

## EFFECT OF INSECT DENSITY AND THRESHOLD CONCENTRATION OF NEEM OIL ON THE OVIPOSITION OF MAIZE WEEVIL, *SITOPHILLUS ZEAMAI* MOTSCH.

\*Masood Khan Khattak, \*\*Alberto B. Broce, and \*\*\*Barry Dover

\* Deptt: of Entomology, Faculty of Agriculture, Gomal University, D.I.Khan.

\*\* Livestock Entomology, Kansas State Univ., Manhattan, Kansas 66506, USA.

\*\*\* Stored Grain Insect Pest Section, Kansas State University, Manhattan, Kansas 66506, USA.

### ABSTRACT

When varying number of female weevils were held for 24 hours on constant 30 number untreated corn kernels, the number of eggs/female/day decreased with an increase in weevil density. Six to ten whole corn kernels were enough media for one female to fully express its ovipositional potential. Maize weevils laid significantly fewer eggs on corn kernels treated with 500 ppm or above as compared with that in the control both in choice and no choice tests.

### INTRODUCTION

Corn, *Zea mays* is a staple crop and is attacked by a variety of insect pests (Cox & Atkins 1979). Among these, maize weevil is distributed world wide and cause severe damage to corn prior to and after harvest. The female weevil examine the surface of the kernel with her antennae and proboscis, choose suitable site and chew a cavity in the kernel in which egg is laid (Hind & Turner 1911). The cavity is sealed off with a gelatinous egg-plug. One female can lay 300-400 eggs during her lifetime. The grubs feed inside the kernels pupate there and the adult come out of the kernel after 30-35 days through an exit hole.

Mostly synthetic insecticides are used for the control of these stored grain insect pests. The potential hazards of these chemicals to human health have urged to discover new classes of safer chemicals especially derived from sources like plants. These plant-based chemicals may be biodegradable, species specific, and less or non-toxic to non-target organisms as compared to synthetic insecticides. The most convincing among the plants is neem (*Azadirachta indica* A. Juss) which has been used for the control of insect pests of stored grains, vegetables, ornamentals, man and animals. The main insects being investigated as target for neem are larvae of Lepidoptera, some Coleoptera, Diptera, and Orthoptera (Schmutterer 1985). Besides its