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Impact and Management of Faba Bean Aphids

Trial ID: DH2303 **Location:** Bellata **Trial Year:** 2023
Investigator: Dean Hancock

The faba bean aphid (*Megoura crassicauda*) is recent incursion into northern NSW and southern QLD faba bean production areas. The aphid was widespread in 2020 but with no information available on the production impact or the efficacy and economics of management strategies. This project was developed to generate data on the population dynamics of this aphid and evaluate the impact of insecticide seed treatments (Gaucho – imidacloprid and an alternative Group 4 A insecticide) or foliar insecticide (Aphidex – pirimcarb) strategies for field management.

The protocol was designed to evaluate:

1. Two seed treatments as a standalone treatments
2. Seed treatments followed with foliar insecticide - when the aphid population was starting to build i.e. seed treatments waning
3. Single application of foliar insecticide when aphid populations were building in the untreated
4. Foliar insecticide when aphid populations first started and a second application if aphid populations started to rebuild i.e. foliar insecticide waning

Trial sites were inspected for aphid presence on a fortnightly basis from crop emergence.

Objective:	To evaluate population dynamics of the faba bean aphid (<i>Megoura crassicauda</i>) and management strategies in faba beans
Crop & Variety:	Faba bean cv. Ayla
Planting Date:	5/05/2023
Planting Details:	Tyne planter on 32 cm row spacing and 120 kg/ha planting rate
Application Details:	Seed treatment (Application A, 13/04/2023): Gaucho 600FS at 120 mL/100 kg or an alternative Group 4 A seed treatment at 200 mL/100 kg. Seed treatments applied in a total volume of 4 mL/kg seed
Trial Design:	Randomised complete block of 7 treatments by 4 replicates
Plot Size:	12 m x 4 m
Keywords:	Faba bean, seed treatment

NB: No aphids were found up until early August. Foliar insecticide treatments were not applied and the trial was concluded before harvest. Only data generated was crop emergence.

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Crop			Faba bean cv. Ayla
Assessment Date			5/06/2023
Assessment Type			EMERGENCE
Assessment Unit			/m ²
Assessment Area			4 m Row
Planting-Evaluation Interval			31 DAP
Trt No.	Treatment	Product Rate	
1	Untreated	-	28.9-
2	Gaucho 600	120ml/100 kg	28.9-
3	Group 4 A	200ml/100 kg	29.1-
4	Gaucho 600*	120ml/100 kg	28.1-
5	Group 4 A*	200ml/100 kg	29.9-
6	Untreated*	-	32.0-
7	Untreated**	-	27.1-
LSD P=.05			nsd
Treatment Prob.(F)=			0.3752

Means followed by same letter or symbol (-) do not significantly differ (P=.05, LSD).

Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL.

nsd – no significant difference

*Aphidex 800 at 190 g/ha not applied

NB Treatment 7 was planned to receive two applications of Aphidex 900

DAP = Days after Planting

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Conclusions:

This trial was designed to evaluate management strategies and population dynamics of the exotic aphid (*Megoura crassicauda*) in faba bean. Faba beans cv Ayla were treated with either Gaucho 600FS at 120 mL/100 kg or an alternative Group 4 A seed treatment at 200 mL/100 kg in mid-April. The trial was sown on 32 cm row spacings using a small plot tyne planter at 22 DAA (22 days after Application A).

Faba bean emergence was assessed at 31 DAP (31 days after planting). There were no significant differences for plant stand between the untreated and seed treatment plots with populations ranging from ~27-32 plants/m².

The trial was inspected for insect activity regularly from early June until early August. No faba bean aphids were detected at any inspection and foliar treatments were not applied. The trial was concluded in early August.

Faba bean aphid populations failed to develop at this trial site where only a total of ~69 mm of rain was received in the first 14 weeks after planting. No data was generated on aphid population dynamics or the efficacy and economics of management strategies.

Application Description	
Application Date:	13/04/2023
Application Method:	Seed Treatment
Placement:	SEED

Rainfall:

Closest Weather Station:	Bellata
Distance:	5.4 km

Date	Daily Rainfall	Unit	Comments
13/04/2023	-		Seed treatment (Application A)
30/04/2023	33.6	mm	Monthly Total
5/05/2023	-		Planting
31/05/2023	0	mm	Monthly Total
5/06/2023	-		Faba bean emergence assessment
9/06/2023	8	mm	
13/06/2023	10	mm	
22/06/2023	17	mm	
2/08/2023			No aphid presence at any assessment, trial concluded