

EEF60 COMMUNIQUE

Edition 1 June 2018

Project update

The EEF60 project is well underway on Queensland's sugarcane farms, with just over 300 hectares of crops successfully fertilised and now awaiting first harvest. Treatment application began in August 2017 and was completed before the end of the year. Overall, the team established 29 sites in the Wet Tropics region, 15 in the Burdekin, 10 in the Central Region and one in the Southern growing region.

Due to the selection criteria for sites prone to waterlogging, the final number of sites able to participate was reduced from 60 to 55. Conditions made it impossible to apply fertiliser to several trial sites in the south and one in the Wet Tropics. Another site in the southern region had Ratoon Stunting Disease resulting in the block being ploughed out.

Despite the minor set-backs, the research and extension team submitted a detailed reporting package which was accepted for payment of the Stage 2 Milestone without modification.

Current activities

Collection and analysis of water samples is well underway. Biomass sampling is complete for the Burdekin and Southern regions, with only a few sites to be sampled in the Wet Tropics. At this stage the first site to be harvested will be in Tully in mid-June. A harvest schedule is currently being developed with contact being made with mill representatives to ensure rake data is captured for each trial site. In addition, all teams are on the lookout for additional sites in order to meet the 180-year trial data target, required over the life of the project.

In mid-May EEF60 agronomists travelled to Brisbane to meet the technical steering group to review the project and discuss preliminary findings. Researchers from the National Environmental Science Program presented on topics such as water quality sampling techniques, the impact of banding on efficacy of EEFs, and nitrogen utilisation in the crop cycle. The team discussed strategies to improve sampling, data analysis and trial design to ensure robust results are delivered by the project.

Extension update: Burdekin

Despite unfavourable weather events delaying biomass sampling in the Burdekin district, the EEF60 trial project is progressing well, according to Burdekin Productivity Services.

All 15 trial sites are now established, with soil tests completed and fertiliser applied. From the soil tests taken through the EEF project and previous soil tests provided by growers, nutrient management plans were developed for the entire farm if one was not already in place. These were based on five years' worth of recommendations and in line with Six Easy Steps guidelines. Some participating growers have indicated interest in using EEFs on other blocks, however cost appears to be the main inhibitor at this stage.

Grower engagement has been maintained through monthly visits to ascertain irrigation, herbicide, pesticide and cultivation activities on the trial block.

Several growers appear unaware of the amount of water being applied to their blocks, highlighting the issue of water-use efficiency. Growers have been offered pump flow tests to help calculate their irrigation usage. Irrigation scheduling workshops, such as Irrigweb, are also being held for growers to improve their water use efficiency. EEF60 growers have been encouraged to attend with a handful taking up the offer.

Other extension activities such as Smartcane BMP; soil and water tests; calibrations of fertiliser boxes and spray rigs; chemical certification courses; and other relevant workshops have also been offered to participating growers as a means of support and to encourage best practice.

Project overview

EEF60 is designed to identify whether Enhanced Efficiency Fertilisers (EEFs) can provide a significant increase in nitrogen use efficiency (NUE) and reduction in nitrogen losses, resulting in a more profitable farming business.

The project will include controlled and replicated field trials, conducted over three seasons, including 30 in the Wet Tropics, 15 in the Burdekin, 10 in the Central and five in the Southern regions. The objective is to capture 180 years' worth of trial data.

These trials will provide information on the effect of EEFs in terms of TCH, CCS, and NUE effect on grower profitability.

Environmental losses (run-off and deep drainage) will be assessed at six of the 60 sites.

More than half the growers involved in the EEF60 project have indicated they are keen to become BMP accredited, with five already having achieved accreditation.

Biomass sampling is underway with a few more farms to be completed. Some blocks were affected by severe winds from a storm earlier in the year causing cane to lodge and sprawl, making it difficult to sample. Finding time to meet with growers who are busy juggling multiple businesses has also proved challenging.

