

4.6 TRACE ELEMENT TRIAL - CAVANDISH

Location: Cavendish

Researchers: Steve Holden, NRE, Hamilton
Don Price, SFS, Hamilton
Simon Hill, Phosyn

Growing Season Rainfall:
(April – Oct) 446mm

Background:

The lighter soils of the Cavendish area have often not yielded as well as to be expected possibly due to the slightly shorter season but also more likely due to a trace element deficiency. Copper and zinc in particular have been identified as possible trace elements that could be in short supply.

Aim:

To investigate the possible yield response in wheat to zinc and copper on the lighter soils in the Cavendish area.

Treatments:

The paddock was sown with Kellalac wheat at 100 kg/ha using conventional farming equipment. Plots 6 metres by 100 metres long were established across the paddock with every third plot being a control. Harvested using conventional equipment with the yields determined by the use of a grain-weighing bin.

Treatments were:

- Control (Standard Paddock Practice)
- Soil application of copper (Copper sulphate @ 2.3 kg/ha)
- Soil application of zinc (Zinc sulphate @ 11 kg/ha)
- Soil application of copper and zinc
- Foliar application of copper (Coptrel 500 @ 500ml/ha)
- Foliar application of zinc (Zinctrac @ 1 l/ha)
- Foliar application of copper and zinc
- Potash (soil application 120 kg/ha)
- Clay (spread @ 1.0 t/ha)

Soil applications were applied to the soil and worked in at sowing. Both the copper and zinc sulphate were applied to the soil in a liquid form being sprayed onto the soil from a boom spray.

Foliar applications were applied at 5 leaf stage

(28th of July)

Plots were sown on the 24th of May and harvested on the 11th of January.



PHOSYN – Leading the way in Foliar Nutrition Technology

The Phosyn product range maximises performance and is backed by extensive glasshouse & field trials, chemical expertise, modern manufacturing systems and highly trained technical staff ready to answer your questions.



PHOSYN Broadacre Product Range:

Amazinc

Coptrel 500

Mantrac 500

Mangzinc

Mangcop

Photrel

For more information contact your local Phosyn representative:-

PHOSYN Head Office:

Tel: 07 5534 6900

Fax: 07 5534 6390

Email: phosynaus@phosyn.com

Website: www.phosyn.com

Simon Hill - Territory Manager, SA

Mob: 0427 684 848

Tel: 03 5426 4258

Fax: 03 5426 4259

Email: shill@phosyn.com

Results:

Treatment	Protein	Screenings	Yield T/ha
Control	14.7	15.6	3.50
Copper Soil Application	14.6	17.5	3.65
Zinc Soil Application	14.4	16.0	3.53
Copper & Zinc Soil Application	14.8	18.5	3.64
Copper Foliar Application	14.3	16.5	3.67
Zinc Foliar Application	14.5	16.5	3.24
Copper & Zinc Foliar Application	14.7	18.5	3.56
Potash	14.1	13.5	3.72
Clay Spread	14.5	16.0	3.35

Least Significant Difference 0.23 T/ha

Conclusions:

While some differences occurred between plots the yield responses generally were not significantly different from the control. This is despite the fact that plant tissue analysis indicated that the plants were copper and zinc deficient. This lack of response is probably due to a number of factors including the dry finish of the season, which resulted in low yields and very high screenings. As well a herbicide and root disease interaction had been observed across all plots which also would have resulted in lower yields.

While the 2000 season was not conducive to good yield responses in Kellalac wheat, the trial does however indicate that further work is needed in copper, zinc and potassium in this district .