Project Catalyst Final Report

Bare fallow versus Soy fallow

Grower Information	
Grower Name:	Richard & Robert Gherardi
Entity Name:	R & R Gheradi
Trial Farm No/Name:	5193A B# 5-1
Mill Area:	Victoria
Total Farm Area ha:	98.6 ha
No. Years Farming:	24
Trial Subdistrict:	Cordelia/Lillyponds
Area under Cane ha:	94.589ha

Background Information

Aim:
This project aims to look at the effects of a long fallow (12months) bare, a long fallow (12months) with Soybeans. Comparing this with a standard fallow of 6mths bare and a 6mths fallow with Soybeans.

Background: (Rationale for why this might work)

Longer fallows (12 months) have been used in the past and it is being investigated whether a long fallow will result in higher yields, greater ratoon ability and improved economics (e.g. reduced fertiliser inputs).
Comparing 12 and 6 month fallows looks into whether a longer fallow will improve production, ratooning ability and reduce nutrient inputs. This will improve profitability for the grower and reduce their impact on the Great Barrier Reef.

Potential Water Quality Benefit:
Maintaining a cover crop on fallow ground helps reduce top soil being lost to run off and the presence of legumes will reduce nitrogen inputs, which could be lost to run off also.

Expected Outcome of Trial:
Long fallows: improved productivity and cane ratoon ability and reduced fertiliser inputs

Service provider contact: Megan Zahmel 0447 317 102

Where did this idea come from:
The grower put forward the idea of extended fallows and planting a cover crop. This idea was further developed by Farmacist and NQDT Terrain NRM.

Plan - Project Activities	Date : (mth/year to be undertaken)	Activities :(breakdown of each activity for each stage)
Stage 1	**Establish trial 2015**	• Half of the old ratoon harvested July 2014, ready for the 12 mth fallow crop to be established • Same block but rest of old sugarcane crop harvested off ready for the 6mth fallow cover crop – Nov 2014 • Jan 2015 Leichartd soybeans were planted into trial • Sugarcane Q242 planted into trial May 2015
Stage 2	**Results for 2016**	• Final harvest and CCS results through the mill – 25/10/2016
Stage 3	**Results for 2017**	• Final harvest and CCS results through the mill – 23/08/2017
Stage 4		
Stage 5		
Stage 6		

Project Trial site details

Trial Crop:	Leichartd Soybean in fallow and Sugarcane
Variety: **Rat/Plt:**	Q242 Plant 2015
Trial Block No/Name:	B# 5-1
Trial Block Size Ha:	1.2 ha
Trial Block Position (GPS):	Refer to google earth map
Soil Type:	Clay

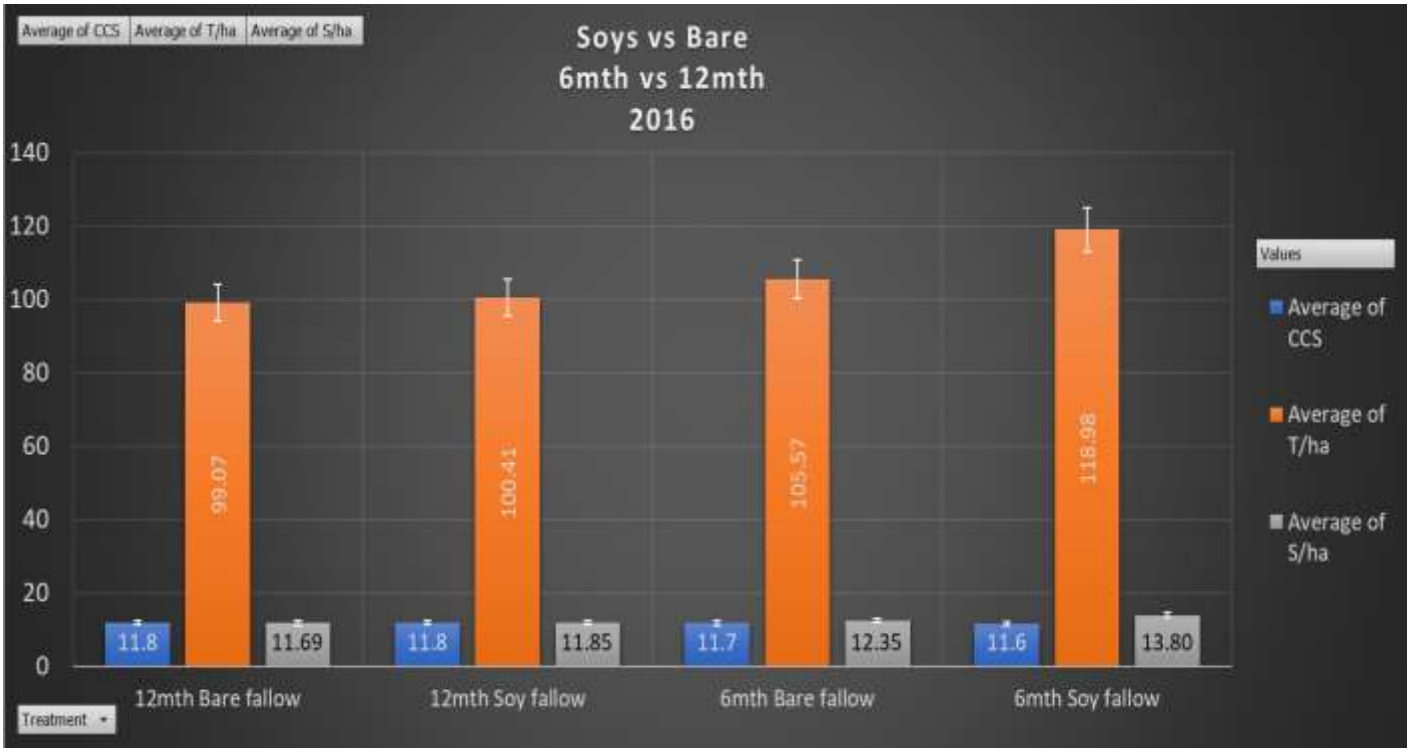
Block History, Trial Design:

