SWEET CORN CULTIVAR TOLERANCE TO MESOTRIONE. John Masiunas, Department of Natural Resources and Environmental Sciences, University of Illinois, Urbana, IL 61801, Christy Sprague, Department of Crop Sciences, University of Illinois, Urbana, IL 61801, Loyd Wax, United States Department of Agriculture, Agriculture Research Service, Urbana, IL 61801, and David Thomas, Syngenta, Champaign, IL 61821.

Weed control in sweet corn is problematic relying extensively on atrazine with few POST herbicide options. Atrazine use is being restricted in many sweet corn production areas because of concern about water contamination. Sweet corn cultivars also differ in tolerance to registered POST herbicides such as 2,4-D, dicamba, and nicosulfuron, limiting use of those herbicides. Mesotrione could provide an important replacement for atrazine and could fill some of the POST herbicide voids in sweet corn. The objective of our research was to determine if sweet corn and popcorn cultivars differed in their tolerance to PRE or POST applications of mesotrione. The experiment was a split plot design with four replications. The sweet corn or popcorn cultivars were the whole plot treatments and herbicides were the sub-plot treatments. Five sweet corn cultivars, 'GH 2547', 'GH 2684', 'GH 7749', Bonus, and 'Kandy Korn', and two popcorn cultivars, 'Weaver hybrid 1' and 'Weaver hybrid 2' were evaluated for their tolerance to mesotrione. Neither A12909 or A12854 applied PRE injured the sweet corn or popcorn compared to the atrazine and s-metolachlor control. One week after POST applications of mesotrione at 48 g/ha, the treatments with UAN caused more bleaching than the treatment with only COC. Mesotrione at 97 g/ha caused approximately 20% phytotoxicity on 'Bonus' and 'GH 2684'. Neither the other sweet corn cultivars ('GH 2547', 'GH 7749', and 'Kandy Korn') nor the popcorn cultivars were not significantly injured by mesotrione at 97 g/ha. By four weeks after treatment, all cultivars had recovered from injury and no treatment reduced corn height. Mesotrione did not reduce the number and weight of sweet corn or popcorn ears, thus not reducing yield. Ear quality (size, blanking, tip fill, husk cover) also was not effected by mesotrione. Thus, mesotrione has good safety on the sweet corn and popcorn cultivars included in this study.

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