

DISEASE AND TEMPERATURE PRESSURE ON CHICKPEA YIELDS

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AIM

To demonstrate the disease resistance of new Sonali, Rupali and Genesis836 and potential release and Genesis508, chickpea varieties.

BACKGROUND

The season of 1999 brought ascochyta and this spelt the death of the chickpea industry in WA. Since then a massive effort has been placed on breeding for resistance to ascochyta. In recent times there have been a number of promising varieties showing good tolerance to the disease. Previous growers are keenly interested in these ascochyta blight resistant chickpea lines however, the industry must be confident that these lines offer the ascochyta resistance needed. For the new varieties to be adopted these lines managed as close to common practice as possible. This requires larger size trial plots implemented with grower machinery and managed as per our ascochyta management package. This will greatly assist in providing confidence to new growers.

This trial was to test, on a large scale using grower machinery, the yield and ascochyta tolerance of desi chickpea lines targeted for release. It will demonstrate robust ascochyta management packages that accompany variety release.

TRIAL DETAILS

Property	Hyde Park Farms, Liebe Group Main Trial Site, Dalwallinu
Plot size & replication	5 x 50 m, 3 replicates
Soil type	Red clay
Sowing date	27 th May 2005
Seeding rate	Sonali, Rupali, Genesis836 and Genesis508 at 108 kg/ha Genesis90 at 120 kg/ha
Fertiliser (kg/ha)	80 kg/ha DAP
Herbicides	Pre- sowing 25 th May 100mL Wetter 0.1 %v/v, 1.2L Wipeout 450 Post sowing 27 th May 2.4L Sprayseed 250, 1L Triflur X, 100mL Talstar, 0.55kg Simagranz, 100g Balance
Fungicides	1.5L Bravo - all varieties received first and final Bravo applications, the first on 19 th July, 4 weeks after sowing, the final 28 th September during podding. Sonali, Rupali and Genesis836 also received an application 8 weeks after sowing on the 16 th of August.
Growing Season Rainfall	May to October 259 mm

RESULTS

Variety	Yield	SE
Sonali	0.99	0.22
Rupali	0.72	0.22
Genesis 836	0.98	0.24
Genesis 090	0.72	0.37
Genesis 508	0.72	0.23
LSD	0.13	

Means followed by the same letter do not significantly differ (P=0.05,LSD)

Dalwallinu

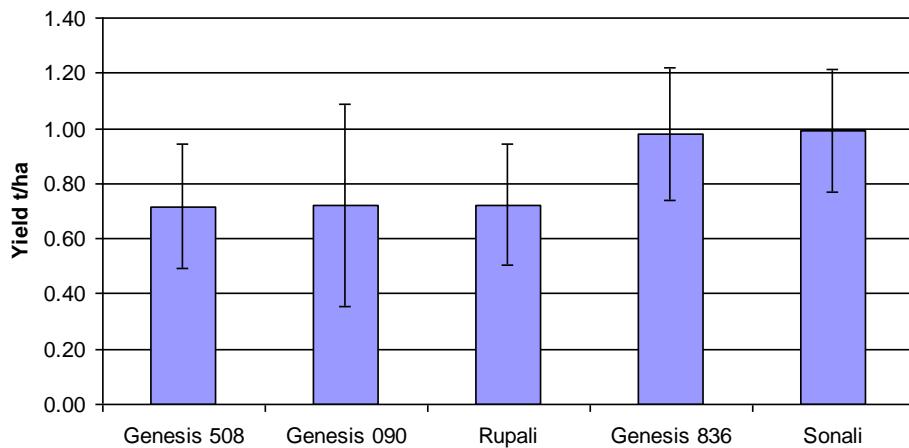


Figure 1: Yield versus Variety at Dalwallinu.

Table 2: Table of estimated gross margins for each of the varieties in the trial.

	Yield t/ha	Gross return	Variable costs	Gross margin
Genesis 508	0.72	265.61	155	110.61
Genesis 090	0.72	267.19	155	112.19
Rupali	0.72	267.78	176	91.78
Genesis 836	0.98	362.21	176	186.21
Sonali	0.99	367.39	176	191.39

Assumptions- * assuming chickpea price \$370, average price of last 5 years, and that Genesis 090 is sold as desi at this price.

COMMENTS

The trial in Dalwallinu suffered from low soil temperature after sowing. This was closely followed by low soil moisture during July. The yields would have been greater if the sowing had been a week earlier than the 27th of May.

Disease was not a large problem at this trial as the level of inoculum would have been very low. Not a chickpea paddock within 5 kilometres of the trial in the last 2 seasons.

Bird damage accounts for some of the large standard deviations in the Genesis 90. Half of one plot suffered damage.

Genesis 508 will not be released for Western Australian growers. The variety requires a season longer than our environment provides. It has good ascochyta resistance, requiring only one fungicide application, but uneconomically low yield.

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