

Exploring the merits of EcoTea™ seed treatment and foliar application on crop production and soil health



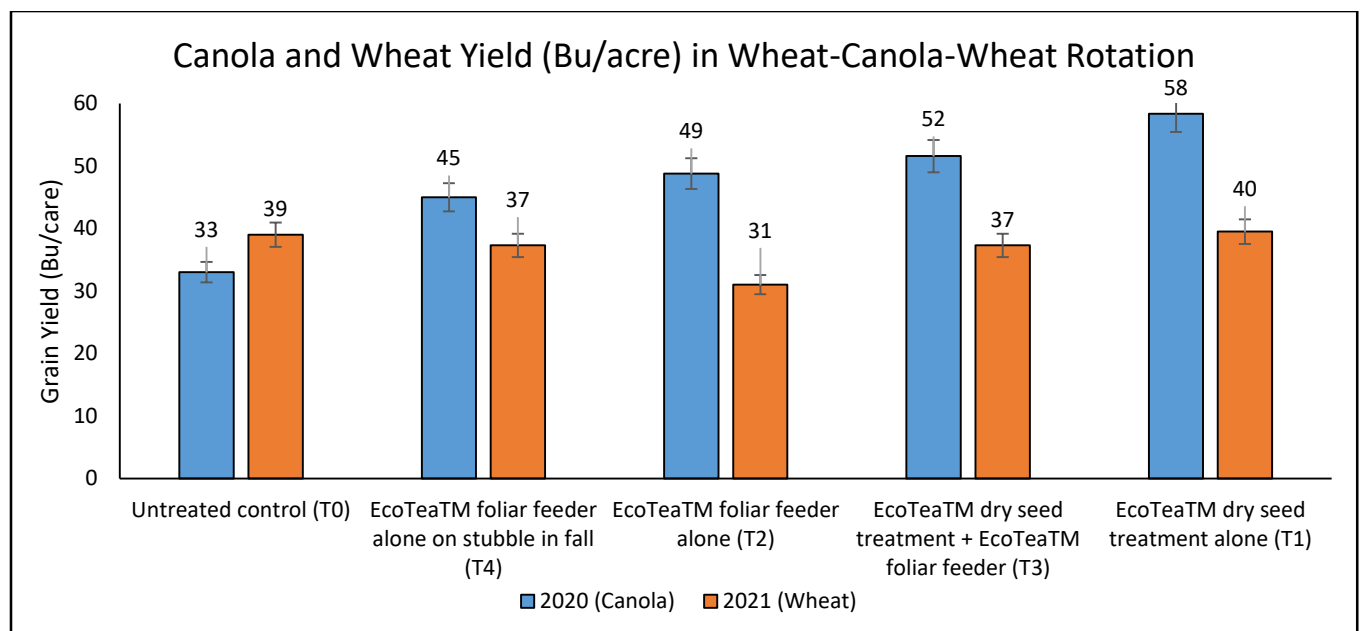
Trial I: To quantify the effects of EcoTea™ seed treatment and foliar applications on plant health, crop production and soil health.

Methodology

- Sites: Fairview Research Farm at 820059 Range Road 35, Fairview
- Crop: Wheat (2019)- Canola (2020)-Wheat (2021) rotation
- Experimental design: Randomized complete block design with 4 replications and the following 4 treatments:
 1. Untreated control (T0)
 2. EcoTea™ dry seed treatment alone (T1)
 3. EcoTea™ foliar feeder alone (T2)
 4. EcoTea™ dry seed treatment + EcoTea™ foliar feeder (T3)
 5. EcoTea™ foliar feeder alone on stubble in fall (T4) (Soil rejuvenation)
- The trial had a total of 20 test plots (6m x 20m).
- EcoTea powder seed treatment was used in 2019 & 2020. EcoTea liquid seed was used in 2021.

