IOBC-*WPRS*

12th Conference of the Working Group

Integrated Protection of Stored Product

Program
&
Book of Abstracts

Pisa, Italy

3 – 6 September 2019

Editors
Barbara Conti, Pasquale Trematerra

Insecticidal efficacy of commercial formulations of diatomaceous earth and neem oil against *Sitophilus zeamais* (Motschulsky) (Coleoptera: Curculionidae) on stored sorghum

Marco A.G. Pimentel[1], Simone M. Mendes, Cicero B. de Meneses, Deyse K.S. Fernandes, Ivênio R. de Oliveira, Rafaela A. Cota
[1]*Embrapa -Brazilian Agricultural Research Corporation, Minas Gerais, Brazil*
e-mail address: *marco.pimentel@embrapa.br*

Residual insecticides are widely used to protect stored grain in Brazil against insect pests. On-farm and in large storage units, increases the frequency of control failures and, consequently, increases the demand for protection alternatives, especially for sorghum, due to few insecticides' registries. The objective of this work was to evaluate the efficacy of formulated products based on the neem oil and diatomaceous earth (DE) on *Sitophilus zeamais*, relative to the efficacy of residual insecticides, and estimated the losses by infestation. Adults of *S. zeamais* were expose to sorghum grains sprayed with nine different insecticides at different doses and mixed with DE on two doses for 10, 30 and 110 storage days. The pirimiphos-methyl on both doses and mixture with bifenthrin had 100% mortality in the three storage periods. DE was efficient in the control of *S. zeamais*, with mortality higher than 94% after 10 days of storage on both doses. Neem oil formulated products had 51% maximum mortality at 10 days and decline to 110 days of storage. The maximum percentage of grain loss was 21.7% after 100 days of storage on grains treated with neem oil formulated product, while the lowest grain loss was in the grains treated with pirimiphos-methyl. Treatments with higher percentages of losses showed lower mortality with poor protection of sorghum grains. Application of a DE product is an alternative to residual insecticides in the management of stored grain pests in sorghum storage.

Key words: maize weevil, inert dusts, botanic oils, chemical control, grain storage