

## EFFICACY OF CERTAIN PESTICIDES AGAINST *RHYZOPERTHA DOMINICA* (F.) AND *SITOPHILUS GRANARIUS* (L.) ADULTS AND THEIR RESIDUE LEVELS IN TREATED WHEAT GRAINS

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### Abstract

The effectiveness of Malatox (1%D), Chess ( 25%WP), Rizolex (10%D) and Ecotech Bio (10%WP) against the lesser grain borer, *Rhyzopertha dominica* (F .) and the grain weevil, *Sitophilus granarius* (L .) adults were evaluated in the laboratory. Direct treatments of wheat grains with the tested pesticides was effective on insects than sack treatments. Toxicity of the examined pesticides could be arranged in the following descending order : Malatox > Chess > Rizolex > Ecotech.Bio . The grain weevil *S. granarius* was more susceptible to the effect of four tested pesticides than the lesser grain borer *R. domainica*. All the tested pesticides reduced the (F<sub>1</sub>) progeny of the treated insects. High significant reductions in total carbohydrates and lipids obtained in body tissues of the two pests feed on LC<sub>50</sub> treated grains with four tested pesticides. The reduction in total proteins was insignificant in weevils only. The activity of transaminases (GOT and GPT) was highly reduced in *R.dominica* than *S. granarius* but this reduction in acetyl cholinesterase and amylase was insignificant in the two pests.

Quantitative analysis of Malatox (1% D Malathion), Rizolex (10 % D Tolclofos-methyl) and Chess (25% WP Pymetrozine) as active ingredient for residues in treated wheat grains were performed by GC and HPLC systems. High residues of pesticides were presented in unwashed grains while the washed grains contain very small residues of tested pesticides

**Key words :** *Rhyzopertha dominica* , *Sitophilus granarius* , Proteins, Carbohydrates, Lipids , enzymes, residue of pesticides in grains.

### INTRODUCTION

The granary weevil, *Sitophilus granarius* (L.) and the lesser grain borer, *Rhyzopertha dominica* (F.) are the most common pests of many kinds of stored grains. The two pests cause extensive damage to stored product materials and contaminated it with insect fragments, faeces, webbing, ill-smelling metabolic products and abundance of fungi growth (Barney *et al.*, 1995, Schnur, 1999 and Pajom, 2000).

A large proportion of stored cereal grain is protected against insect attack by insecticide that one good potential residues. Contact insecticide admixture with grain entering stores is widely used especially for stored wheat protection. Active