EMNZ Fodder Beet Evaluation trial

June 2024

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Introduction

One small plot replicated field trial was conducted between November 2023 and June 2024 to evaluate the effect that a range of EMNZ products have on Fodder beet (Geronimo) yield.

This report contains the experimental methods used and presents the results obtained.

Experimental Details

Trial location Details

554 Boundary Creek Road, RD2, Dunsandel, Canterbury
-43.661365, 172.249685

Trial Design

Table 1: Trial design	
Design:	Complete randomised block design
Replicates:	Six
Plot Size:	10 m x 2m
Sowing Date:	7th November 2023
Buffer details:	No buffer between replicates

Treatments

Two applications of the treatments were made (Table 2). Application A was applied at the 8-10 leaf stage on 20 December 2023 and Application B was applied at canopy closure on 25th January 2023. Liquid applications were applied using a CO_2 powered backpack sprayer with four Hardi MD02 air induction flat fan nozzles. Pressure was 280 kPa and the water rate applied was 200L/ha.

Table 2: Treatments and rates		
Trt no.	Product	Rate (L/ha)
1:	Control	-
2:	Plant-Stim	2
3:	Rapid Bor	5
4:	Rapid Bor + Plant-Stim	5 + 2

Assessments

A fresh weight yield assessment was taken on 14 June 2024. Bulbs from two 2 m rows were dug from each plot. Bulbs and tops were weighed separately.

Statistical analysis

Data generated in this trial was managed and statistically analysed within ARM (Agriculture Research Manager), a data management package used for planning, recording, evaluation and retrieval of trial data. Data was analysed using Analysis of Variance, using Duncan's New MRT multiple range comparison test.

RESULTS

Table 4: Yield of top, bulb and total (kgDM/ha)

Treatment	Top	Bulb	Total
Control	4938 c	14202 d	19140 d
Plant-Stim - 2L	5142 bc	15158 c	20300 c
Rapid Bor - 5L	5621 ab	15872 b	21493 b
Rapid Bor + Plant-Stim 2L	5902 a	16768 a	22670 a
LSD	501.7	705.9	1027.9
Standard Deviation	539.9	1069.5	1549.5
CV%	6.2	3	3.3
P value	0.001	0.001	0.001

Summary of Findings

1. Yield Improvement: Both Rapid Bor and Plant-Stim significantly improved yeild over the control but the combination of Rapid Bor and Plant-Stim significantly improved both top and bulb yields compared to the control and other individual treatments.

2. Statistical Significance: The results are statistically significant with a P-value of 0.001, indicating that the observed differences in yield are not due to chance.

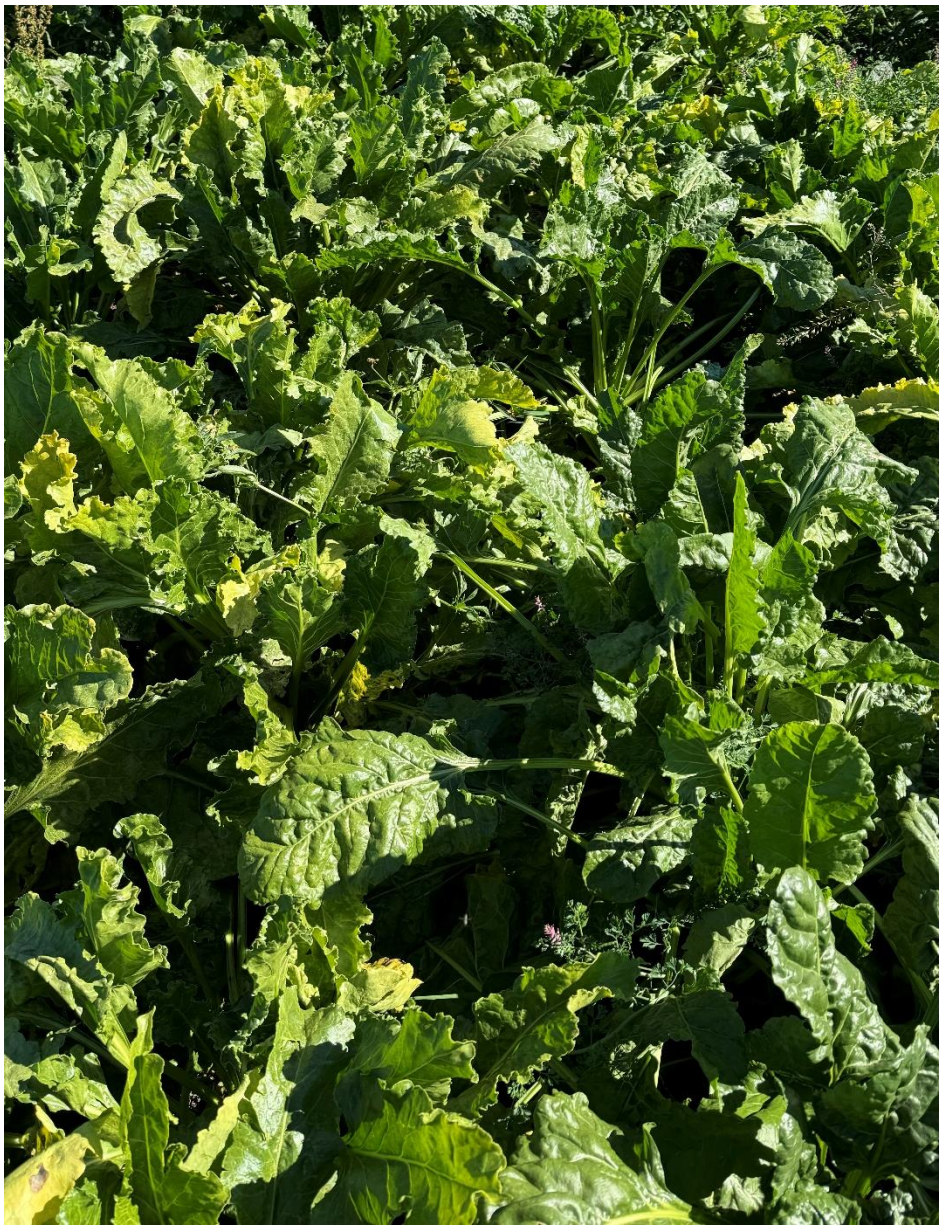
3. Best Treatment: The best performing treatment was the combination of Rapid Bor and Plant-Stim, which resulted in the highest total yield of 22670 kgDM/ha.

Photos

Beet at Application A – 20 December 2023

Beet at Application B – 25 January 2024

Beet at Harvest – 14 June 2024



Farmer/paddock inputs

Fertiliser at sowing

200 kg/ha DAP

150 kg/ha Kieserite

125 kg/ha MOP

Post sowing

150 kg/ha Urea (January)

150 kg/ha Urea (March)