ACKNOWLEDGEMENTS

I would like to extend my deepest gratitude to individuals and institutions that have contributed to the completion of this study. First and foremost, I am indebted to my principal advisor, Dr. Habte Tekie for his technical comments and feedbacks on my research proposal, field study and timely response and corrections during the thesis write up.

Many thanks to Dr. Getachew Tikubet my co-advisor for his quick and smooth administration in facilitating the field work. He was also involved in commenting on the research proposal and thesis draft.

I would like to thank Biofarm, ICIPE (International Center of Insect Physiology and Ecology) and Addis Ababa University Department of Biology for the financial and logistic support to this research.

I am very grateful to the staff of the BioEconomy and ICIPE for their encouragement and collaboration on the research. A special gratitude to Dr. Johan Bomgartner and Dr. Gianni Giloli for supplementing literatures and commenting on the fieldwork.

I would like to acknowledge Ato Luleseged Belayhun for his supervision and technical support to the field workers.

Finally I forward my immense gratitude to my family and also Blen Gulelat for their unwavering encouragement and support during my study.

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ABSTRACT

The study on the effect of manure application and other cultural practices on the infestation level and damage of *Thrips tabaci* on onion was conducted in Cheha Woreda, Luke Kebele of the Gurage Zone from December to April 2005. The field study was on the impact of manure application and plant spacing on the infestation level, damage, size and number of leaf and bulb yield were carried out on the demonstration site, and where as the effect of organic manure application on onion thrips density was based on cage experiments conducted using Complete Randomized Design (CRD) in five replications. The field experiments was performed using a Randomized Complete Block Design (RCBD) involving six treatments from a factorial combination of organic manure application, plant spacing and untreated controls.

The results on the effect of organic manure application on onion thrips density indicated that, the lowest number of adult and larvae *T. tabaci* was obtained from onions planted on soil with manure application before transplanting. The highest density of onion thrips was recorded from the untreated controls.

The investigation on the impact of manure application and plant spacing on the infestation, damage levels, size and number of leaves of onion revealed that starting from 45 days after transplanting treatments with before transplanting manure application (BTMA) at 20x30cm and 20x25cm showed lower mean count of thrips per plant, and highest leaf size followed by the treatment at transplanting manure application with 20x30cm plant spacing. The damage level was identified as mild at 15 and 30 days after transplanting and at older stages intermediate damage was recorded on most plants. On the other hand, the control treatments with 20x20cm and 20x25cm plant spacing had the highest infestation, with the smallest leaf

sizes and characterized by intermediate damage at early stages and sever attack as the crop matured.

The study on the effect of organic manure application in cage experiments, demonstrated that the lowest mean number of larvae and adults were obtained from manure application before transplanting followed by at transplanting manure application and the highest being the control with no manure application.

The survey on alternate host range of onion thrips in the study area showed that five cultivated vegetables, a cereal crop and one wild plant were found to harbor the insect pest on their leaves. The highest number of thrips per plant and percent total infestation was recorded from onion followed by Kale (*Brassica oleracea L.var acephala*) and wild Sorghum (*Sorghum arundinaccum*). Finally, the survey on impact of the system on the occurance of predatory beneficial insects showed that, three different generalist insects and spiders were encountered in the field feeding on onion thrips larvae and adult.

Finally, this study emphasized on a new strategy of managing onion thrips in which host plant spacing and nutrient management were integrated to suppress the pest population and improved the crop health and vigority to withstand the damage to a certain limit.