

3.3 GRAIN LEGUME TRIAL - TASMANIA

Location: Symmons Plains and
Riccarton (Campbell Town)

Researchers: Geoff Dean, TIAR
Rob Howard, TIAR
Simon Munford, DPIWE

Growing Season rainfall (April-Nov):
Symmons Plains -525mm
Riccarton - 337mm

Background:

There is an important role for a grain legume break crop in the cropping rotation. To date there has been limited success with obtaining profitable yields from grain legumes in the higher rainfall areas. Newer varieties and improved management practices offer new potential. With good disease control faba beans have shown excellent yields.

Aim:

To evaluate a range of new varieties of grain legumes under improved management conditions.

Treatments:

Albus lupins, faba beans, field pea, lentils and chickpeas were grown at each site. Only data from faba beans is presented here as other crops are still being harvested at the time of writing.

Grain yields of faba beans were measured as well as assessments of early vigour, disease resistance (ascochyta), time of flowering and degree of lodging.

Mean grain yields are presented in Tables. Faba bean (& broad bean) yields were high particularly at Symmons Plains despite a sharp finish to the season. Faba beans, being early maturing, were less affected by this than other grain legume crops.

The lines IxA 56/1T, 1060 and 1057/1T yielded well at both sites but were not statistically significantly higher than the variety Fiesta VF at Symmons Plains. Fiord was significantly lower yielding than Fiesta at both Symmons Plains and Campbell Town. The colder growing conditions at Campbell Town resulted in shorter plant heights and there was some difficulty

Sowing date: Symmons Plains - 16 May 2000
Campbell Town - 23 May 2000

Seeding rate:

Symmons Plains
Target density of 20 (large seeded)
45 (small) plants/m²
Campbell Town
Target density of 15 (large seeded)
35 (small) plants/m²

Harvest date: 27 December 2000

Fertiliser used:

Symmons Plains
250kg/ha 6:11:8:6 + Mo,B
Campbell Town
150kg/ha 6:11:8:6 + Mo,B

Weed Control:

Symmons Plains
PSPE- Stomp 2l/ha, Gesatop 1.5l/ha
Sencor 300ml/ha
Post-em Verdict 600ml/ha
Campbell Town
Pre-em -Treflan 1.5l/ha
PSPE Stomp 2l/ha, Gesatop 2l/ha

Pest Control:

Symmons Plains
Le-mat 200ml/ha, Endosulfan 1l/ha,
Bravo 2.5l/ha, Bavistan 250ml/ha X2

Results:

in picking up the lower pods on Fiord. The broad bean variety Aquadulce was also significantly lower than Fiesta at Campbell Town but reached equivalent yields at Symmons Plains. Single observation plots of 9 lines were also grown. In these plots Manifest and Ascot were 5% and 10% lower yielding than Fiesta. One very late English line 661T was over 36% lower than Fiesta (data not shown).

Two sprays for ascochyta were required at Symmons Plains while Riccarton remained relatively free of disease.

Table 1. Faba bean yields at Symmons Plains and Riccarton

Genotype	Sym. Plains		Riccarton		Overall Mean
	Yield (t/ha)	% Fiesta	Yield (t/ha)	% Fiesta	% Fiesta
lxA 56/1T	7.10	106.4	4.20	113.3	109.9
1060	7.02	105.2	4.19	113.1	109.2
1057/1T	7.20	108.0	3.86	104.1	106.0
lxA 7/5T	6.47	97.0	4.08	110.2	103.6
Fiesta VF	6.67	100.0	3.70	100.0	100.0
683T	7.01	105.0	3.50	94.5	99.7
1056/1T	6.41	96.1			96.1
674T	6.62	99.2	3.18	85.9	92.6
lxA 35/3T	6.06	90.8			90.8
Aquadulce	6.72	100.7	2.93	79.0	89.9
278 1&2T	5.74	86.0	3.28	88.4	87.2
lxA 54/3T	5.25	78.7	3.36	90.6	84.6
Fiord	5.82	87.3	2.87	77.5	82.4
lxA 44/1T	5.34	80.0			80.0
LSD (0.05)	0.89		0.38		

Conclusions:

It is evident that the newer faba bean lines will play an important role as a break crop. For now Fiesta is yielding well (av. of 6.2t/ha over last 3 years at Symmons Plains) and there have been reasonable prices received. In the future the line lxA 56/1 with good resistance to ascochyta is one to watch. The broad bean cultivar Aquadulce has continued to yield well - the greatest problem with this line is the large seed size and associated difficulties in sowing.

Sponsors: GRDC, TIAR

Further details:

Geoff Dean, Grain Legume Officer, TIAR,

PH. 03 6336 5233

Geoff.Dean@dpiwe.tas.gov.au