Results

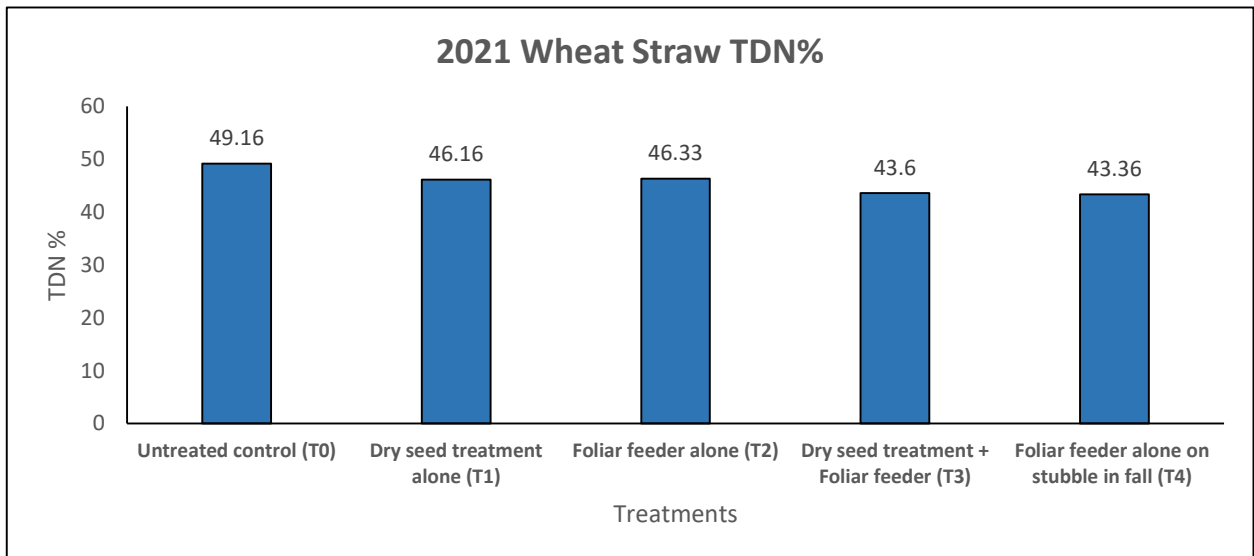
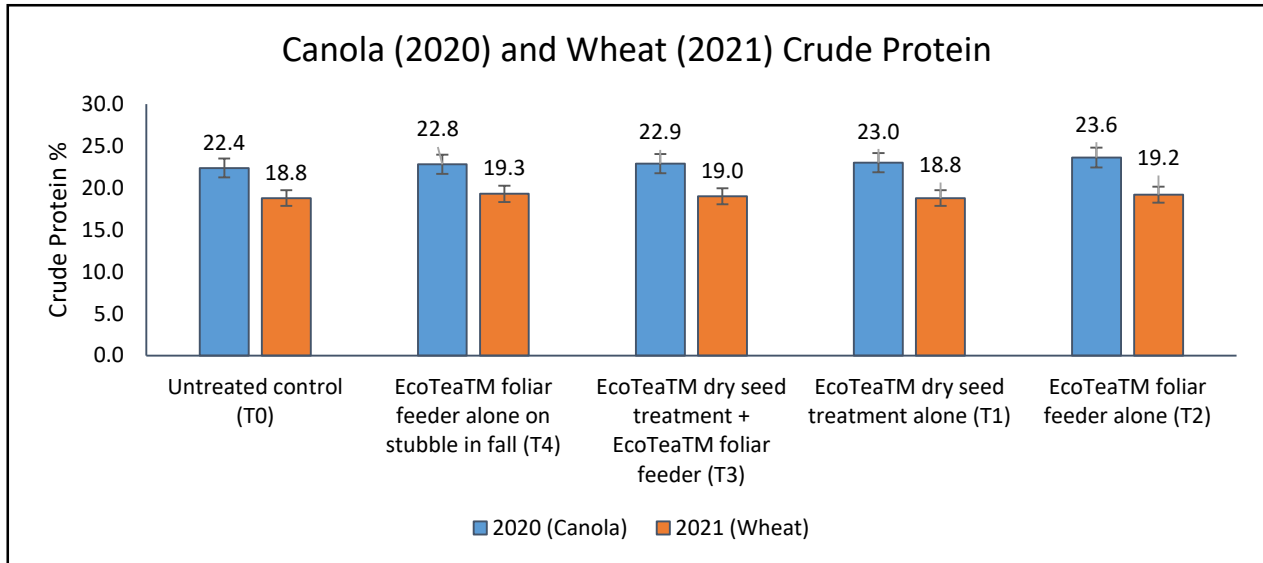
▪ Grain Production for Canola (2020) and Wheat (2021)

