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BOOK OF ABSTRACTS

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SPINOSAD APPLICATION FOR PEST MANAGEMENT OF STORED WHEAT

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Abstract

In the condition of low insecticide efficacy, *Rhyzopertha dominica* F. can affect particular changes in physical and chemical grain composition, since the whole pest life-cycle is spent feeding on kernel endosperm. Therefore, this research aimed to determine the insecticidal activity of Spinosad, an insecticide a.s. of natural origin, on *R. dominica* mortality, progeny emergence and some wheat chemical traits (moisture, protein and ash content). Wheat samples were treated with Spinosad in amounts of 0.25; 0.5 and 1.0 mg a.s. kg^{-1} of wheat grain. After 24 h, 25 adults of *R. dominica* of both sexes were released into each vessel. Insect mortality was determined by manually removing from the infested wheat after 7 and 14 days of exposure. Ten weeks after treatments, progeny emergence and progeny reduction were designated. Spinosad application in the lowest dosage, after seven days of exposure, affected mortality from 94.5% to 100%. Spinosad applied at 1 mg kg^{-1} caused a 100% mortality. The mortality of *R. dominica* adults after 14 days exposure period was 100% after the application of the three doses. Ten weeks after grains treatment, all the Spinosad dosages prevented infestation. Spinosad application in all examined dosages did not lead to grain damage. Damaged grain and dust in Spinosad treated samples were not recorded, which represent the ideal small grain protection. There was no determined impact of examined insecticide on particular chemical traits. All established changes were due to the activity of *R. dominica*. Spinosad has been identified as a promising alternative to stored-grain protectants.

Keywords: *wheat, Rhyzopertha dominica* F.*, Spinosad, insecticidal activity, grain properties.*