Transgenic cotton (gossypium hirsutum) and its relation to the biodiversity of plants 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 a crop plants can be crossed with wild plants and weeds, especially in the same botanical family, cotton is a malvaceae; therefore, glyphosate resistance in wild species can occur, and may cause environmental damage. The objective was to develop a list of weeds and plants present in the transgenic cotton in the CLR of Mexico. The evaluation was conducted in 2011 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. All plants and weeds were collected within the experiment area and up to 10m from the edge. The specimens were pressed, dried and identified in the laboratory of agricultural biology-FCB UJED. There were 47 and 67 different species of plants for the SPC and GPD, respectively, of 16 botanical families such as: Poaceae, Asteraceae, Amaranthaceae, Chenopodiaceae, Euphorbiaceae, Malvaceae, Compositae, Solanaceae, Asclepiadaceae, Fabaceae, Convolvulaceae, Nyctaginaceae, Ranunculaceae, Zygophyllaceae, Cyperaceae, and Brasicaceae; 23 species were found in both locations. Four species of the family Malvaceae were present in the CLR: Malvastrum coromandelianu, Sphaeralcea angustifolia, Anoda cristata and Sida hederacea; M. coromandelianu and S. angustifolia in both locations, while, A. cristata and S. hederacea were found only in GPD. 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 Malvaceae, but especially think that glyphosate resistance would cause loss of biodiversity

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