## EFFICACY OF SELECTED INSECTICIDES AGAINST EGGS OF *EUSCHISTUS SERVUS* (SAY) AND ACROSTERNUM HILARE (SAY) (HEMIPTERA: PENTATOMIDAE) AND THE EGG PARASITOID, TELENOMUS PODISI ASHMEAD (HYMENOPTERA: SCELIONIDAE) A.L. Koppel

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## Abstract

Brown (Euschistus servus) and green (Acrosternum hilare) stink bugs are major pests of many crops. Although various insecticides are commonly used to control nymphs and adults, little is known about how they affect eggs. Laboratory bioassays and field trials were conducted to determine insecticide efficacy against developing stink bugs and parasitoids in healthy and parasitized stink bug eggs. Egg masses were obtained from lab-reared colonies established from field collections of adults. Common field rates of acephate,  $\lambda$ -cyhalothrin, spinosad, and thiamethoxam were tested on healthy brown and green stink bug eggs, as well as eggs parasitized by T. podisi. In the bioassay, egg masses were dipped into insecticide/water solutions for one second and assessed for mortality after two weeks. For the field trials, treatments were randomly assigned to field plots using a randomized complete block design. Egg masses were pinned to leaves in each plot, and pesticides were applied using standard field application equipment. Eggs were returned to the laboratory after 24 hours, and mortality was assessed after two weeks. Acrosternum hilare developing in eggs which were dipped experienced greater mortality when exposed to insecticide than water (ANOVA: F = 71.6; df = 4; P < 0.0001; Fisher's Exact: P < 0.0001); however, there were no significant differences between treatments in the field. Developing parasitoids in brown stink bug eggs showed almost 100% mortality when exposed to all insecticide treatments, when dipped or field-treated, and mortality was significantly greater when compared with water (F = 11.96; df = 4; P < 0.0001 dip test). When placed in the field and treated with spinosad or lambda-cyhalothrin, T. podisi had a slightly increased mortality compared to other treatments (F = 19.93; df = 4; P < 0.0001). There were no significant differences among treatments for developing E. servus embryos in both the laboratory and the field.