MANAGING WEEDS IN SWEET CORN WITH MESOTRIONE PROGRAMS. Douglas Doohan, Joel Felix and Dain Bruns. Associate Professor and Research Associate, The Ohio State University, Wooster, OH 44691 and Research and Development Scientist, Syngenta Crop Protection, Hilliard, OH 43026.

'Attribute 0966' was seeded May 10, 2002 and immediately treated with *s*-metolachlor PRE at 2.2 kg/ha. Two experiments were then established to evaluate weed control and sweet corn tolerance to mesotrione with different adjuvant systems, and with different rates and timing of the herbicide. The experimental design for both experiments was a randomized complete block with four replications. Mesotrione was applied in 233 L/ha at a pressure of 240 kPa. Weed control and crop injury were evaluated 2, 4 and 7 WAT. With mesotrione at 105 g/ha POST and single adjuvants, either AMS (1%), COC (1%), NIS(O.25%), or UAN (2.5%) slight chlorosis (3 % or less) was observed 2 WAT. Chlorosis increased to 4 and 6%, respectively with 2-way adjuvant systems of COC + UAN, and COC + AMS. Sweet corn sensitivity was dependent upon mesotrione rate, increasing from 3% chlorosis at 53 g/ha + COC POST to 9% and 13% as the herbicide rate was increased to 105 and 210 g/ha. Little or no chlorosis was observed when mestrione was applied PRE at rates from 176 to 423 g/ha; however, significant stunting (5-10%) was observed across the range. Crop yield was not affected by adjuvants. Weed control was significantly affected by adjuvant. Control of Canada thistle 2 WAT averaged 65% with mesotrione at 105 g/ha + AMS or COC or UAN and increased to 75 and 85%, respectively, with the same herbicide rate and COC + AMS, or COC + UAN. Canada thistle control was similar with mesotrione at 105 and 210 g/ha POST. However, the species was not adequately controlled with PRE treatments at rates from 176 to 423 g/ha. AMS + mesotrione at 105 g/ha POST provided 71 and 74% control of common- and giant ragweed, respectively. Control of these species was improved by approximately 25% when the herbicide was applied with COC or UAN. Control of common- and giant ragweed was similar with PRE or with POST mesotrione and control was not improved with 105 g/ha POST, relative to 53 g/ha POST. Differences in weed control at 2 WAT were still readily apparent at 7 WAT.