

DIMETHENAMID AS A LAY-BY TREATMENT IN SUGARBEET. Alan G. Dexter and John L. Luecke. Plant Sciences Department, North Dakota State University and the University of Minnesota, Fargo, ND 58105.

Preplant incorporated or preemergence herbicides were used on only 4% of the sugarbeet in eastern North Dakota and Minnesota in 2001. Postemergence herbicides were used on nearly all fields but the postemergence herbicides have little soil residual and weeds that emerge after the last postemergence application frequently are a problem in sugarbeet. Dimethenamid is a soil-applied herbicide with insufficient selectivity in sugarbeet when applied preemergence or preplant incorporated but dimethenamid applied after sugarbeet emergence, or lay-by, is less injurious than preemergence or preplant incorporated dimethenamid and the lay-by treatment will provide control of late-emerging weeds. Experiments were conducted from 1999 to 2002 to determine the most effective time of application and efficacy of dimethenamid used lay-by in sugarbeet.

Dimethenamid-P at 1.65 lb/A gave 76, 31, 18 and 0% sugarbeet injury when applied PPI, POST at the cotyledon to 2-leaf sugarbeet stage, POST at the 2-to 4-leaf stage or POST at the 4-to 8-leaf stage, respectively. Dimethenamid-P at 0.83 or 0.98 lb/A in combination with desmedipham & phenmedipham + triflurosulfuron + clopyralid + sethoxydim + methylated seed oil at 0.08 + 0.004 + 0.03 + 0.062 + 1.5% v/v (micro-rate) gave more sugarbeet injury than the micro-rate alone. However, sugarbeet injury was less when the dimethenamid-P was applied in the third (4-to 6-leaf sugarbeet) or fourth (6-to 10-leaf sugarbeet) application of the micro-rate rather than in the first (cotyledon sugarbeet) or second (2-leaf sugarbeet) application.

The micro-rate plus dimethenamid-P, and glufosinate plus dimethenamid-P gave greater control of redroot pigweed than the micro-rate alone or glufosinate alone averaged over several locations. Redroot pigweed control was not improved by dimethenamid-P at locations where the micro-rate alone or glufosinate alone gave nearly complete control. Dimethenamid-P plus glufosinate and s-metolachlor plus glufosinate gave similar sugarbeet injury and similar control of redroot pigweed and common lambsquarters.