PRE-EXPOSURE TO SPINETORAM, FLOOR CONDITION AND TRAP COMPOSITION AFFECT TRAP CATCH OF *Tribolium castaneum* (Herbst) (COLEOPTERA: TENEBRIONIDAE) ADULTS

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Tribolium castaneum is a destructive pest of stored food. The aggregation pheromone 4,8-Dimethyldecanal (4,8-DMD) alone or with kairomones attracts them in traps, however, the efficacy varies with insect pre-exposure and storage conditions. Pre-exposure to the bacterial formulation spinetoram increases trapping on a clean floor yet different flour types on floor may alter the trapping. This research evaluated the impact of pre-exposure to spinetoram, flour type on floor surface and chemical composition inside traps on the trap catch of *T. castaneum* using a completely randomized design with four replicates. Each experiment used 100 *T. castaneum* adults pre-exposed to a given spinetoram concentration. In experiment 1, pheromone-baited traps were placed along boundaries of rectangular (2.6 m x 2.0 m) experimental arena with wheat flour or rice flour on the floor. One hour later, adults were released at the centre and those trapped were counted following 2 h. The experiment 2 tested the orientation of *T. castaneum* adults to traps having different combinations of pheromone and kairomone and wheat flour or rice flour on floor in the same experimental arena. Percentage adults trapped were arcsine transformed and analysed using ANOVA. In experiment 1, the highest trapping 50.8% occurred in adults pre-exposed to 31.25 ppm spinetoram and rice flour on the floor. The lowest trapping 16.5% occurred with 0 ppm spinetoram (control) exposure and wheat flour on the floor. In experiment 2, the highest trapping 59.8% occurred when pheromone combined with kairomone (without flour on the floor) whereas the lowest (28%) was with kairomone alone and wheat flour on the floor. This study concludes that trapping of *T. castaneum* adults on different floors can more precisely be estimated by pre-application of spinetoram. Further, correct choices of 4,8-DMD and commercial kairomone inside traps would serve as suitable monitoring tools for *T. castaneum* in feed mills.

Keywords: 4,8-dimethyldecanal, Kairomone, Red flour beetle, Rice flour, Wheat flour