SWEET CORN VARIETAL TOLERANCE TO MESOTRIONE. John Masiunas, Jerry Pataky, Christy Sprague, Marty Williams, and Loyd Wax, Associate Professor and Professor, University of Illinois, Urbana, IL 61801, Assistant Professor, Michigan State University, East Lansing, MI and Research Agronomists, USDA-ARS, Urbana, IL 61801.

New options are needed to manage weeds in sweet corn. Broadleaf weed control in sweet corn relies on applications of atrazine. Several problems exist with the use of atrazine. Important weeds such as *Amaranthus* species and common lambsquarters (*Chenopodium album*) have developed resistance to atrazine. Atrazine can persist, limiting the crops that can be planted the following year. The herbicide has also been found in surface and ground waters. Other registered herbicides such as 2,4-D, halosulfuron, and nicosulfuron can injure sweet corn or varieties vary in their tolerance. Mesotrione may be an alternative to atrazine. The objective of our research was to determine if sweet corn cultivars differ in their tolerance to mesotrione. Approximately 150 sweet corn varieties were evaluated. About 10% of the varieties were extensively injured by mesotrione. Many of the varieties had common inbred parents, suggesting a genetic basis for the susceptibility. Rate responses were conducted for eight cultivars differing in their tolerance to mesotrione. Mesotrione at standard field rates caused greater than 50% injury and reduced yields of Shogun, Gallant, How Sweet It Is, and Polaris. Including atrazine with mesotrione did not increase the injury. GH7749, GH2547, GH2684, and Bonus had less than 10% injury and yields were not reduced. When registered, tt will be necessary to limit mesotrione use to tolerant cultivars.

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