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INDEPENDENT EVALUATION OF LIG-ZINC + MANGANESE IN WHEAT

**CONDUCTED BY TONY MACKERATH
IAMA TECHNICAL SERVICES, NARACOORTE, SA, 1996**

Abstract: Zinc and manganese deficiency is relatively common in the Southeast of South Australia. In 1996, a trial was conducted at Keith comparing the relative efficacy of a number of products in rectifying this condition. All these treatments applied vastly different amounts of actual element per hectare. S.J.B. LIG-ZINC + Mn 1.0 L/ha, fortified with an additional 1.0 L/ha of LIG-MANGANESE, gave the greatest grain yield and economic response. This was despite this treatment applying 18% of the manganese and 13.5% of the zinc applied with the next best responding treatment, Pivot Mangasol Zinc. Thus, this implies that there are differing uptake efficiencies between the various products. Grain protein was also improved, but significantly, only by treatments effectively applying larger amounts of actual manganese per hectare.

Experimental Details

Location:	Keith, Upper Southeast SA
Plot Size:	19 × 4 m
Replicates:	Three
Sowing Date:	5 th June, 1996
Variety & Rate:	Machete Wheat @ 80 Kg/Ha
Soil Type:	Grey-black over limestone
Paddock History:	Pasture - 1994-95
Fertilizer:	19-13-0-9 @ 100 Kg/Ha, Urea @ 50 Kg/Ha 8 weeks after sowing
Chemicals:	Pre-emergent - Logran @ 35 g/ha

Results:

Treatments	Rate (L/Ha)	Actual Zinc Applied per Ha (grams)	Actual Mn Applied per Ha (grams)	Yield (T/Ha)	Protein (%)	Improvement in Gross Marg Per Ha (\$)*
Untreated	-	-	-	2.88	10.8	-
LIG-ZINC + Mn	1.0	60	20	3.28	10.3	59.50
LIG-ZINC + Mn	2.0	120	40	3.31	10.3	59.80
LIG-ZINC+Mn + LIG-Mn	1.0+1.0	60	80	3.51	10.2	89.90
Spraygro Zinc Mang	4.5	225	225	3.06	10.5	18.68
Pivot Mangasol Zinc	6.5	442	442	3.39	11.0	73.70
L.S.D.				0.201	0.49	-

* Wheat @ \$160/tonne, no protein bonus.



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INDEPENDENT EVALUATION OF LIG-ZINC + MANGANESE IN BEANS

**CONDUCTED BY TONY MACKERATH
IAMA TECHNICAL SERVICES, NARACOORTE, SA, 1996**

Abstract: Zinc and manganese deficiency in faba beans is commonly encountered in the Southeast of South Australia. In 1996, a trial was conducted at Naracoorte comparing the relative efficacy of a number of products in rectifying this condition. All these treatments applied vastly different amounts of actual element per hectare. S.J.B. LIG-ZINC + Mn 2.0 L/ha, fortified with an additional 2.0 L/ha of LIG-MANGANESE, gave the greatest grain yield and economic response, improving yield by 1.21 T/ha (39%) and improving the gross margin by almost \$250/ha. This was despite this treatment applying less actual manganese and zinc per hectare than other treatments. This implies that there are differing uptake efficiencies between the various products.

Experimental Details

Location:	Naracoorte, Mid Southeast SA
Plot Size:	19 × 4 m
Replicates:	Three
Sowing Date:	16 th June, 1996
Variety & Sowing Rate:	Fiord faba beans @ 120 Kg/Ha
Soil Test:	Grey-black over limestone, pH (CaCl ₂) - 7.3, Organic carbon - 4.11% Phosphorous (Colwell) - 28 mg/kg, Free lime - high
Paddock History:	Safflower - 1994, Barley - 1995
Fertilizer:	Triple Super + 2% zinc @ 80 Kg/Ha
Chemicals:	Pre-emergent - Simatox @ 2.3 kg/ha, 08/08/96 - Verdict @ 330 mL/ha + Manzate @ 1.6 kg/ha

Results:

Treatments	Rate (L/ha)	Actual Zinc Applied per ha (grams)	Actual Mn Applied per ha (grams)	Yield (T/ha)	Treat Cost per ha	Improvement in Gross Marg Per ha *
Untreated	-	-	-	3.09	-	-
LIG-ZINC + Mn	1.0	60	20	3.25	\$4.50	\$30.70
LIG-ZINC + Mn	2.0	120	40	3.63	\$9.00	\$109.80
LIG-ZINC+Mn + LIG-Mn	1.0+1.0	60	80	3.94	\$10.90	\$176.10
LIG-ZINC+Mn + LIG-Mn	2.0+2.0	120	160	4.30	\$21.80	\$244.40
Spraygro Zinc Mang	4.5	225	225	2.95	\$10.12	-\$40.92
Pivot Mangasol Zinc	6.5	442	442	3.64	\$7.90	\$113.10
L.S.D.				0.35	-	-

* Faba beans @ \$220/tonne.