

NEW HERBICIDES FOR WEED MANAGEMENT IN SWEET CORN. Michael G. Particka, Bernard H. Zandstra and William R. Chase, Research Assistant, Professor, and Farm Manager Department of Horticulture, Michigan State University, East Lansing, MI 48824.

The North Central Region of the United States produces approximately 50% of the processed sweet corn in the United States. Sweet corn growers will experience more weed management problems due to weeds developing resistance to herbicides and the loss of registration of current herbicides. New field corn herbicides may replace older chemicals on sweet corn but not all field corn herbicides are safe on sweet corn and differences in tolerance may depend on individual hybrids. Sweet corn herbicide trials were conducted at Michigan State University in 2002 and 2003. One set of experiments evaluated the field corn herbicides flufenacet, mesotrione, pendimethalin, foramsulfuron, halosulfuron, clopyralid, glufosinate, flufenacet+metribuzin, diflufenzopyr+dicamba for safety and effectiveness on sweet corn. The second evaluated combinations of atrazine, mesotrione, and s-metolachlor on ten different sweet corn varieties over two years. Mesotrione at 0.2 lb ai/acre applied PRE caused less than 20% crop injury while providing good weed control. Postemergence applications of halosulfuron at 0.023 lb and clopyralid at 0.188 lb did not provide acceptable control of common lambsquarter. Foramsulfuron at 0.033 lb POST caused less than 20% crop injury and at 0.066 lb caused 25% crop injury while providing good weed control at both rates. Flufenacet alone at 0.6 lb controlled 50% of common lambsquarters in July; but when flufenacet+metribuzin were applied at 0.616 and 0.154 lb, respectively, common lambsquarters control was greater than 90% in July. Pendimethalin provided good weed control when applied alone PRE or POST when tankmixed with atrazine following s-metolachlor. Combinations of atrazine, mesotrione, and s-metolachlor did not cause significant crop injury or reduce marketable ears compared to the untreated control. Ear quality was evaluated by ear length, kernel tip fill, constrictions in the ear, and straightness of kernel rows.