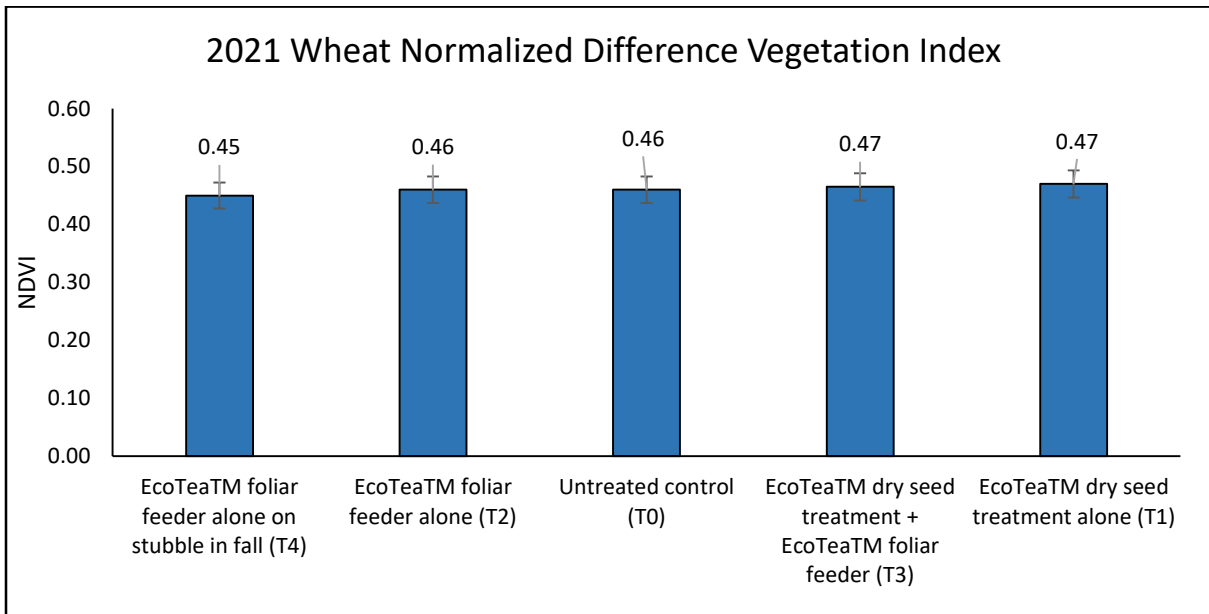
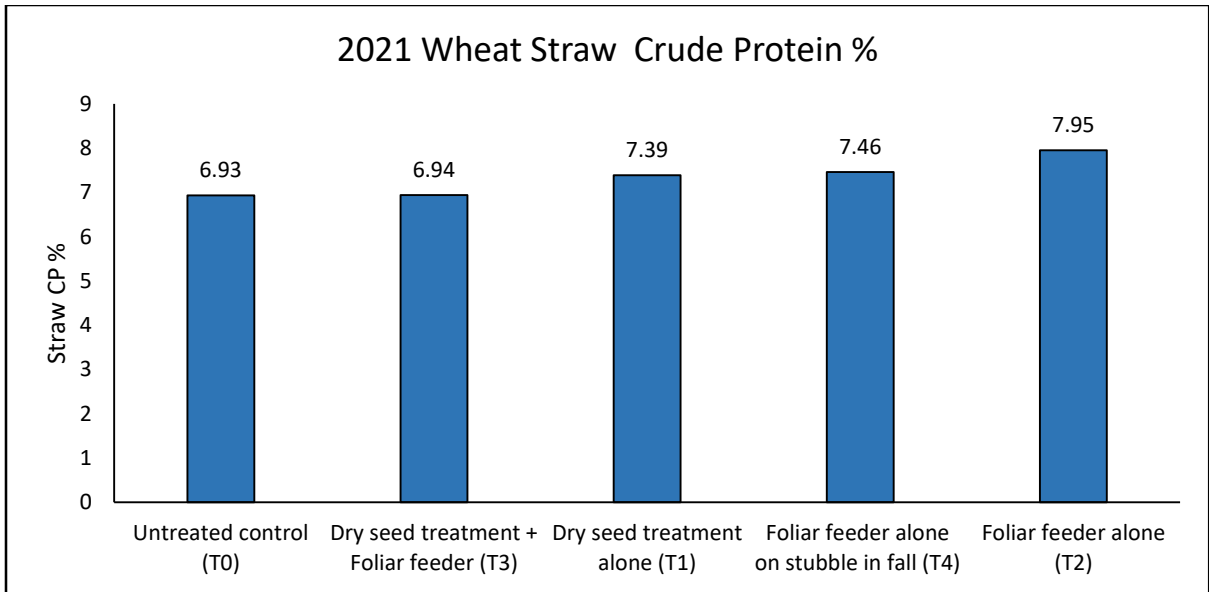


