Survival of Selected Generalist Predaceous Insects Exposed to Insecticide Residues on Cotton

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Cotton insect management should include conservation of natural enemies of major pests. This study was conducted to determine residual effects of commonly used insecticides on two predators of two major cotton pests, the tobacco budworm [*Heliothis virescens* (F.)] and the cotton bollworm [*Helicoverpa zea* (Boddie)]. Survival of the bigeyed bug, *Geocoris punctipes* (Say) (Hemiptera: Lygaeidae), and the hooded beetle, *Notoxus monodon* (F.)(Coleoptera: Anthicidae), was observed after exposure to residues of insecticides applied to cotton in 1992 and 1993 in Florence, SC. The predators were introduced into cages and exposed to residues for 48 h in cotton 4 h after field application. The insecticides included organophosphates (sulprofos, profenofos, and acephate) and carbamates (methomyl and thiodicarb), alone and in combination with the formamidine amitraz, an ovicide. A commercial formulation of a biological insecticide, *Bacillus thuringiensis* subsp. *kurstaki*, was applied only in combination with amitraz, and the pyrethroid cyhalothrin was applied alone. Survival of *G. punctipes* was significantly less in acephate, acephate + amitraz, profenofos + amitraz, and cyhalothrin than in the untreated check in one or more years. Treatments containing organophosphates and thiodicarb were toxic to *N. monodon* as was *B. thuringiensis* + amitraz. The use of selective insecticides may result in the preservation of important natural enemies.