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Graduate School  
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The Thesis Submitted for the Degree of Master of Science  
(In the Field of Agricultural Entomology)

**Investigation on resistance of wheat varieties to  
Lesser Grain Borer, (*Rhyzopertha dominica*)  
and Rice weevil, (*Sitophilus oryzae*)**

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October 2012  
2012

## Abstract

Lesser grain borer, *Rhyzopertha dominica*, and *Sitophilus oryzae* is widely distributed in the world and it causes damage to stored products, specially stored grains. Damage caused by pest result in loss of seed weight and vigor. Damage and feeding rate of a above mentioned pest cause to seed weight and vigor. Damage and feeding rate of this pest was studied in 8 lines and cultivars such as: Kouhdasht, Zagros, Morvarid, Darya, Pastor, Line 17 and N-80-19, in an RCBD with a four replications under the stored condition. A hundred grams of wheat was placed in a crystal container and then 10 adults were put on each container. During seven months, nine times sampling was done and traits such as: seed weight, live adult, damage percent and weight loss percent were taken note. Results showed that all traits were significantly variant by sampling times and cultivars. Based on means of time of sampling, with increase in pest population, other related traits was increased. At the last sampling, means of live adults, damage percent, infection index and seed weight loss were 60.00, 48.18, 29.83 and 7.27 respectively. Zagros variety had the highest live adults, damage percent and infection index. Morvarid variety had the highest seed weight and the lowest seed weight loss and live adult. Pastor variety had the lowest seed weight and the highest seed weight loss percent. Experimental results based on insect traits (number of live insects, dead insects and the growth rate of the population) and seed traits (percent damage, pollution index and percentage of body weight) showed varieties resistant to pests studied were significantly different. The survey showed, zagros variety had highest sensitive *Rhyzopertha dominica* and morvarid were showed resistant, in comparison to *Rhyzopertha dominica*, having lowest loss of damage to wheat variety. In between wheat variety, Kouhdasht variety, showed sensitivity at line N-80-19 and highest resistance to *Sitophilus oryzae*. Reaction of both wheat variety by two pests was significantly different. In point of view line A in sensitive and Morvarid variety showed resistance to Nutrition, growth of *Rhyzopertha dominica* + *Sitophilus oryzae*.

**Key words:** *Rhyzopertha dominica*, *Sitophilus oryzae*, Plant Resistance, wheat variety