Faba Bean Variety Evaluation, Mallee, 2000

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SUMMARY

Faba beans remain an option for farmers in the southern Mallee if the crop can be sown in April or early May. The evaluation of faba beans in the southern Mallee in 2000 included commercial varieties and experimental lines with dual resistance to ascochyta blight and chocolate spot. The early maturing varieties Fiord, FiestaVF, Barkool and Deep Purple were the highest yielding varieties in 2000. Fiord, FiestaVF and Barkool are the best adapted varieties for low rainfall and short season environments of Victoria and have grain suitable for human consumption. FiestaVF has superior grain quality compared to the other varieties and attracts a premium (approximately $40 over Fiord in 2000).

To compare the performance of current and potential new faba bean varieties under low rainfall Mallee conditions.

BACKGROUND

A major objective of the National Faba Bean Improvement Program (NFBIP) is to develop and release a faba bean that is resistant to both ascochyta blight and chocolate spot, flowers early and produces high yields in the drier areas of southern Australia such as the Mallee. Improved disease resistance is expected to reduce the cost of fungicide applications and increase both productivity and grain quality.

METHOD

The Birchip trial was sown on May 5 with four replications. Sowing rate was varied according to seed size to obtain a target plant density of 20 plants/m2. Seed was inoculated with rhizobia (Faba bean, Group F) and sown 5cm deep. The trial was sown with 70 kg/ha of Grain Legume Super.

RESULTS

Table 1. 2000 and long term grain yields (% FiestaVF) of faba beans lines grown in the southern Mallee with comparative means for Victoria and the southern Mallee region.

	Birchip 2000	Warne 2000	Southern Mallee 2000	Victoria 2000	Southern Mallee 1999-00
FiestaVF (t/ha)	2.34	1.43	1.90	2.35	1.70
Aquadulce	84	79	86	92	78
Ascot	80	84	84	85	72
Barkool	100	102	107	86	97
Deep Purple	104	94	100	89	84
FiestaVF	100	100	100	100	100
Fiord	102	87	98	91	98
Icarus		51	74	79	74
Manafest	82	93	87	92	89
I*A15/2[a]	88		89	94	84
I*A56/1	94	89	90	102	96
I*A7/3	91	91	92	98	88
I*A7/4	96		95	92	95
I*A7/6	97	110	99	102	96
LSD (5%)	10	21			
CV (%)	7.7	15.7			

[a] I*A= Icarus x Ascot crosses designed to combine resistance to ascochyta blight and chocolate spot.

INTERPRETATION

The faba bean trials were sown early in May, an optimum time for the southern Mallee, and yields were good given the dry spring. The levels of ascochyta blight and chocolate spot were higher in the Mallee in 2000 compared to 1999.

The earlier flowering varieties Barkool, Fiord and Fiesta VF were the highest yielding varieties in the Mallee in 2000 and in long term comparisons (Table 1). Deep Purple was the highest yielding variety at Birchip in 2000 but its long term yield is lower than the other varieties and its purple seed is not preferred for human consumption. FiestaVF is a good option for this area as it has superior grain quality compared to the other varieties and attracts a premium (approximately $40 over Fiord in 2000).

The yield of Ascot was again poor in Victoria and the southern Mallee in 2000. The yields of the later flowering varieties Aquadulce, Icarus and Manafest are relatively low in the Mallee and they appear more suited to higher rainfall environments.

The Icarus*Ascot (I*A) selections tested have better resistance to both ascochyta blight and chocolate spot than commercial varieties and yielded 89 to 99% of FiestaVF in the southern Mallee in 2000. The availability of ascochyta blight and chocolate spot resistant lines will reduce costs associated with fungicide sprays and improve quality and reliability of yield. I*A56/1, the highest yielding line tested in Victoria in 2000, is being multiplied in South Australia by the national faba bean breeder and is likely to be the first dual resistant faba bean released in Australia.

COMMERCIAL PRACTICE

The early maturing varieties Fiord, FiestaVF, and Barkool are the best adapted faba beans for short season environments such as the southern Mallee. FiestaVF also has superior grain quality compared to the other varieties and attracts a premium (approximately $40 over Fiord in 2000).

The new variety Manafest, released by the National Faba Bean Improvement Program in 1999 and available to farmers in 2001, has not yielded well in areas with low rainfall and short growing seasons. Manafest may be a good option for farmers in the higher rainfall areas of Victoria, where it is well adapted to acid soils and has moderate resistance to chocolate spot.