

The Gen Y Paddock Challenge – Compost to Alleviate Saline, Non-Wetting Soils

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Take Home Messages

- There was no positive return on investment to any rate of compost or deep ripping at the site this season.
- Observation will continue to assess impacts in successive years

Aim

To improve consistency of crop performance by alleviating salinity and non-wetting issues on an unproductive salt-affected paddock.

Background

Farmers are very good at trialling best practice soil management in the isolation of their own environment, however do not always effectively capture and analyse trial information beyond visual or yield assessments. They don't always have the opportunity to share the information they are gathering publicly, limiting their opportunities to gain valuable feedback from peers. By building the capacity of farmers to actively trial, capture and share their on-farm trials, with input from their peers and in a trusted environment, the Liebe Group aims to increase engagement and foster the adoption of best practice soil management methods.

The trial presented has been conducted by Casey Shaw who returned to his family farm in 2019. He is seeking to bring salt land back into cropping after it has been left as grazing for many years. The trial is hosted in the paddocks fourth year of cropping, as the business no longer produces livestock in their enterprise mix. Compost has been employed in an effort to help boost soil OC and reduce evaporation over summer to limit the salt that rises to the soil surface over summer and improve crop germination and overall performance.

Trial Details

Trial location	Shaw Property, Buntine
Plot size & replication	20m x 100m x 1 replication
Soil type	Sandy loam
Paddock rotation	2019 Barley, 2018 Canola, 2017 Barley
Sowing date	12/05/2020
Sowing rate	60 kg/ha Spartacus Barley

Treatments

	Treatment
1	Untreated Control
2	3 t/ha compost, unripped
3	3 t/ha compost, deep ripped
4	5 t/ha compost, deep ripped

Soil Composition

Depth (cm)	PH (CaCl ₂)	Col P	Col K	S	N (NO ₃)	N (NH ₄)	EC	OC
0-10	6.4	31	82	23	32	13	0.14	1.09
10-20	5.8	17	55	26	5	1	0.04	0.71
20-40	6.1	2	35	16	2	<1	0.03	0.24
40-60	6.5	<2	24	19	1	<1	0.03	0.13
60-80	6.6	<2	21	22	1	<1	0.05	0.13

Results

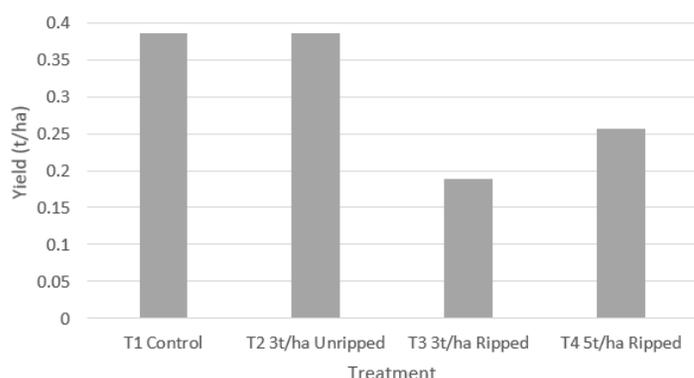


Figure 1: Yield (t/ha) as harvested on the 22/10/2020.

Comments

The area of the trial was salt affected and also suffered from non-wetting (hydrophobia). The site had a high weed burden consisting primarily of ice plant. Establishment was very poor across the entire site, with large patches (>20m²) being left completely bare of crop. The crop present was poor and lacked vigour, come harvest the entire site yielded very low (380 kg/ha – 188 kg/ha) and there was no observable correlation between the treatments applied and yield. The poor crop performance was likely due to a combination of the lower than average rainfall and late start experienced at the site as well as the multiple constraints limiting the yield potential on the site.

There was no evident return on investment from any of the treatments at the trial this season. The trial will be continued into the 2021 season to see if returns are evident in more favourable seasonal conditions.

Please note this is an un-replicated demonstration and result must be interpreted with caution.

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The Liebe Group would like to thank Casey Shaw for the extensive time and effort he invested into implementing and managing the trial, and for his continued participation in the Gen Y Paddock Challenge.

Peer review

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Scan the QR code to view a video interview with Casey.