Block 5-1	Trial 6mth bare/12mth bare						
	6mth soys/12mth soys						
		Headland					
		approx 18 rows	approx 18 rows	approx 18 rows	approx 18 rows	approx 21 rows	
	approx 220m	Trt 3 12 month Bare Fallow	Trt 4 12 month Soy Fallow	Trt 2 6 month Soy Fallow	Trt 1 6 month Bare Fallow	Guard Guard	headland
		crossdrain					
	approx 200m						
		pond					

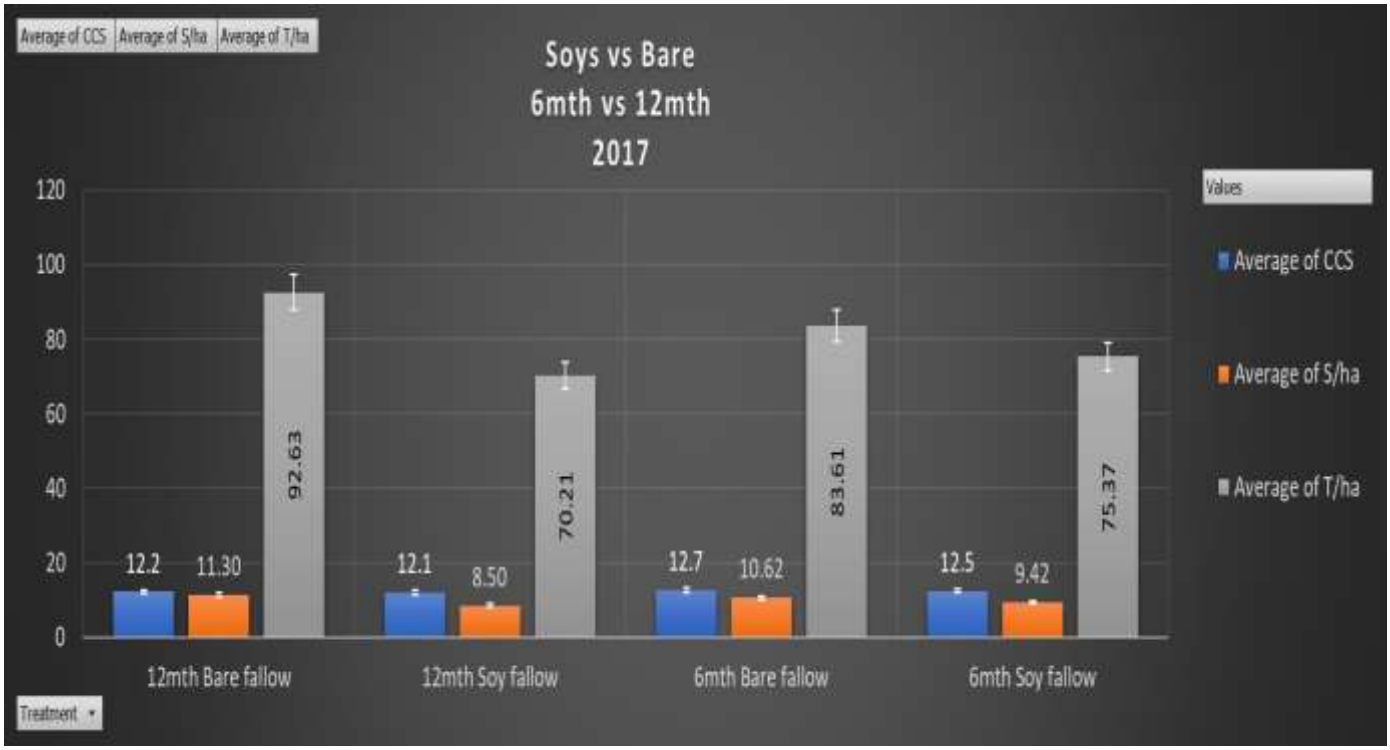
Treatments:
T1 – 6mth Bare fallow
T2 – 6mth Soybean fallow
T3 – 12mth Bare fallow
T4 – 12mth Soybean fallow

