and the Vanuatu government, etc. The event has attracted significant sponsorship to date both domestically and internationally.

HCPSL and BPS will have significant opportunities to showcase its extension programs (especially in the Reef space) and for staff to undertake extension based training during the event. The cane industry will also have significant opportunities to showcase itself to the wider world.

1st National Symposium Beneficial Use of Recycled Organics in Degraded and Marginal Landscapes.

In Australia, large volumes (> 20 M tonnes) of organic wastes are produced each year, including garden organics, forestry residues, municipal solid wastes, agricultural residues, biosolids, green waste and timber.

Much of this organic waste can be viewed as a resource that can be recycled to treat degraded landscapes. Some recycled organics are also applied to agricultural lands, increasing soil nutrients and organic matter, improving soil structure and sequestering carbon. However, due to their diverse chemical, physical and biological nature, the improper application of recycled organics may also lead to poor plant performance, environmental pollution and cause health concerns.

To better understand the beneficial use of recycled organics in our environment, the symposium examined learnings from its application to agriculture, mining, urban environments and infrastructure. The symposium consisted four themes led by keynote speakers who are experts in their field. Presentations included a range of disciplines, and represented a wide range of research environments. The symposium was a great opportunity for, academics, students, government and industrial researchers and farmers to interact with colleagues and friends.

Since the conference various groups have followed by with HCPSL to investigate opportunities to undertake work in the cane industry or supply organic amendments (like composted food waste scraps (from the Townsville region) to the Herbert cane industry).

Conference Key Themes and key note speakers:

Theme I: History and current status of recycled organics; by Mr Johannes Biala & Mr Martin Tower



Theme II: Application for Environmental Rehabilitation (Urban, Infrastructure, Mining); by Mr Philip Mulvey



Theme III: Application for Agricultural Production; by Dr Bradley Clarke



Theme IV: Off-site Impacts - Water Quality; by Mr Lawrence Di Bella. Lawrence's presentation was titled- "Targeted Extension Strategies to Improve Water Quality Outcomes in the Australian Sugarcane Industry." The presentation focused on what the Herbert cane industry is doing to manage water quality entering the Great Barrier Reef. The presentation touched on activities that industry is undertaking to improve the use of mill by-products (mill mud and ash). Lawrence's presentation was nominated as best presentation for the conference.



Theme V: Research gaps and opportunities with recycled organics and addressing the challenges; by Dr Julie Cattle & Mr Christopher Rochfort

