

**EFFECTS OF SPINOSAD AND SPINETORAM ON THE  
INFESTATION BY *Tribolium castaneum* (COLEOPTERA:  
TENEBRIONIDAE) IN HARVESTED CASHEW NUTS**

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Cashew (*Anacardium occidentale* L.) nuts are nutritional food consumed as raw cashew nuts (RCN) or dehydrated cashew kernels (DCK). The infestation of cashew nuts during storage by *Tribolium castaneum* causes quantitative and qualitative losses. Absence of proper control methods impose drawbacks for loss prevention. Spinosad and spinetoram are effective against stored-product insects but has not been tested for population management in cashew nuts. Objectives of this study were to determine the success of spinosad and spinetoram in reducing *T. castaneum* infestation in stored cashew nuts. The experiment was three-factor factorial, completely randomized design. The RCN and four DCK grades (wholes, splits, LWP, Babybits) were sprayed with spinosad (1-25ppm), spinetoram (15.625-62.5ppm) or distilled water (control). Twenty *T. castaneum* late instar larvae (16 days old) were introduced to 50 g of each cashew grade and maintained under ambient environmental conditions (32°C, 65%RH). The readings were taken at 14, 21, 35 and 114 days following infestation. The data were analysed using ANOVA procedures of SAS. For a particular DCK grade or RCN, larval mortality, pupal emergence, adult emergence and progeny production significantly differed ( $p < 0.05$ ) between two insecticides and among different concentrations of each insecticide. For a given RCN or DCK, larvae, exposed to spinetoram recorded higher mortality (94% <) than spinosad (maximum:32.5%) at 14 days after introduction. Spinetoram was more effective than spinosad in reducing pupal emergence (1.25% in RCN, wholes, splits), adult emergence (1.25% in wholes and splits), and progeny production (0.75% in wholes), at 21, 35, 114 days, respectively following infestation. Alterations in the tested parameters followed a dose response. This study concludes that both spinetoram and spinosad protect stored cashew nuts from *T. castaneum* infestation. Spinetoram is more effective than spinosad. Future studies under warehouse conditions are required to determine the success of practical applications of these insecticides.

**Keywords:** Dehydrated cashew kernels, Larval mortality, Progeny production, Pupal emergence, Raw cashew nuts