

Response of nine sugarbeet varieties to split applications of postemergence herbicides. Robert G. Wilson, University of Nebraska, 4502 Avenue I, Scottsbluff, NE 69361.

#### Abstract

Field experiments were conducted in 1995 and 1996 to determine the response of nine sugarbeet varieties to five commonly used postemergence herbicide treatments. The sugarbeet varieties examined were Monohikari, Turbo, Laser, Beta 1399, KW 2398, KW 1492, KW 2262, HM 6176, and ACH 184. The weed control treatments were desmedipham plus phenmedipham (Betamix) at 0.17 plus 0.17 lb/acre, desmedipham plus phenmedipham plus clopyralid (Betamix plus Stinger) at 0.17 plus 0.17 plus 0.09 lb/acre, desmedipham plus phenmedipham plus ethofumesate (Betamix Progress) at 0.13 plus 0.13 plus 0.12 lb/acre, desmedipham plus phenmedipham plus triflurosulfuron (Betamix plus Upbeet) at 0.17 plus 0.17 plus 0.016 lb/acre, and desmedipham plus phenmedipham plus sethoxydim (Betamix plus Poast) at 0.17 plus 0.17 plus 0.28 lb/acre plus a nontreated control. Herbicides were applied twice, once when sugarbeets were in the cotyledon growth stage and again when the crop was in the two true-leaf growth stage. Sugarbeet varieties differed in reductions in plant vigor, leaf area, root yield, and sucrose percent caused by herbicide treatment. The response of different sugarbeet varieties to herbicides varied between years. In 1995 the greatest contrast in herbicide injury was between the sugarbeet varieties Monohikari and KW 2398, with Monohikari experiencing more herbicide injury than KW 2398. In 1996 more herbicide injury was observed on the sugarbeet variety HM 6176 compared to Monohikari, Laser, Beta 1399, KW 2398, and KW 2262, and ACH 184. On June 20, 1996, sugarbeet leaf area in plots treated with desmedipham plus phenmedipham plus triflurosulfuron or desmedipham plus phenmedipham plus ethofumesate were reduced 45 and 24%, respectively, compared to the nontreated control. This trend continued until July 26 when leaf area in the nontreated control was similar to plots treated with herbicide. Crop injury that occurred through the middle of the growing season in plots treated with desmedipham plus phenmedipham plus triflurosulfuron and desmedipham plus phenmedipham plus ethofumesate resulted in crop root yield reductions of 9 to 7% respectively, when averaged over the nine sugarbeet varieties.