

Faba bean varieties and disease management

Jason Brand¹

¹ DEPI Horsham, Victoria

Take home messages

- New varieties are likely to offer significant yield improvement in southern Victoria, along with improvements in disease resistance.
- Residual herbicide caused issues in 2013, most likely due to the dry summer of 2012/13.
- Similar to 2012, AF05095 was the highest yielding variety at 3.95 t/ha, 37% higher than Farah.
- Based on yields achieved (3.9 t/ha) beans could have achieved a gross profit of approximately \$1300/ha based on management costs of \$250/ha and grain price at \$400/t.

Introduction

The Southern Pulse Agronomy program undertakes a range of agronomic trials that ensures the benefits of new pulse varieties are maximised and delivered to growers. In south western Victoria, field peas and faba beans are generally perceived to be the lowest risk pulse crops for the region. However, uptake and overall production as a proportion of the total cropped area remains relatively low compared with other cropping zones. Potential reasons for these observations are varied, but generally relate to risks associated with disease and weed management and lack of profitability compared with other cropping options.

Similar to 2012, the trials presented here investigate a range of management options across the latest varieties and potential new releases in faba bean at Westmere, and investigate the effect of chocolate spot and rust management strategies across a range of faba bean varieties.

Experimental Treatments

Table 1. Varieties and fungicide regimes

Varieties	AF05069, AF05073, AF05095, AF06125, AF07125, Farah, Nura, PBA Rana	
Other Details	Sowing date: 2 May Stubble: Incorporated Row Spacing: 20 cm Fertiliser: MAP @ 60 kg/ha at sowing Plant Density: 20 plants/m ²	
Treatment	Chemical and Application Rate ¹	Timing
Nil	Nil	Nil
Double Choc (Cx2)	carbendazim 500 @ 500 ml/ha	Early and late flower
Triple Choc (Cx3)	carbendazim 500 @ 500 ml/ha	Early, mid and late flower
Complete (Com)	mancozeb 800 @ 2 kg/ha chlorothalonil 720 @ 2 L/ha carbendazim 500 ml/ha	mancozeb + chlorothalonil applied fortnightly from 6-8 weeks after emergence All 3 chemical applied fortnightly during flowering.
Rust (Rx2)	Tebuconazole 430 @ 350 ml/ha	6-8 weeks after emergence and early flower
Rust (Rx3)	Tebuconazole 430 @ 350 ml/ha	Early, mid and late flower

¹ Refers to application rate of the product

Results and Interpretation

Note - This trial was affected by residual herbicide damage, probably clopyralid. Symptoms were noted early in the growth of the crop, however, due to mild winter and spring conditions the crops recovered and produced adequate grain yields.

Disease Damage

There was very little disease observed in this trial in 2013 and it was unlikely to cause any yield loss or seed infection. Grain Yield - As none of the disease management regimes translated into any significant effect on grain yield, only the mean grain yield across all treatments has been presented (Table 2). Grain yields were excellent considering the herbicide residue damage observed earlier in the season, ranging from 2.7 t/ha to 3.9 t/ha. Similar to 2012, AF05095 was the highest yielding variety (3.94 t/ha), 37% higher than Farah. The ranking of varieties varied between

seasons and could be indicative of relative tolerance to the clopyralid residues. This data suggests that AF05069 and AF07125 could be slightly more sensitive than other lines compared.

Table 2. Grain yield (t/ha) of faba bean varieties grown at Westmere in 2013 in comparison to 2012.

Variety	2013	2012
AF05095	3.94	5.53
AF06125	3.40	4.49
PBA Rana	3.38	4.49
AF05073	3.32	5.00
AF05069	2.97	5.14
Farah	2.88	4.04
Nura	2.85	4.14
AF07125	2.72	4.49

LSD (P<0.05) 2013 = 0.30

LSD (P<0.05) 2012 = 0.37

Key Findings and Comments

Growing conditions in 2013 were good for faba beans after a relatively dry start to the season. It is unfortunate that this trial had significant residual herbicide damage, but it does highlight that given the right conditions, beans are able to recover and produce profitable yields. Adequate growing season rainfall and mild temperatures during flowering and podding periods with few frost or high temperatures was experienced. There were some concerns throughout the industry in early spring when it appeared that beans were not setting the initial pods, however later pod set was excellent.

Grain yield of the beans was excellent, considering the season and herbicide residues. Again several potential new varieties had yields significantly higher than Farah, with AF05095, 37% greater than Farah. Long term data across a range of environments from the breeding program indicates that AF5095 has yields 10% greater than Farah. It also has improvements in disease resistance. AF05095 along with other new varieties assessed in this trial are likely to offer significant yield improvements in southern Victoria, along with improvements in disease resistance.

Based on yields achieved (3.9 t/ha) beans could have achieved a gross profit of approximately \$1300/ha based on management costs of \$250/ha and grain price at \$400/t.

Field Pea Variety and Agronomic Guide - New varieties for 2014

There are no newly released varieties for 2014.

Refer to Appendix D for full faba bean variety and agronomic guide.