

**EFFECT OF SPINETORAM ON ORIENTATION OF *Tribolium castaneum*
(HERBST) (COLEOPTERA: TENEBRIONIDAE) ADULTS TO
PHEROMONE TRAPS**

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Red flour beetle, *Tribolium castaneum* is a serious cosmopolitan stored-product pest. Commercial pheromone traps baited with its aggregation pheromone 4, 8-dimethyldecanal (4,8 DMD) have low trapping efficiency. Effects of biorational insecticides on orientation of *T. castaneum* has reported but no such investigation has been carried out using spinetoram. Therefore, the objective of current study was to determine the effect of spinetoram on trap catch of *T. castaneum* adults. Experimental design was a Completely Randomized Design with four replicates. The first experiment tested attraction of *T. castaneum* adults pre-exposed to spinetoram to the pheromone traps under laboratory condition. In the second experiment, orientation of *T. castaneum* adults pre-exposed to spinetoram to the pheromone traps was assessed under warehouse condition. Square roots of arcsin transformed values of percentage adults trapped were analysed using One-way ANOVA procedure to determine the significance of treatments of both experiments. Under laboratory condition, the trapping of adults pre-exposed to spinetoram were significantly differed ($p < 0.001$) from the respective control at each concentration. The highest trap catch (57.3%) was recorded in beetles exposed to 31.25 ppm of spinetoram. The lowest trapping was observed in adults pre-exposed to 62.5 ppm, while 0 ppm (control) showed no significant difference between 62.5 ppm of spinetoram. Under warehouse condition, the highest trap catch was recorded in beetles exposed to 31.25 ppm of spinetoram which showed no significant difference with 46.87 ppm. The lowest trap catch was recorded in adult beetles pre-exposed to 62.5 ppm while showed no significant difference between 0.0 ppm in warehouse condition. This study concludes that pre-exposure to spinetoram enhances the orientation of *T. castaneum* adults to pheromone traps baited with 4, 8-DMD at 0.5 μ L. Furthermore, this enhanced trap catch may resolve reduced trapping efficiency in commercial pheromone traps.

Keywords: 4,8- dimethyldecanal, Aggregation pheromone, Pheromone traps, Spinetoram, Trapping percentage, *Tribolium castaneum*