COMPARATIVE PEST MANAGEMENT ON TRANSGENIC (NUOPAL) AND CONVENTIONAL (DELTA OPAL) COTTON


Abstract

A comparison of pest management was drawn between two cotton cultivars, NuOpal (with the cry1Ac gene) and DeltaOpal (nearly isogenic), at the Ceres Consultoria Agronômica's Experimental Field, in Primavera do Leste – Mato Grosso, during the 2007-2008 cropping season. The objective was to produce field reference data on the management of insects or mites not targeted by the Cry1Ac toxin. It was devised as follows: random ranges of fifteen 136 m-long rows of each cultivar with four repetitions. The management was that of a standard commercial production unit of the region, including pest and disease monitoring of 40 plants by range up to 43 days old and 25 after that age, twice a week until 80 days old and once a week after that, due to the frequent control of the boll weevil. The threshold levels adopted were those recommended by Ceres. The populational fluctuation of Spodoptera frugiperda and Pectinophora gossypiella adult males was observed using five and four pheromone traps, respectively. A light trap was placed for other species. Two thousand and eight hundred green bolls (7 collections x 400 bolls) were analyzed per cultivar. The results demonstrate that the toxin is effective in controlling its target pests Alabama argillacea, Heliothis virescens and Pectinophora gossypiella. Chemical control was necessary for the non-target Lepidoptera, mainly Pseudoplusia includens and Spodoptera eridania, the last one having required one insecticide application on the Bt cultivar. On four surveys, the NuOpal cultivar had a significantly lower number of caterpillars than the DeltaOpal. The peak of Pseudoplusia includens coincided with the end of the soy-bean harvest (February/March) indicating the pest's migration. The same management was adopted for other insects and mites.

Keywords: Bt Cotton, management, non-target pests, Brazil