

Target pollutant – Dissolved Inorganic Nitrogen (DIN)

Developing and delivering optimal nutrient management plans can be complex and challenging for both farmers and agricultural service providers.

In 2019 LiqueaForce developed LAND HUB in consultation with agronomists and growers across Queensland's sugarcane and horticultural industries to close the knowledge gap required for sustainable farm management.



The Local Area Nutrient Datahub (LAND), as part of the Mackay Whitsunday Water Quality Program is designed to improve the information capacity of growers, enhancing decision-making processes around nutrient application and other farming practices, leading to productivity increases, and water quality improvements off-farm.

It also provides secure, private, digital storage of all their farm, soil, and production data year on year. This simplifies long-term monitoring of crop and financial performance over time, providing a far greater understanding of underlying agronomic issues and solutions suitable for their farms.

Independent Consultant and project manager Sara Bennett talks about LAND features.

"The quality and accessibility of the integrated data in LAND delivers farmers the 'information capacity' for widespread practice change, which will result in substantial water quality outcomes for the Great Barrier Reef."

Colin and Lenore Bourke – Karloo and Carmilla West

In the Mackay Whitsunday region, Colin and Lenore Bourke own two sugarcane farms: one in Karloo just east of the Bruce Highway and the other in undulating country at Carmilla West.

Karloo soils are typically sand or loam overlaying a sodic clay subsoil and cropping is all rain fed.

At Carmilla West, soils are a mix of loam and a sand or loam overlaying sodic clay. This country can be subject to surface runoff with seasonal rainfall making crop nutrient loss a concern.

To improve their farming practice with nutrient management, Colin and Lenore shifted from surface application of liquid Dunder (Mill by-product) blends to sub-surface stool-split application.

"Fertiliser that leaves my paddock is money lost, it does not grow my crop, and it is not good for the environment or for water quality."

- Colin Bourke

The LAND HUB Projects are funded by the partnership between the Australian Government's Reef Trust and the Great Barrier Reef Foundation.



Colin Bourke

In Carmila West the paddocks have short rows and tight corners, which make it difficult for contract fertiliser applicators to operate economically. As a result, Colin decided to do his own fertiliser application with his own equipment. The shift from surface to sub-surface stool-split application required an innovative design.

Together with input from a local machinery manufacturer and experienced agronomist Don McNichol, Colin has developed a tractor-mounted 3-row stool-split liquid fertiliser applicator, suited to small paddocks.

The unit uses two 1000l liquid fertiliser pods mounted side-by-side on the tool bar for machine stability and to ensure even weight distribution for correct coulter depth control in the crop row. The unit is powered by a PTO driven liquid fertiliser-ready Viton diaphragm

pump and fitted with rate-control valves for calibration of flow rate matched to tractor speed.

Colin says that as well as being able to do his own fertiliser application, the liquid product allows him flexibility compared with granular fertiliser. During wet weather interruptions, the fertiliser can be stored in the on-farm storage tank until application can resume.

Their next step is to fit GPS rate control and machine guidance for the applicator. Electro Magnetic (EM) soil surveys and drone imagery mapping informs farmers of differences in soil type and in crop biomass. These accurate insights combine with GPS rate control machinery are used to deliver zonal management of farm and crop inputs.

If you would like to see what programs and assistance could be available to you, please contact Reef Catchments or visit their website www.reefcatchments.com.au

