Transgenic cotton (gossypium hirsutum) and its relation to the entomological fauna biodiversity in the Comarca Lagunera, Mexico

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Genetically modified organisms frequently generate environmental controversy. In Mexico, Cotton is grown in 115,496 Ha, while in the Comarca Lagunera Region (CLR) cotton is planted in about 24,274 Ha and from them 96% are transgenic cotton. There is evidence that other insects can be affected with the transgenic cotton, especially in the same family of Lepidoptera. The pests are not the only insects in the crop, must have a diversity of insects; therefore, pink bollworm resistance may occur in other insects, and can cause damage to the environment.

The objective was to develop a list of insects present in the transgenic cotton in the CLR of Mexico. The evaluation was conducted in 2011 (may-august) in two counties: San Pedro, Coahuila (SPC) (25.49°22.4" y 103°13´19.1") and Gomez Palacio, Durango (GPD) (25°45´29.6 y 103°26´14"). An experimental plot of 2 hectares planted with genotype Deltapine 0935 was used in each county. Sampling was made weekly with an entomological net and we reviewed 100 plants; were put five pitfall traps and yellow sticky traps. Identification of insects was made with existing keys in agricultural biology laboratory of the faculty of biological sciences. There were 98 and 105 different species of insects of 10 and 8 orders for the SPC and GPD, respectively. Orders were Hemiptera, Coleoptera, Diptera, Hymenoptera, Orthoptera, Neuroptera, Dermaptera and Lepidoptera in both locations; Blatodea and Mantodea were found only in SPC. 49 families were found. Eight and fourteen species of Lepidoptera were present for the SPC and GPD, respectively; families were Noctuidae, Hesperidae and Nymphalidae. The conclusion is that there are differences between the two locations in the Comarca Lagunera, and it is important to take special interest in family Lepidoptera, but especially think that pink bollworm resistance would cause loss of entomofauna.

Keywords: Insects, Bacillus thuringiensis, monsanto, enviromental risk