- No Data available for 2019 because of combine issues.

- Grain yield was improved by the application of EcoTea products. Although not significant, dry seed treatment, and the combination of foliar feeder and dry seed treatment showed the potential to improve grain yield for both Canola (2020) & Wheat (2021).
- With the EcoTea application in 2020, Canola yield was above the average of 46 bu/acre. EcoTea dry seed treatment alone increased Canola yield by 25 bu/acre compared to the control.

▪ **Grain and Straw Quality**





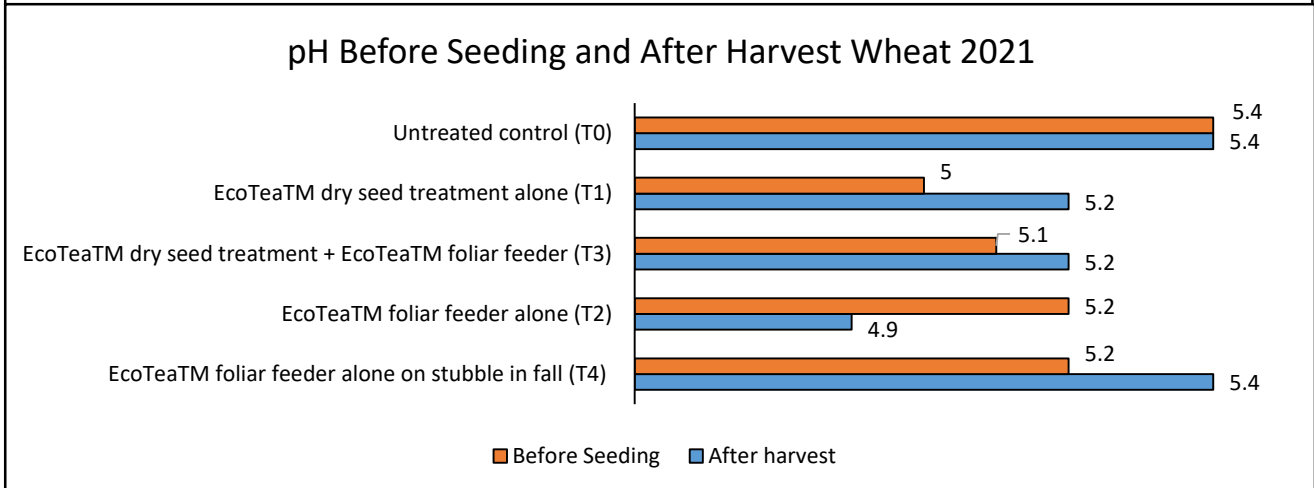
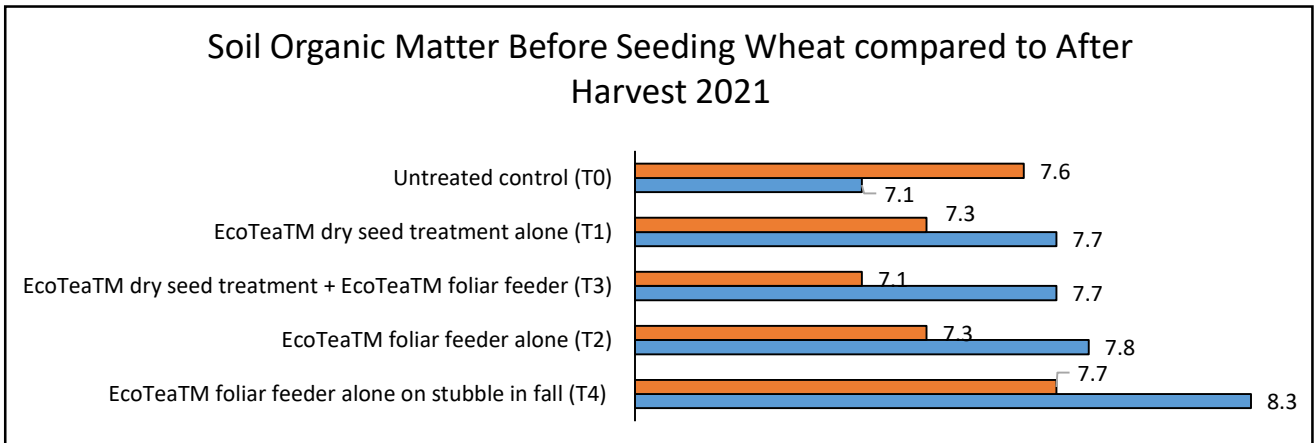
- Foliar feeding wheat crops with EcoTea products in 2021 improved wheat straw and was able to provide more than the required amount of crude protein for cow in mid pregnancy compared to the control which was slightly below the required ration of 7% CP for feeding cow in mid pregnancy.
