Effect of Dolichos (*Lablab purpureus* L.) genotypes and field margin species on bean aphids' population and their natural enemies

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INTRODUCTION

➤ Legumes are among important dietary food crops providing most essential nutrients (Malaguti *et al.*, 2014).

➤ Dolichos bean (*Lablab purpureus* L.), commonly known as *Njahi*, is a pulse-vegetable crop with numerous health benefits.

➤ Major production constraints are biotic factors (Boit *et al.,* 2018). Aphids damage cause yield losses of 30% to 90% (Kamau *et al.*, 2010).

➤ Conservation of plant diversity is an emerging technology in controlling insect pests (Chun., *et al* 2016)

➤ Experiment was conducted to determine the effect of various genotypes on abundance & severity of aphids, and incidence of their natural enemies in Dolichos bean

MATERIALS AND METHODS

➤ The field were harrowed and ridged prior to planting. The experimental plots measured 3m x 2.5m and were 1.5m apart.

➤ Eighteen (18) genotypes were planted at Egerton University, with and without the field margin vegetation, in a randomized complete block design (RCBD) replicated four times.

➤ The site lies on this coordinates ˚22'11.0" S, 35˚55' 58.0"E (Latitude: -0.369734; Longitude:35.932779).

➤ The seeds were planted at a spacing of 60cm x 30cm

DATA COLLECTION

➤ Data on aphid abundance and severity was done by use of a scale.

➤ 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%.

Sampling of N.E on plots and field margins

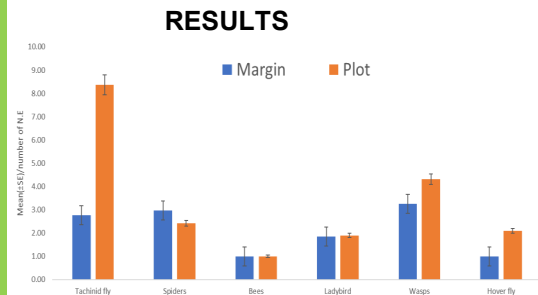**Pan Traps and Sticky Traps in the plots**

RESULTS

Fig. 1:Effect of field margin vegetation on population of natural enemies of aphids in different Dolichos genotypes

A total of 10 families of natural enemies were recorded; *Tachndae,Syriphidae,Sphecidae, Chalcididae, Ichneumonidae, Schlerosomatidae, Chrysopidae, Braconidae, Carabidae* and *Coccinellidae*. 8 orders of natural enemies; *Diptera, Hemiptera, Hymenoptera, Neuroptera, Aranae, Arachnida, Coleoptera & Dermaptera.*

Genotype	Days to 50% flowering	Yield(t/ha)	Bio-mass (t/ha)
Machakos I	85.00[d]	0.192[f]	0.469[d]
Machakos II	98.00[bc]	0.553[abcde]	1.592[ab]
Machakos III	98.00[bc]	0.470[abcdef]	0.720[cd]
Machakos Kiboko	101.00[abc]	0.345[cdef]	0.714[cd]
Eldo-KTL-Black I	100.00[abc]	0.600[abcde]	1.318[bc]
CIAT 22759	105.00[ab]	0.484[abcdef]	0.781[cd]
Echo Cream	101.00[abc]	0.715[ab]	2.097[a]
Brown Rongai	99.50[bc]	0.795[a]	1.140[bc]
Black Rongai	104.00[ab]	0.615[abcde]	0.935[cd]
CPI 81364	107.00[a]	0.658[abcd]	1.027[bcd]
DL1002	100.00[abc]	0.589[abcde]	0.961[bcd]
Kikuyu Mkt	102.00[abc]	0.680[abc]	0.805[cd]
Tx – 24	101.75[abc]	0.311[ef]	0.808[cd]
Q6880B	102.00[abc]	0.461[abcdef]	1.022[bcd]
Eldo KT Cream	103.00[ab]	0.396[bcdef]	1.048[bcd]
Kikuyu X-Meru	105.00[ab]	0.715[ab]	0.919[cd]
Eldo KT- BlackII	95.00[c]	0.337[def]	0.923[cd]
HA – 4	72.00[e]	0.197[f]	0.773[cd]

Table1: Means in a column followed by the same letter are not significantly different at P≤0.05 using Tukey's HSD test

REFERENCES

1.Boit *et al.*,(2018) Evaluating Kenyan Dolichos (*Lablab purpureus* L.) Genotypes .

2.Kamau *et al.*,(2010)Screening of local lablab (Lablab purpureus) accessions.

3.Malaguti *et al.*, (2014)Bioactive peptides in cereals and legumes: agronomical, biochemical and clinical aspects. *Internationa-*