

TM21 DEMONSTRATION TRIALS

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AIM

To determine if there are benefits from the application of the biological based product 'TM21' developed by Basic Environmental Systems and Technology (B.E.S.T).

BACKGROUND

This trial is an on-farm demonstration as part of the Liebe Group's GRDC funded adoption project '**Growers critically analysing new technologies for improved farming systems**'.

The two sites was selected by the grower as it was a reasonably flat paddock with a consistent poor soil type.

The application of suitable food substrates (carbon) and/or introduction of beneficial micro-organisms to soils is largely untested but provides an opportunity to identify alternate strategies to enhance crop production and possibly contribute to longer term soil health.

TM21 is a product developed by B.E.S.T who describe it as a 'biostimulant' that is aimed at feeding and increasing the population of beneficial micro-organisms in the soil.

TRIAL 1 DETAILS

Property	Colin and Ruth Cail, east Wubin
Plot size & replication	500m x 12m x 2 replicates
Soil type	Wodjil (highly acidic sandy soil)
Sowing date	4/6/08
Seeding rate	55 kg/ha
Crop variety	Bonnie Rock
Fertiliser	4/6/08: 35 kg/ha Agstar
Paddock rotation	2005 = Wheat, 2006 = Pasture, 2007 = Wheat (with TM21 applied)
Herbicides	4/6/08: 250 mL/ha TM21, 1 L/ha Glyphosate, 1.4 L/ha Treflan, 35 g/ha Logran (on TM21 plots only) 24/7/08: 400 mL/ha MCPA 750, 5 g/ha Glean, 125 g/ha Diuron, 250 mL/ha TM21 (on TM21 plots only)
Growing Season Rainfall	262mm

RESULTS

Table 1: Yield and quality of Bonnie Rock wheat sown with and without TM21 in 2008.

Treatment	Yield (t/ha)	Protein (%)	Screenings (%)	Weight (g)
Control	2.63	11.6	2.58	1,577
TM21	2.44	12.1	1.68	1,464
LSD (5%)	ns			

There are no significant differences in yields between the control (no TM21 applications) and the TM21 plots (table 1).

TRIAL 2 DETAILS

Property	Colin and Ruth Cail, east Wubin
Plot size & replication	500m x 12m x 2 replicates
Soil type	Wodjil (highly acidic sandy soil)
Sowing date	3/6/08 – 4/6/08
Seeding rate	55 kg/ha
Crop variety	Bonnie Rock
Fertiliser	4/6/08: 35 kg/ha Agstar
Paddock rotation	2006 = Wheat, 2007 = Lupins
Herbicides	4/6/08: 250 mL/ha TM21 (on TM21 plots only), 1 L/ha Glyphosate, 1.2 L/ha Treflan, 35 g/ha Logran 25/7/08: 250 mL/ha TM21 (on TM21 plots only)
Growing Season Rainfall	262mm

RESULTS**Table 2:** Yield and quality of Bonnie Rock wheat sown with and without TM21 in 2008.

Treatment	Yield (t/ha)	Protein (%)	Screenings (%)	Weight (g)
Control	0.90	10.5	0.74	538
TM21	0.83	10.5	0.82	500
LSD (5%)	ns			

There are no significant differences in yields between the control (no TM21 applications) and the TM21 plots (table 2).

COMMENTS

- There are no significant differences in yields between the control (no TM21 applications) and the TM21 plots in either of the trials. It has been noted that many micro-organisms prefer pH levels between 6.5 to neutral, meaning acidic sites may not be the best location to test this product.
- It is anticipated that trial one will be run again for the third consecutive year to further investigate any potential yield differences between growing a crop with or without the application of TM21. Further replicates will also be added to account for field variability.

ACKNOWLEDGEMENTS

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- Thanks also to Colin and Ruth Cail for hosting the trial site and assisting with the seeding, harvesting and implementation of the trial and the CBH Group for grain analysis.

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