- In Wheat (2021) – NDVI using dry seed treatment showed a slight improvement on plant health indicator NDVI when compared to control. This improvement is strongly correlated to an increase in Wheat grain yield

Soil Chemistry

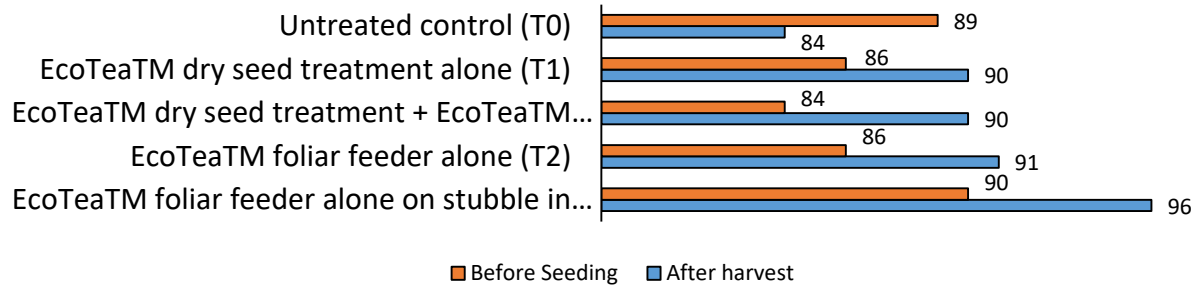
Soil Characteristics after Wheat Harvest in 2021 compared to soil baseline in 2019

| Treatment | SOM | NO3N | P | S | ENR |
|--|-----|------|----|----|-----|
| EcoTea™ foliar feeder alone on stubble in fall (T4) | 8.3 | 60 | 50 | 22 | 96 |
| EcoTea™ foliar feeder alone (T2) | 7.8 | 52 | 49 | 18 | 91 |
| EcoTea™ dry seed treatment+ EcoTea™ foliar feeder (T3) | 7.7 | 43 | 36 | 14 | 90 |
| EcoTea™ dry seed treatment alone (T1) | 7.7 | 48 | 42 | 16 | 90 |
| Untreated control (T0) | 7.1 | 48 | 31 | 15 | 84 |
| Baseline- 2019 | 7.6 | 31 | 30 | 14 | |

