

6.1.3 GRAIN LEGUME VARIETY TRIALS - FABA BEANS, FIELD PEAS (TASMANIA)

Location: Symmons Plains and Riccarton
(Campbell Town)

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Growing Season rainfall (April-Nov):

Symmons Plains: 378mm
Riccarton: 265mm

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. Peas sown late enough to avoid frost and waterlogging damage have also yielded well.

Aim:

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

Methodology:

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

Grain yields were measured as well as assessments of early vigour, disease resistance, time of flowering and degree of lodging/standing ability. Trials were sown on flat ground, not raised beds.

Pest Control: Le-mat 50ml/ha
Faba beans: Bravo @ 2.5l/ha
Peas: Triad @ 1l/ha

Results and Discussion:

Faba beans: Data is presented from the two SFS sites as well as the grain legume evaluation site at Cressy Research Station (Table 66). In comparison to the 2001-02 season, yields were significantly lower except at Symmons Plains. This site benefited from earlier establishment and a good rainfall event in mid November.

There were no significant differences in the performance of different faba bean lines at Symmons Plains or Riccarton but overall some of the newer material ie I*A56/1B, 1060 and 1057/1 performed well.

Sowing date:

Symmons Plains:

Faba beans: 25 May 2002
Peas: 2 Sept 2002

Campbell Town:

Faba beans: 14 June 2002
Peas: 5 Aug 2002

Seeding rate:

Symmons Plains:

Faba beans: Target density 20 (large seeded)
45 (small) plants/m²

Peas: Target density 80 plants/m²

Campbell Town:

Faba beans: Target density 15 (large seeded)
35 (small) plants/m²

Peas: Target density of 75 plants/m²

Harvest date:

Symmons Plains:

Faba beans: 6 Jan 2003
Peas: 17 Jan 2003

Campbell Town:

Faba beans: 30 Dec 2003
Peas: 30 Dec 2003

Fertiliser used:

Symmons Plains: 250kg/ha 4:13:7:9 + Mo

Campbell Town: 150kg/ha 4:13:7:9 + Mo

Weed Control:

Symmons Plains:

PSPE: Stomp 2l/ha,
Gesatop 2.0l/ha (faba beans),
Sencor 450ml/ha (peas)

Campbell Town:

Pre-em:Treflan 1.5l/ha
PSPE: Stomp 2l/ha,
Gesatop 2l/ha (faba beans),
Sencor 500ml/ha (peas)

Post-em:Fusilade 500ml/ha

Fiord benefited from the early finish to the season and yielded well compared with other seasons. In observation plots at Symmons Plains and Cressy the broad bean variety Aquadulce continued to match the yield of Fiesta. Ascot and Manifest, as in previous years, yielded 5-15% lower than Fiesta in observation plots (data not shown).

All sites were sprayed once for ascochyta. Disease pressure was very low over the season.

Table 66: Faba Bean Yields from Replicated Plots at Symmons Plains and Riccarton

Line	Cressy		Symmons Plains		Campbell Town		Mean	
	Yield (t/ha)	% Fiesta	Yield (t/ha)	% Fiesta	Yield (t/ha)	% Fiesta	Yield (t/ha)	% Fiesta
I*A 56/1B	4.31	104.8	5.92	104.8	2.78	110.4	4.34	106.7
1060	4.36	105.9			2.66	105.6	3.51	105.8
1057/1T	4.41	107.1			2.61	103.6	3.51	105.4
I*610-27/3	4.22	102.4					4.22	102.4
I*A 56/1T	4.08	99.1			2.58	102.4	3.33	100.7
FIESTA	4.12	100.0	5.65	100.0	2.52	100.0	4.10	100.0
FIORD	4.03	97.9	5.64	99.8	2.48	98.2	4.05	98.6
483/3	3.60	87.4	5.88	104.1	2.51	99.7	4.00	97.0
I*A 7/3	3.55	86.3					3.55	86.3
I*A35/3T	3.35	81.4					3.35	81.4
lsd	0.53		nsd		nsd			

Field Peas: Data is presented in Table 67. Yields were disappointing and much lower than in the 2001-02 season. There was enormous variation between the two sites despite similar overall yields. Establishment at Symmons Plains was slow due to a cold spell and this, coupled with the later sowing date probably created greater moisture stress at the end of the season. As a consequence the later flowering and maturing lines tended to yield lower. In addition the poorer performing lines at Symmons Plains were generally of shorter stature and semi-leafless. The resulting low plant biomass, compared with tall conventional-leaf types, may have been unable to support high yields.

