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## Susceptibility of Fall Armyworm Collected from Different Plant Hosts to Selected Insecticides and Transgenic Bt Cotton

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The fall armyworm, *Spodoptera frugiperda* (J. E. Smith), is a destructive pest of many agricultural crops throughout the southern USA. Populations of the fall armyworm that feed on different plant species can be classified as genetically differentiated host-associated strains: a corn (*Zea mays* L.)-associated strain that feeds primarily on corn and a rice (*Oryza sativa* L.)-associated strain that feeds primarily on forage grasses and rice. Although details are limited, differences in susceptibility to insecticides have been reported between the two fall armyworm host-associated strains. Our objective was to determine the relative susceptibilities of fall armyworms collected from different hosts to common cotton insecticides and transgenic *Bacillus thuringiensis* Berliner (Bt) cotton. Technical grade insecticides including cypermethrin {(1)-cyano-3-phenoxybenzyl (1)-*cis*, *trans*-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate}, methyl parathion {O,O-dimethyl O-(4-nitrophenyl) phosphorothioate}, and methomyl {S-methyl N-[(methylcarbamoyl)oxy] thioacetimidate} were applied topically to third instars collected from field corn and various forage grasses. Fall armyworms collected from forage grasses were significantly more susceptible to all insecticides tested than any of the collections from field corn. In a separate experiment, neonate larvae originally collected from bermudagrass and field corn were fed on conventional and transgenic Bt cotton. Fall armyworms collected from bermudagrass were significantly more susceptible to Bt cotton than larvae collected from field corn. Our data show that differences in larval susceptibility to commonly used cotton insecticides and transgenic Bt cotton appear to be related to the host-associated strains of the fall armyworm. Therefore, future management of this pest on cotton may need to address the susceptibility of fall armyworm host-associated strains before insecticide recommendations on cotton are considered.