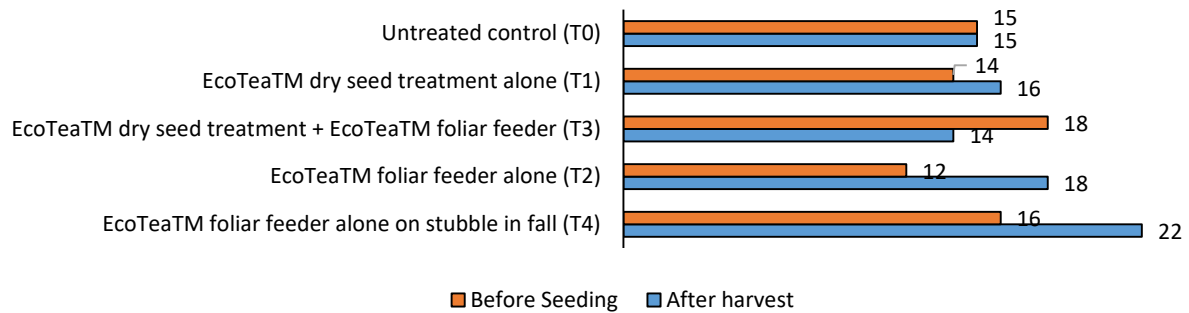
- In General, the different methods of EcoTea application has improved soil characteristics., the greatest improvement was with the application of EcoTea on fall stubble.
- Soil organic matter (SOM) and estimated nitrogen release (ENR) in soil has increased over the past three years compared to 2019 soil baseline data due the application of EcoTea products
- All methods of EcoTea applications seemed to raise pH soil level. The decrease of soil acidity was more prudent with foliar application on fall stubble



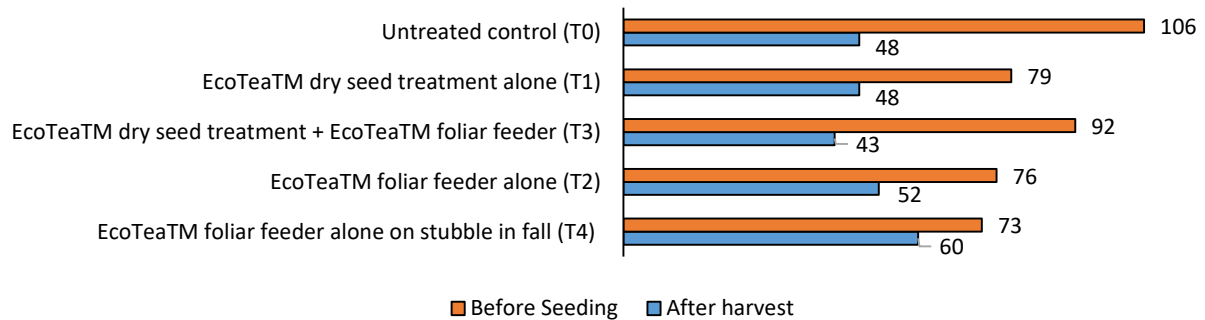
Estimated Nitrogen released in Soil Before Seeding and After Harvest - Wheat 2021



