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# 1975 Magnetic seed treatment

M. W. Perry

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EXPERIMENTAL SUMMARY - 1975

M.W. PERRY

MAGNETIC SEED TREATMENT

In early 1975 a magnetic devise for treating cereal seed was imported into Western Australia from Canada.

The device ("Zapper" Magnetic Seed Treater, manufactured by Agronetics Ltd., Calgary, Alberta, Canada) consists of two parallel magnets with opposed poles, encased in a plastic moulding. Seed is treated by passing it through the magnetic field between the magnets. Literature accompanying the Zapper claimed earlier maturity and that - " . . . a majority of research tests have shown 5 - 15% increases in yield".

The device was tested in five field trials and in laboratory tests during 1975. No effect of magnetic treatment was detected in any trial.

FIELD TRIALS. 75 WH 61, 75 M 41, 75 MT 35.

	Plot Size	Fertilizer	Sown	Harvested
Wongan Hills	6 rows x 25m	n.a.	18.6.75	4.12.75
Merredin	6 rows x 25m	n.a.	11.6.75	27.11.75
Mt. Barker	5 rows x 25m	Agran 24:24, 177 kg/ha	14.5.75	11.12.75

Randomised block design, four treatments and 100 replications.  
Sown at 45 kg/ha with a cone seeder.

75 WH 61

	Wheat Gamenya	Barley Clipper	
Control	4.25	4.04	4.14
Treated	4.04	3.94	3.99
	4.14	3.99	4.06

Source	d.f.	MS	VR
Replication	99	4.5372	5.0627***
Control vs Treated	1	2.4743	2.7609 NS
Wheat vs Barley	1	2.4555	2.7399 NS
Interactions	1	0.3754	NS
Error	279	0.8962	

339.

CV 23.28%

75 MT 35

	Gamenya	Clipper	
Control	3.83	3.85	3.84 Not Significant
Treated	3.89	3.63	3.76
	3.86	3.74	3.80

CV 22.65%

75 M 41

	Gamenya	Clipper	
Control	2.309	1.902	2.105
Treated	2.293	2.115	2.208
	2.301	2.008	2.155

Source	d.f.	MS	VR
Treatment	3	3.6184	9.88***
Control vs Treated	1	8.5721	2.66 NS
Wheat vs Barley	1	0.9731	23.40***
Interactions	1	1.3081	3.57 NS
Error	396	0.3664	

CV = 28.1%. LSD between Treatment Means ( $P < 0.05$ ) = 0.1681

D. Fogarty, Perenjori.

Experimental Detail : Madder wheat, sown 5.6.75 at 50 kg/ha,  
120 kg/ha Agras 18:18 drilled with the seed.  
Randomised block design with 10 replications;  
plot size 2.1m x 60m = 0.0126 ha.

Sites : Heavy land - Red clay 1575 kg/ha superbank, second crop.  
Light land - Yellow loamy sand over clay, 450 kg/ha  
Superbank, first crop after pasture.

Yield kg/plot

	Control	Treated	CV
Heavy land	16.53	16.63 NS	5.90
Light land	11.37	11.02 NS	7.82%

GENERAL COMMENTS.

In addition to the field trials reported here, laboratory experiments failed to reveal any effect of magnetic treatment on total germination, rate of germination, or seedling dry weights of five wheat varieties.

The fact that no significant effect of treatment was found in any field trial must be viewed with caution. The ability of a trial to discriminate between treatments depends upon the degree of replication, and the natural variability inherent in the materials, methods and site used. It is thus seldom possible to identify as significant a difference of less than 5% in mean yield. Smaller differences may be real effects of treatment but would be undetected in conventional trials.

In these particular trials, however, treated plots were neither consistently higher yielding nor lower yielding than control plots. Since there was also no discernible effect on germination in the laboratory, there is nothing to suggest that the "Zapper" can affect cereal growth or yield even at levels undetectable in field scale trials.