The yields of Mukta and Kaspera, in particular, were disappointing given a run of high yields over the last 2-3 years. The marrowfat pea lines being early maturing generally yielded well, in particular Midichi. In irrigated pea variety trials conducted by TIAR some of the marrowfat yields were over 4t/ha. Whero continued to languish near the bottom of the pack. While the market continues to pay a premium for and demands a "Whero" type maple pea with a good sized, well rounded seed there is little choice but to grow this variety. One NZ maple line, PRL-M5, showed a high yield potential, and quality will be assessed shortly.

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Monthly trial updates including photos

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Table 67: Field Pea Yields from Replicated Plots at Symmons Plains and Riccarton

Variety/Line	Cambell Town		Symmons Plains		Mean	
	Yield (t/ha)	% Whero	Yield (t/ha)	% Whero	Yield (t/ha)	% Whero
KING	1.89	158			1.89	158
HELENA	1.86	155			1.86	155
91-148-*5-11	2.10	175	2.00	125	2.05	150
95-032-*14	1.96	164	2.02	127	1.99	145
COURIER	2.06	172	1.86	117	1.96	144
PSL 9	1.68	140			1.68	140
PARAFIELD	2.02	169	1.76	110	1.89	140
90-131-*27-7	1.83	152	1.85	116	1.84	134
PARAVIC	1.60	134			1.60	134
MIDICHI			2.08	131	2.08	131
PRL-M5			2.06	129	2.06	129
WAPPA 2015			2.02	127	2.02	127
SANTI	1.70	142	1.72	108	1.71	125
SOUPA	1.64	137	1.77	111	1.70	124
DUNDALE	1.53	128	1.90	120	1.72	124
BACCARA	1.84	154	1.41	88	1.62	121
92-104-*5-6	1.92	160	1.29	81	1.60	121
MORGAN	1.58	132	1.68	106	1.63	119
90-027-*32-5			1.87	118	1.87	118
CRUSADER			1.87	117	1.87	117
PRL-210			1.86	117	1.86	117
MUKTA	1.70	142	1.40	88	1.55	115
MARROWFAT	1.50	125	1.63	102	1.56	114
KASPA	1.74	146	1.29	81	1.52	113
PSM 5			1.79	112	1.79	112
90-158-*8-1	1.90	159	0.78	49	1.34	104
EXCELL	1.23	103			1.23	103
WHERO	1.20	100	1.59	100	1.39	100
PRL-220			1.11	70	1.11	70
Isd (0.05)	0.26		0.26			

Conclusions:

Despite lower yields this year, it is evident that the newer faba bean lines will play an important role as a break crop. Fiesta has yielded very well in trials (average of 5.9t/ha over last 5 years of trials at Symmons Plains). With such high yields there is scope to develop faba beans as a substitute for lupins in stock rations ie. ignore the seed size and colour characteristics required for human consumption markets and concentrate on yield and disease resistance. The broad bean cultivar Aquadulce and other lines have also continued to yield well and additional trials will be conducted in 2002-03.

Pea yields were overall disappointing and obviously suffered from the dry finish. The pleasing aspect was the performance of the marrowfat peas at Symmons Plains, in particular Midichi, which with good premiums over normal field peas should prove an attractive option. The results from other trials suggest irrigation will generally be necessary to ensure good seed size and quality in marrowfats.

Acknowledgements: GRDC, Andrew Youl, Rob Ling, Crosby Lyne
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