ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Effect of two local isolates of the bacteria *Bacillus thuringiensis tenebrionis* on lesser grain borer *Rhizopertha dominica.*

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ABSTRACT

In lab experments in year 2018 show the effect of two local isolates of B.t.t from Baghdad and Sulimaniyah governments on lesser grain borer *Rhizopertha dominica* the mortality with seven days from the procedures of treatment was 70.30% at seven days and 15 day was 76 , 46.6% respectively on adult . when the effect at Entmopathogenic bacteria *B.t.t* on larvae of *Rhizopertha dominica* was 50 , 33.3 % mortality respectively . in comparative with standard mortality of larvae was 30% after 7 days and total mortality was 66.6% after 15 days .

Keywords: *Bacillus thuringiensis tenebrionis, Rhizopertha dominica*

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ISSN: 0975-8585

INDRODUCTION

Rice (*Oryza sativa*) is consider second crops for his important to feed human because his contents for carbohydrates ,rice crops and seeds attack from many pests cause losses in yeld about 11-15 million ton in india (Kumar et.at.2013) . the lesser grain borer *R. dominica* is on of important insect that attact rice (jood .et.*at* 1996) . This insect of the primary pests that affect the grain because moth part is strong and effective to damage grains it inveation all stored products in the world and it was dangerous in tropical and sub tropical region (Edde2012).

The control of this insects is defecult because the larvae was in side grain and the adult and larvae cause damage because of feeding , so to control it used gases like phosphine but the insect consist resistant against it (Lorini and Galley.1999). The pest resistance all organo phosphorus pesticides (Chaudhry 2000). In the year 1982 ,Huger et.at .discover the sirovar type of Entomopathogenic bacteria *Bacillius thuringiensis tenebirion* its special infect coleopteron insects (Krieg et.at .1983) . so in this study to used this strain of Entmopathogenic bacteria to control an important storage insect the lesser grain borer *R. dominica* we used an local isolates from this specialized Entmopathogenic bacteria isolate from Iraqi soil.

MATERIAL AND METHODS

The experiment was done in entomology lab college of Agriculture –Baghdad university in 2017-2018 we cultured the insect in plastic jar put in it rice seeds infected with the lesser grain borer *R. dominica* put in incubator at 28 ± 2.

The Entomopathogenic bacteria isolates from soil of Baghdad and Sulimaniyah governarate by removed the surface soil to 5 cm and took the soil by Sterile knife 20 gram of soil Transfer to clean plastic sac but ite referegedator while we used .

We used Traves et.*at* (1987) method to isolate the Entomopathogenic bacteria specialley *Bacillius thuringiensis* we took 0.5 gram from each soil sample (4 samples)but it in conical flask size 125 ml contain 10 gram nutrient broth with 0.25 ml sodium acetate in shaker with 250 rpm/ minute for 4 hours , then treated in heat 80 c for 3 mints to kill vegetative cell germinate for Entomopathogenic bacteria , transfer 0.1 ml from Suspension which treated Thermally distributed on nutrient agar in Petri dish and incubated in 30 c for 48 hour then check the colony and purification the check up it in light microscope then he *Bacillius thuringiensis* colonies . then used in three concentration (2.8×10^2, 2.8×10^4, 2.8×10^6 CFU \ ml) to control larvae and adults of lesser grain borer *R. dominica* . by spraying the Entomopathogenic bacteria suspension on grilled rice seed directly in three replication to each treatment and control sprayed with distal water only .

Then check mortality for 1,2,3,4,5,6,7 day after treatment and the last record after 15 days .used standard stream from Bacillus Genetic Stock Center oheio state u.s.a which have genetic no 4AA1.

DISCUSION AND RESULT

Table (1) show that mortality rise with day the highest was 40% in 7 days at treatment of Baghdad isolate when it 30% in sulymania while in control was zero % . The total mortality percent was 50, 33.3% in Baghdad and sulymania isolate respectively .Abdullah (2013) used Entmopathogenic bacteria *B.t* on *tribolium castaneum* the mortality was 27.14%after 72 hours from treatment , when Oppert (2010) used *B.t teneberion* to control larvae of *Tribolium molitor* the mortality was 44%after 7 days from treatment and it was 65% after 14 days from treatment

ISSN: 0975-8585

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RESULTS

The local strain was *B. t. tenebrionis* because it killed larvae and adults coleopteran insects and this strain Specialized on coleopteran insects only.

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