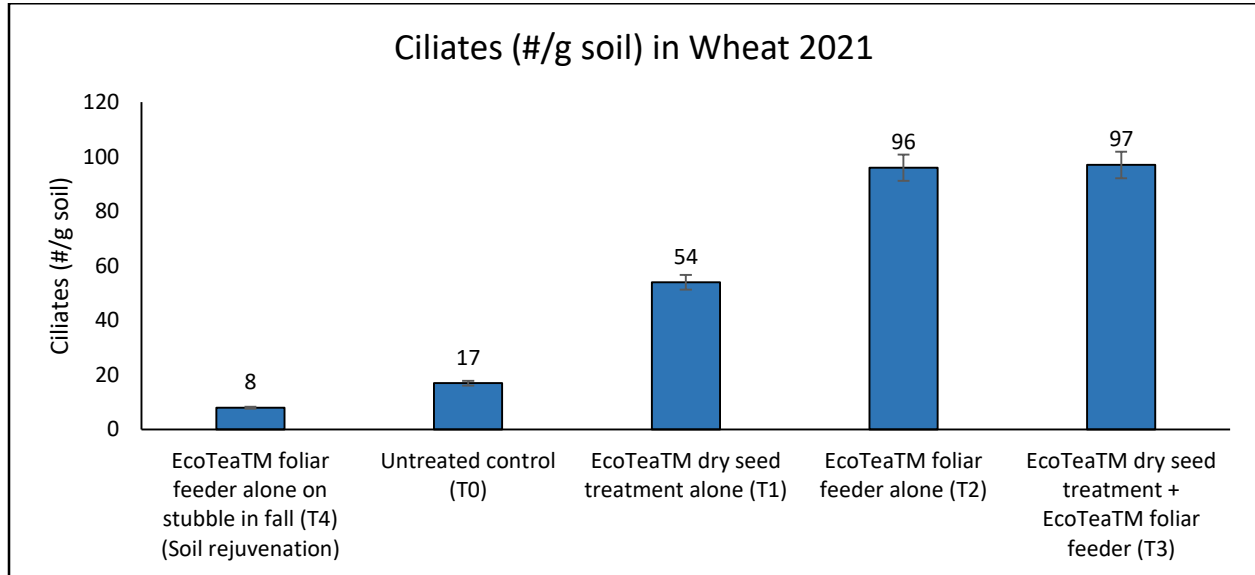
Sulphur in Soil Before Seeding and After harvest - Wheat 2021



