# Botanical insecticides and field margin vegetation in the management of aphids in Dolichos bean (*Lablab purpureus* L.)

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## INTRODUCTION

Dolichos bean (Lablab purpureus L.) multipurpose legume though underutilized (Maass et al., 2010).

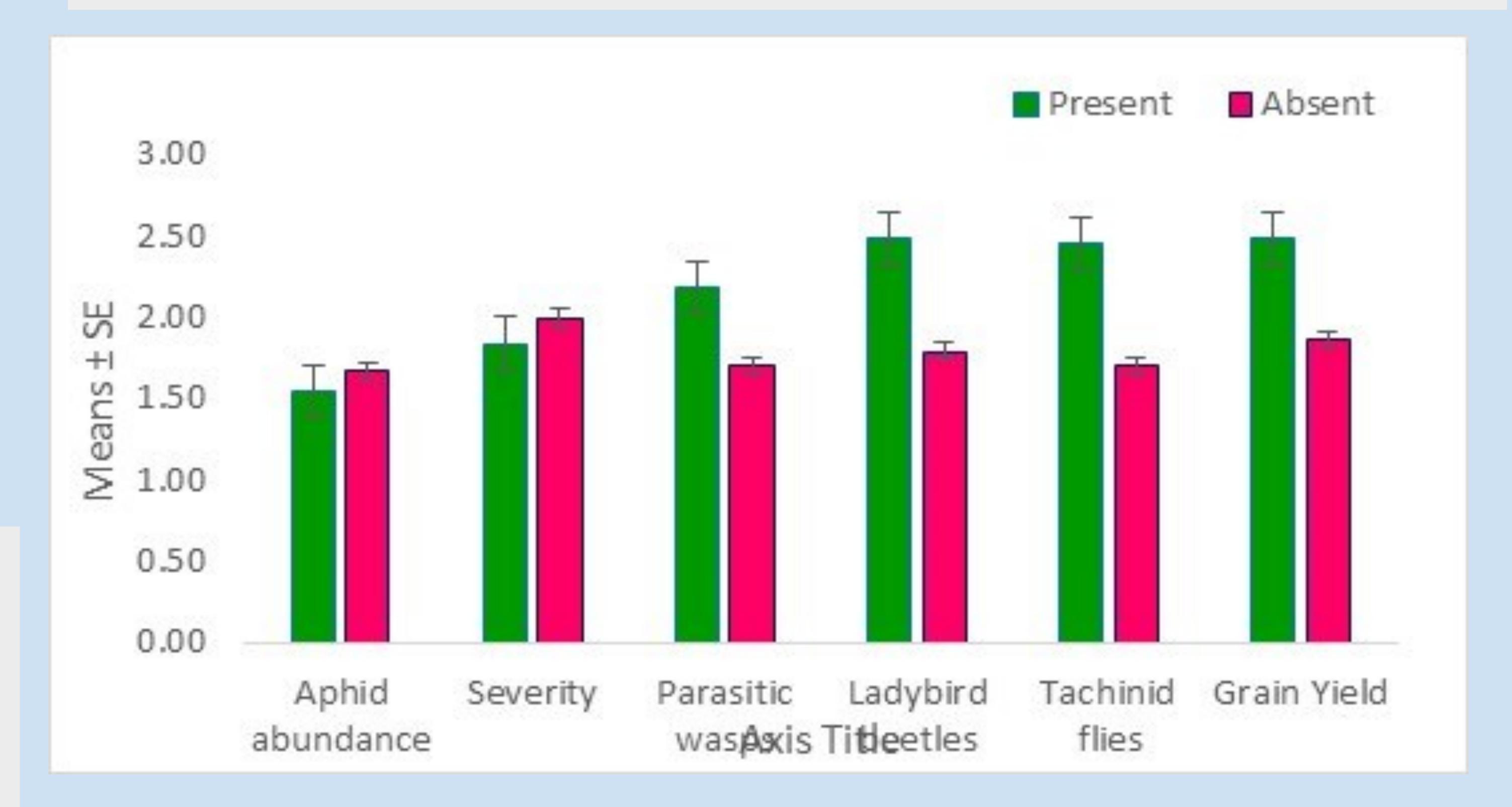
Black bean aphid, Aphis fabae (Scopoli) major insect pest, yield losses of 30% to 90% reported (Mwanuata et al., 2015).

Broad spectrum synthetic insecticides are widely used (Stevenson *et al.*, 2017).
 Need for alternatives that conserve ecosystems and biological diversity.

This study investigated integration of botanical insecticides and field margin vegetation in the management of aphids as well the abundance of natural enemies in dolichos beans.

# RESULTS

Plots with field margin vegetation had lower aphids, & severity of damage with higher NEs abundance & higher grain yield. (Fig. 3).



# MATERIALS AND METHODS

Study was carried out at Agronomy Research and Teaching field, Egerton University (latitude 0° 20' S and longitude 35° 56' E).

➢Plots 10m × 10m which were 10m apart.