Results:

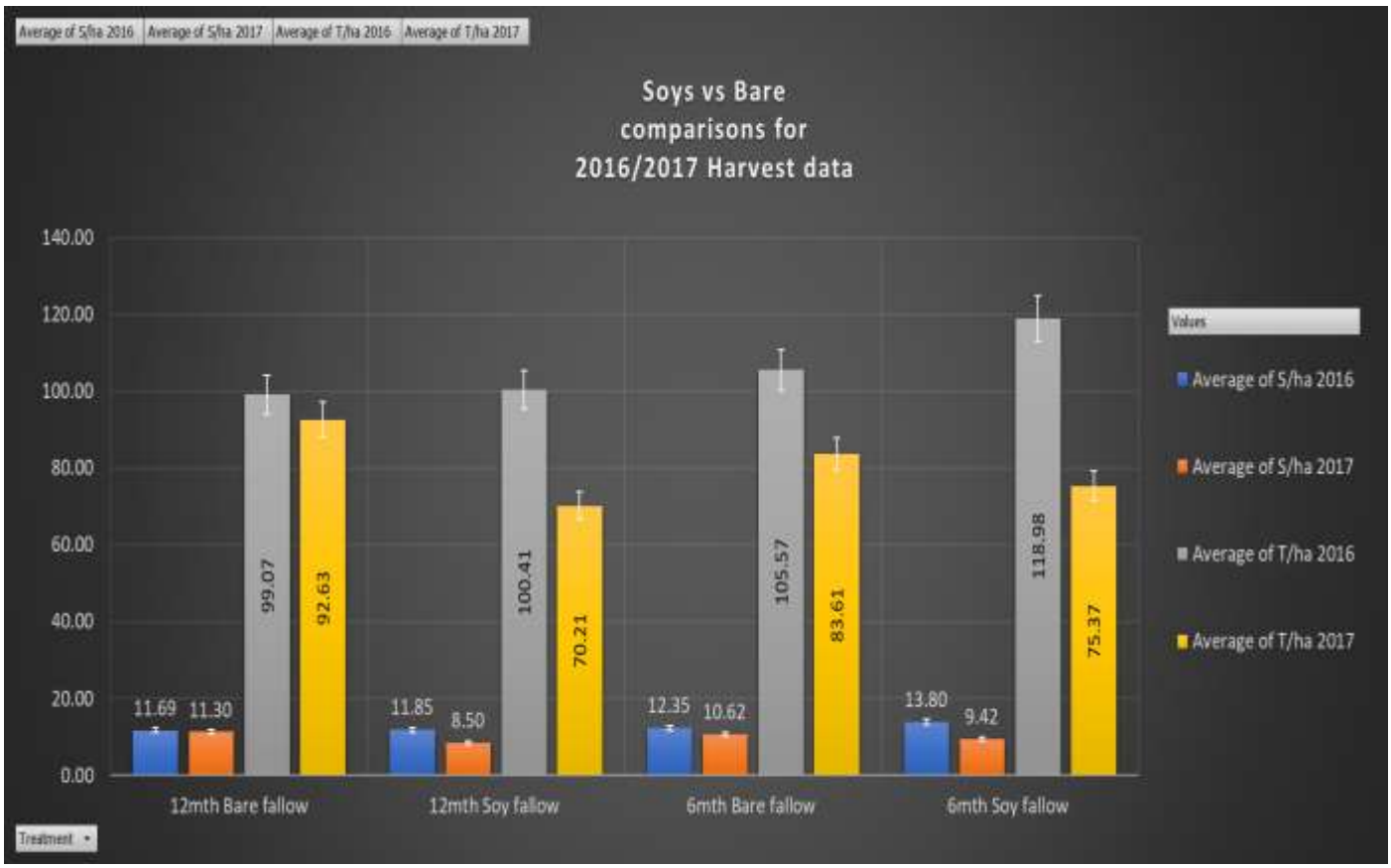
Harvest Data 2016



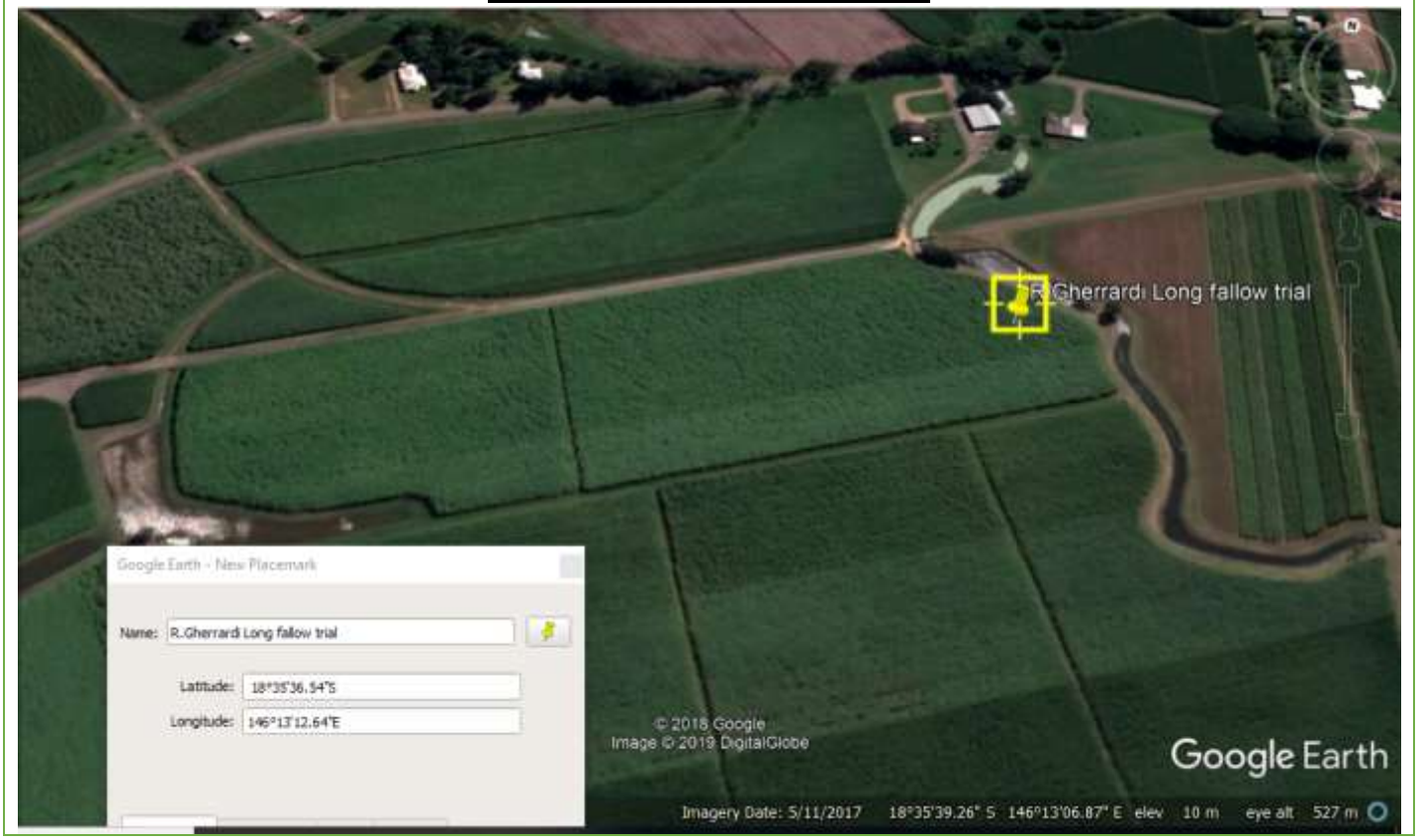
Harvest Data 2017



Comparing Harvest Data for 2016 and 2017



Google Earth Reference Map



Conclusions and comments

The trial initial failed when the soybean crop for the 12 mth treatment failed to germinate. The block was then spray repeatedly with herbicide and kept as a bare fallow instead. Due to this factor alone, I don't believe the trial is a fair representation of what a 12mth cover crop could produce. Due to the lack of reps within the trial the data cannot be statistically compared.

Advantages of this Practice Change

Once again due to the poor start of the trial it is hard to see what advantages there are for having a 12mth fallow crop.

We know that legume fallow crops even in a 6mth period can have many benefits especially for soil health components. Fallow cover crops can reduce herbicide use for the fallow period, but once again because the cover crop failed in the 12mth treatment, and herbicide was used in place, therefore no results were produces for the trials benefit.

For a fair representation of this trial I believe that it needs to be conducted again, with 3 replicates of each treatment.

Disadvantages of this Practice Change:

Cost of cover crop seed can be expensive, especially when the cover crop fails due to weather conditions.

Seed size can be an issue when planting

Will you be using this practice in the future:

No

% of farm you would be confident to use this practice :