5.1 Water Crystals Trial

Location or Trial: SFS Inverleigh Main Research site

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Summary of findings: The 'water saving' water crystals product did not significantly increase wheat yields and had no effect on grain quality.

Background: Wheat can often run out of moisture during the grain fill period, thereby restricting yield. There are a number of 'water saving' products available through plant nurseries for home garden use. This trial investigates if a water storage crystals product had the potential to improve yields in broad-acre cropping scenarios by storing water and then making it available at this crucial, grain fill period (Growth Stage 70-89).

Objectives: To investigate the use of water storage crystals as a means of increasing plant available water (PAW) during the grain fill period.

Growing Season Rainfall (Apr – Nov): 235 mm

Soil Nutrition: Silty Loam, pH 5.8, Nitrate Nitrogen 30 mg/kg

Trial Design: The treatment was a 'Water Storage Crystals' product purchased from a plant nursery. The design was a randomised and replicated trial with two treatments: untreated and water crystals pre-drilled at 10 grams per square metre. The trial was sown with Kellalac wheat and both treatments received a normal fertiliser and fungicide regime.

Sowing Date: 16th June 2006

Sowing Rate: 200 plants/m^2

Harvest Date: 4th January 2007

Seed Treatment: Hombre

Trial Results:

Table 1 : Grain yield and quality

	Yield	Protein	Retention	Screenings	TGW	TW
Treated	1.050	16.20	94.22	5.500	31.68	72.65
Untreated	1.117	16.03	93.92	5.767	30.17	72.78
LSD 5%	0.2267	0.5812	2.3485	2.3094	3.5794	2.7047
Sig Diff.	no	no	no	no	no	no
CV	24.53	2.13	1.36	22.59	11.21	2.05

There was no significant in yield and other grain quality parameters between the treatments. The addition of water crystals therefore had no effect.

Trial Observations: The dry finish to the growing season certainly had an impact on the success of this trial. There was a total 5.5mm recorded at the site trial for October (the grain fill period). It is therefore difficult for water crystals to provide moisture if there is none to store. The water crystals may have actually reduced plant available water at this point and reduced soil moisture further.