

BREDEHOEFT, MARK W. AND JOHN FISCHER, Southern Minnesota Beet Sugar Cooperative, Renville, MN 56284. Dual II Magnum Fall and Spring Applied in Sugarbeets.

Weed control in sugarbeets has been a challenge for producers and processors for many years. Effective weed control begins early in the production season. There are not many alternatives for producers in sugarbeets. The objective of this research was to evaluate fall and spring applications of Dual II Magnum (metolachlor) on sugarbeets for sugarbeet injury and weed control.

Experiments were established at two locations in Raymond and Murdock, MN. Experimental design was a randomized complete block design with four replications. Plots were established 11 ft. (6 rows) wide by 30 ft. long. Fall applications were made on November 11, 1997 at both locations. Treatments that required incorporation were incorporated at 4 inch depth and .4 inches of precipitation were received 4 hours after application in a snow-water mix. Spring applications were made on April 16, 1998 and incorporated treatments were incorporated at 4 inch depth. Treatments were applied with a bicycle type sprayer at 40 lb. pressure with 17 gallons carrier per acre. The Raymond site had 35% and the Murdock site had 12% residue at application time in the fall of 1997. Harvest of experimental units was conducted at Murdock on September 23, 1998 and was not conducted at the Raymond site. Sugarbeets were analyzed for quantity and quality.

General Conclusion:

All treatments except Frontier, at Raymond, MN did not injure sugarbeets significantly.

Raymond Site Conclusions:

Dual II Magnum at 1.91 lb. ai/acre spring and fall incorporated and Nortron at 2.5 lb ai/acre gave significantly higher redroot pigweed control than all other treatments. Dual II Magnum at 1.91 lb ai/acre spring and fall incorporated gave significantly higher giant foxtail control compared to all other treatments.

Murdock Site Conclusions:

Dual II Magnum at 1.91 lb. ai/acre regardless of application time or incorporation gave greater lambsquarter, yellow foxtail and pennsylvania smartweed control than all other treatments. Yield and sugar production was directly related to weed control. Dual II Magnum at 1.91 lb. ai/acre regardless of application time or incorporation gave significantly greater tons per acre than all other treatments. Dual II Magnum at 1.91 lb. ai/acre applied and incorporated spring and fall gave significantly higher recoverable sucrose per acre than all other treatments except Dual II Magnum at 1.91 lb. ai/acre applied in the fall and not incorporated.