CASE STUDY

BACKGROUND

Many sugarcane farmers implementing a controlled traffic farming system prepare or renovate cane beds at the start of a new fallow period. This preparation will typically involve several tillage passes. Following this, soybeans are regularly planted as a break crop – typically with two rows of soybeans planted 50cm apart on top of the bed. This activity occurs before the commencement of the wet season and depending on the timing and intensity of the start of the wet season, soil type, slope etc, there is potential for fine fraction sediment and nutrient to be lost from the field. This is a potential handbrake on the gains to soil health being sought from the overall controlled traffic farming system.

The trial was established and planted in a 3ha block near Koumala on 3rd February, 2018. Preformed beds were made using two passes of a commercially available bed renovator. Following bed formation, a seed mixture of Japanese millet and lablab was spread over the cover crop section of the trial along with a small amount of starter fertiliser. The trial was given several short irrigations over a five day period to assist the germination of the seeds as conditions were extremely dry at the time. There were two treatments, with and without cover crop.

KP Samplers were placed at the end of the field, with one sampler in each treatment. The samplers were set to sample every 15 minutes during a runoff event. Samples are filtered to remove sediment which is then dried, weighed and compared between treatments.

FOCUS ON

- Reducing sediment and nutrient losses from a field with preformed cane beds
- Evaluating commercial aspects of integrating cover crops into sugarcane farming systems

KEY POINTS

- Japanese millet is a suitable, easy to establish cover crop for summer plantings
- Cover crop seed cost $35/ha
- Starter fertiliser cost $35/ha
- Cover crop suppressed growth of other weeds
- Planted with spreader , low cost, special equipment not required
- Cover crop terminated with Glyphosate

The site successfully grew the cover crop of Japanese millet and lablab over the summer.

Measurements of sediment in runoff water showed the cover crop had a significant beneficial impact on sediment losses. This site will now be planted to sugarcane.

The success of this trial has led the grower to plant further Japanese millet cover crops on recently preformed beds prior to planting sugarcane.

Landholder Rob Sluggett said: “Reef Catchments support through the project was essential to fund the KP samplers and Farmacist staff to monitor the runoff events.

“The trial has shown that cover crops can reduce sediment losses by over half, helping to improve soil health and reduce impact on the environment.

“We have recently planted more cover crops on preformed beds and intend to expand the practice to all of our fallow this coming season.”

OUTCOMES TO DATE

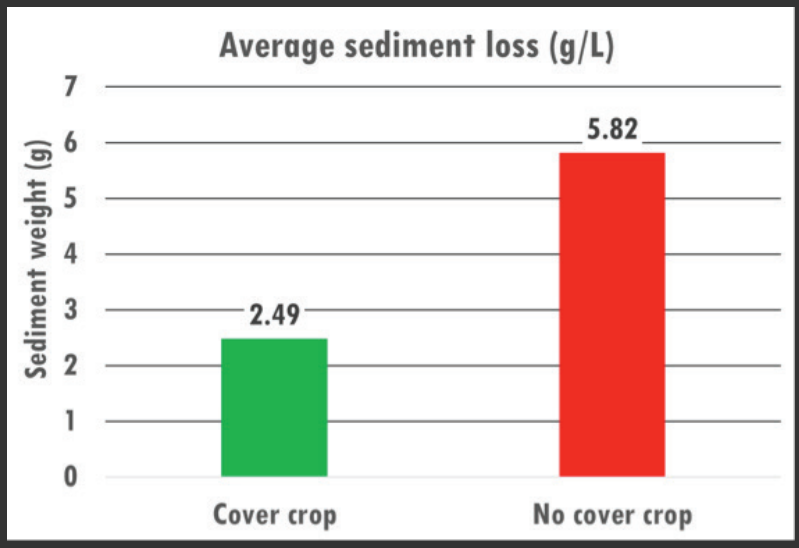

Figure 1: Mean sediment losses measured – almost 60% reduction with cover crop


No obvious sediment movement in cover


Cover protects preformed beds


Sediment movement with no cover crop


Preformed beds with KP sampler

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