

METOLACHLOR ON SUGARBEET IN EASTERN NORTH DAKOTA AND MINNESOTA. Alan G. Dexter and John L. Luecke, Extension Sugarbeet Specialist and Sugarbeet Research Specialist, Plant Sciences Department, North Dakota State University and the University of Minnesota, Fargo, ND 58105.

Metolachlor was tested for weed control in sugarbeet from 1985 through 1989. The results were encouraging but high levels of metolachlor caused non-cancerous tumors in test animals which prevented metolachlor from being registered for sugarbeet. A change in EPA regulations (revocation of the Delaney Clause) allowed reconsideration of metolachlor and testing on sugarbeet was resumed in 1997. S-metolachlor was registered for sugarbeet in 2003.

Sugarbeet injury evaluated visually averaged 9% in experiments conducted over 29 location-years prior to 2003 from metolachlor at 3.4 kg/ha or S-metolachlor at 2.1 kg/ha. Sugarbeet injury was greater from preplant incorporated metolachlor than from preemergence metolachlor and spring treatments caused more injury than fall treatments.

Visible sugarbeet injury over 20% was observed in only four of 29 location-years and the maximum observed injury was 38% prior to 2003. Sugarbeet injury from S-metolachlor in 2003 was greater than observed in any previous year in experiments. Also, sugarbeet injury from S-metolachlor was widely observed by sugarbeet growers in eastern North Dakota and Minnesota. In 2003 experiments, visible sugarbeet injury averaged 44% and ranged from 20 to 73% from S-metolachlor at 2.1 kg/ha over nine locations. Sugarbeet stand loss averaged 21% and ranged from 0 to 41%. Weed-free sugarbeet treated with S-metolachlor at 2.1 kg/ha yielded 6480 kg/ha of extractable sucrose while sugarbeet treated with ethofumesate at 3.9 kg/ha yielded 8240 kg/ha of extractable sucrose at St. Thomas, ND. Sugarbeet injury was 43% and stand loss was 32% from S-metolachlor at St. Thomas. Rainfall was frequent and widespread after sugarbeet seeding in 2003 and cool temperatures slowed sugarbeet emergence. Moist soil plus slow emergence may have increased movement of S-metolachlor into emerging sugarbeet and increased sugarbeet injury as compared to previous years.