NO3N Before Seeding and After Harvest- Wheat 2021



Soil Biology

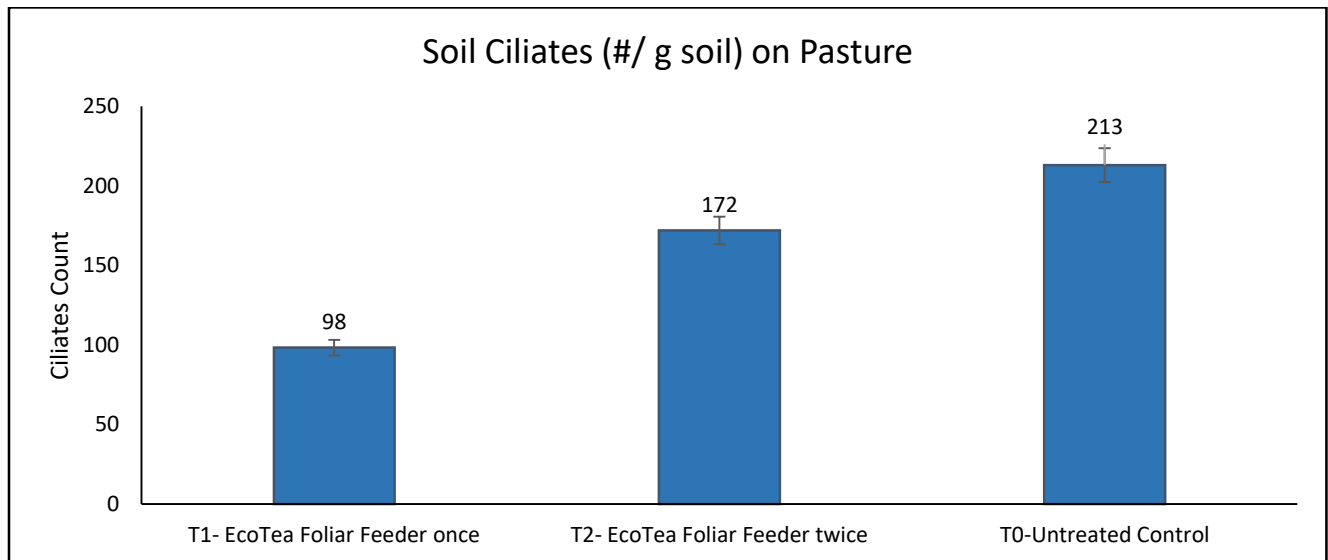
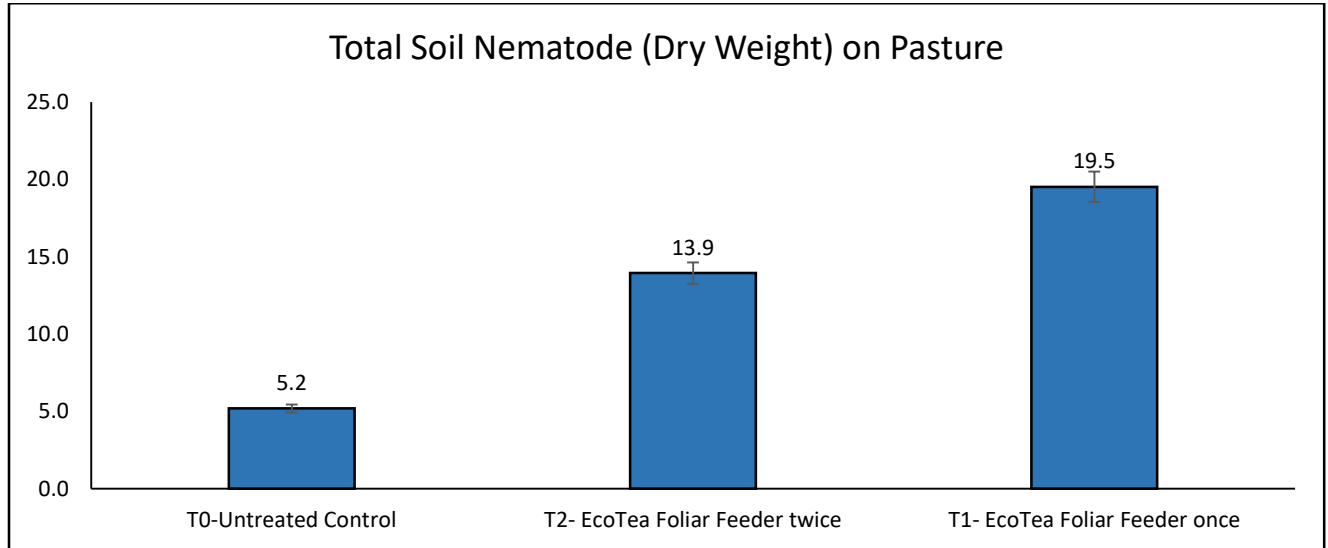


- Soil ciliates count was substantially higher with the application of EcoTea through seed treatment and foliar feeder.

Trial II: Effect of foliar application of EcoTea™ on perennial forage mixtures

- Site: Mackay Ross, Cleardale
- Experimental design: Randomized complete block design with 4 replications with the following treatments:
 1. Untreated control (T0)
 2. EcoTea™ foliar feeder once at vegetative stage (T1) –2nd to 3rd week in May
 3. EcoTea™ foliar feeder twice (vegetative stage & re-growth) (T2)
- The test plots will be 1/8 of an acre (0.125 ac) in area. There will be 25 feet guard plots between test plots to eliminate any cross contamination of the test plots.

Soil Biology



- The Foliar Feeding EcoTea on pasture have improved Total Nematode in soil. Biggest improvement was with spraying ecotae once on the pasture compared to control and spraying twice.
- Seems that soil ciliate (#/ g soil) have declined with the application of EcoTea on pasture