- ➢Dolichos bean varietyDL-1002 was planted at a spacing of 60cm by 30cm.
- Treatments Pyerin 75EC<sup>®</sup>, Pyeneem 20EC<sup>®</sup>, Nimbecidine, positive control Duduthrin 1.75EC<sup>®</sup> and negative control
- untreated were laid out in RCBD, 4 replicates either in the presence or absence of field margin vegetation.
- Insecticides rates was as per the manufacturer's recommendation applied at 2<sup>nd</sup> trifoliate and 6<sup>th</sup> trifoliate

growth stages.





Figure 3. Effect of field margin vegetation on aphids, NEs abundance and grain yield of dolichos bean

Pyerin and Pyeneem plots had lower aphid infestation, more NEs abundance with yield comparable to Duduthrin (Fig.4).

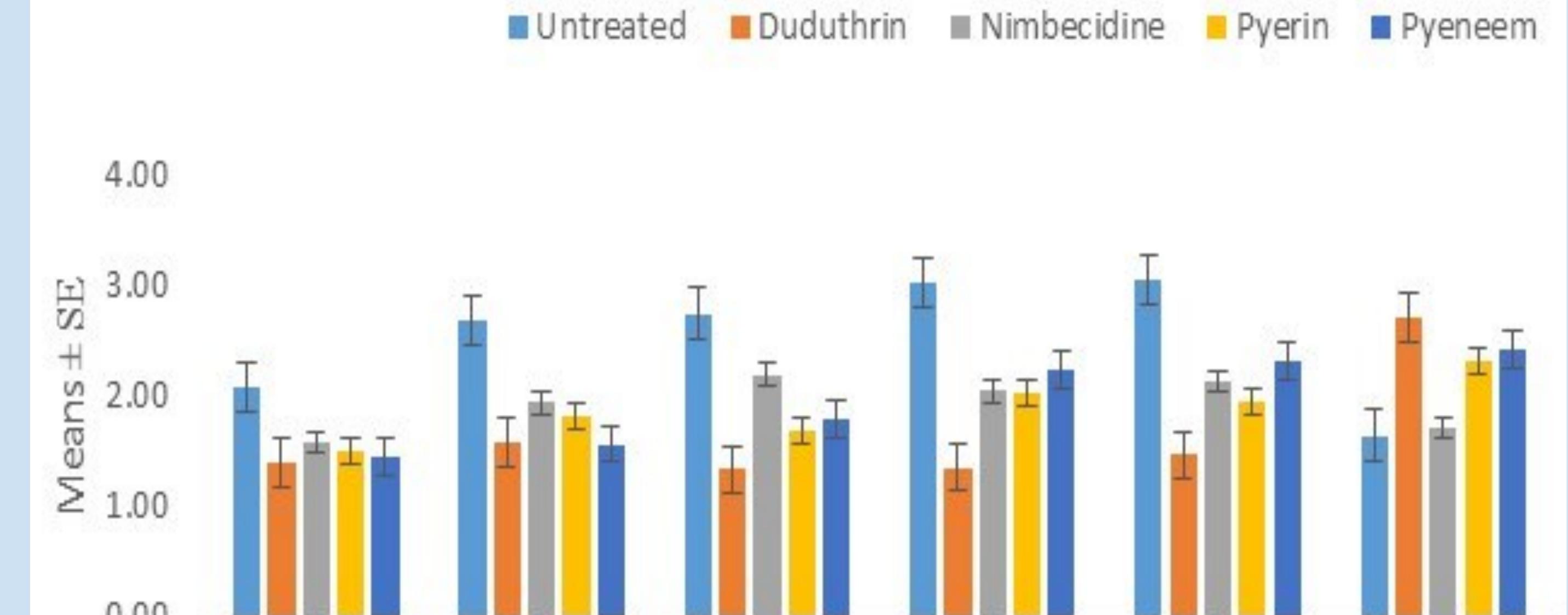


Fig. 1a Plots with margin vegetation

		3.2

Fig. 1b Plots with no margin vegetation

0.00							
	Aphid	Severity	Parasitic wasps	Ladybird	Tachinid flies	Grain yield	
	abundance			beetles			

Figure 4 Effect of botanical insecticides on aphids, NEs abundance and grain yield of dolichos bean

## Conclusion

Pyeneem and Pyerin shown good results both in reducing aphids infestation levels and least impact on natural enemy's populations.

# **Data Collection**

Scoring of aphid abundance, 0 = no aphids; 1 = A few scattered aphids; 2 = A few small colonies; 3 = several small colonies; 4 = Large isolated colonies; and 5 = Large continuous colonies

Severity 0 = No damage; 1 = Showing damage up to 25%; 2 = Damage from 26%-50%; 3 = Damage from 51%-75% and 4 = Damage more than 75%.

# Natural enemies sampling

Pan traps placed at crop centre and margin vegetation

## REFERENCES

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Fig. 2a Trap at crop centre



Fig. 2b Trap at margin vegetation

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## Acknowledgements