Overall the Burdekin's EEF60 growers have embraced the project and are looking forward to the final outcomes.

Extension profile

Jasmine Connolly has worked as the Burdekin Productivity Services' Extension Officer since July last year.

She completed a Bachelor of Science at James Cook University in 2017. Jasmine is involved in two projects - the EEF60 trial and Smartcane BMP.

Through these projects, she hopes to improve farming systems and encourage growers to use best practice to help their business and the environment.



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Research update

In most parts of the industry this year, farmers have worn a well-trodden path to their rain gauge. Floods, heavy rainfall, and near-hit cyclones have peppered the industry across the summer, continuing even as harvest approaches.

Where there is heavy rain there is also discussion about the best timing and efficient uptake of nutrient inputs by the cane plant. Against that backdrop, the EEF60 project is assessing various types of enhanced efficiency fertilisers (EEFs) and their role for productivity, profitability, and sustainability outcomes for the Australian sugarcane industry.

EEFs are not new products, but in the sugar industry there remain a number of important questions for growers and advisors, especially around these products' efficacy and how this stacks up against the extra cost that comes with most of these products when compared to standard urea.

It has been a busy start to the year for the research teams on the ground, led by SRA's Julian Connellan at Gordonvale, Nick Hill at Mackay and John Panitz at Bundaberg. In recent months, the teams have been in the field undertaking biomass sampling of crops, targeting the nine-month crop stage in order to gather information about nitrogen uptake by the crop.

"This process involves counting and cutting stalks across a defined distance, weighing the samples and then processing a subsample in preparation for chemical analysis so as to determine what amount of nitrogen was taken up and how it is partitioned by the plant into millable stalk or leaf and cabbage," Nick explains.

"This is important for determining whether EEF products improve nitrogen use efficiency. My team works across the Central and Burdekin regions, where the wet weather was been largely welcome, but also meant some juggling to get the job done, as the case with everyone in the industry."

In the far north, Julian Connellan and his team have faced even wetter conditions, which they are hopeful will put the products to the test and produce useful results for the industry after the harvest data has been collected.

The teams are now preparing for the busy harvest period.



SRA researcher Julian Connellan and technician Andrew Cominardi weighing biomass samples in the Far North.

Research profile

While SRA research and adoption officer Nick Hill might call Mackay home, he is more used to living out of a suitcase for now as he and his team coordinate the EEF60 project in the Burdekin and Central regions.

Supported by SRA technician officers David Martyr, Prakash Adhikari and Eric Kok, Nick and his team are responsible for 25 trial sites from Home Hill to Mackay.

Nick says the project has proved to be challenging with tough weather events delaying some stages, and an enormous amount of coordination, planning and liaison required to keep everything on track.

"The hours are long and the work is physically demanding, but everyone is doing their bit to pull together and get the job done," he said. "I came from the grain industry to cane, and I am constantly amazed at how resourceful these farmers are – it's amazing what they can do with a welder in a shed!"

Nick says he is looking forward to discovering what benefits can be found for farmers and the reef from the EEF60 project.



Grower profile

Home Hill grower Joe Linton is hosting one of the Burdekin trial sites and said he is looking forward to learning more about EEF technology and how it could deliver efficiencies for his business.

Joe already uses the SIX EASY STEPS nutrient management guidelines and is keen on finding the most efficient way possible to grow his crop.

"EEF products have been identified as one way to do that," Joe said.

"I have also looked at a number of alternative fertiliser options, but at this stage this technology sits well within the current thinking of cane growing."



Contact details

SUGAR RESEARCH AUSTRALIA

Dr Barry Salter - Key Focus Area Leader
P: 07 4963 6802 E: Bsalter@sugarresearch.com.au

CANEGROWERS

Burn Ashburner - Project Manager
P: 07 3864 6474 E: burn_ashburner@canegrowers.com.au

Got something to share?

If you have something to share or would like to know more about an aspect of the EEF60 project, email info@canegrowers.com.au with your question or suggestion.