

KOCHIA AND COMMON LAMBSQUARTERS CONTROL IN SUGARBEET. Alan G. Dexter and John L. Luecke, Professor and Research Specialist, Plant Sciences Department, North Dakota State University and University of Minnesota, Fargo, ND 58105.

Sugarbeet growers in Minnesota and eastern North Dakota were asked on a survey to identify their worst weed in sugarbeet in 2003. Kochia was named worst weed by 46% and common lambsquarters by 18% of the respondents.

Eighteen herbicide treatments were applied to sugarbeet at seven locations in western Minnesota and eastern North Dakota in 2004 with the objective of measuring kochia and common lambsquarters control from the treatments.

Desmedipham & phenmedipham & ethofumesate at 0.08 lb/A plus triflurosulfuron at 0.004 lb/A plus clopyralid at 0.03 lb/A plus clethodim at 0.03 lb/A plus methylated seed oil adjuvant at 1.5% v/v was the postemergence micro-rate treatment applied three or four times at a seven-day interval. Desmedipham & phenmedipham & ethofumesate at 0.25 (time 1)/0.33 (time 2)/0.5 (time 3) lb/A plus triflurosulfuron at 0.008 lb/A plus clopyralid at 0.06 lb/A plus clethodim at 0.047 lb/A was the postemergence conventional-rate treatment applied three times without adjuvant at a seven-day interval. When the conventional-rate was applied four times, the rate of desmedipham & phenmedipham & ethofumesate was 0.25 (time 1) followed by 0.33 (time 2 through 4) lb/A: the clethodim rate was 0.03 lb/A and the other rates remained the same.

All treatments gave 98% or greater control of common lambsquarters at five of the six locations where common lambsquarters was present. However, at Morris, Minnesota, a separation among treatments was observed. The micro-rate applied three times gave only 72% control of common lambsquarters and four applications gave 79% control. Adding extra ethofumesate at 0.09 lb/A to each of four micro-rate applications gave 99% common lambsquarters control. The conventional-rate applied three or four times gave 99 to 100% control. Metamitron at 1.5 lb/A plus the micro-rate applied four times gave 100% control of common lambsquarters but sugarbeet injury also was increased from 8% with the micro-rate alone to 23% with the micro-rate plus metamitron.

Kochia control was evaluated at two locations in 2004. Nearly all plants were resistant to ALS-inhibitor herbicides. The micro-rate applied three times gave only 26% kochia control and four applications gave 48% control. The conventional-rate applied three times gave 73% kochia control and four applications gave 76% control. Preemergence ethofumesate at 3.0 lb/A followed by four micro-rate applications gave 72% kochia control. The best observed kochia control was from preemergence ethofumesate at 3.0 lb/A followed by four conventional-rate applications which gave 94% control. However, the cost of this treatment would be \$270 per acre broadcast. Metamitron at 1.5 lb/A plus the micro-rate applied four times gave 85% kochia control compared to 48% from the micro-rate alone.