

EFFECT OF 'EPSOGROW' ON SUGARBEET QUALITY AND YIELD IN 2000

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INTRODUCTION AND OBJECTIVE

Epsogrow? (100% Epsom Salt) is obtained from natural deposits in Germany. Epsogrow? contains water soluble magnesium (9.8 %), and water soluble sulfur (12.9 %). Potash Import and Chemical Corporation in New York, the distributor of Epsogrow? produced by Kali und Salz GmbH, Germany, claims that foliar application of Epsogrow? at full canopy will provide quick acting magnesium and sulfur that will enhance yield and quality regardless of the magnesium content of the soil. Data provided by Potash Import and Chemical Corporation indicated that Epsogrow? increased sugar content from 18.0 % to 18.8 % in Germany.

The objective of this research was to determine the effect of Epsogrow? on sugar content and yields of sugarbeet in the Red River Valley.

MATERIALS AND METHODS

Research was conducted at Fargo, ND, on a Fargo silty clay soil between 5 May and 19 September 2000. 'Van der Have H66183' sugarbeet seeds were planted on 5 May with a John Deere MaxEmerge 2 planter into plots 11 feet in width (6 22-inch wide rows) and 30 feet in length. Seeds were placed 1.25 inches deep and 3 inches apart in rows that were 22 inches wide. Counter was applied at 11.9 lb/acre at planting to control sugarbeet root maggot. The experiment was arranged in a randomized complete block design with four replications. Plots were thinned manually to 150 beets per 100 foot of row on 6 June. Epsogrow? was applied at full canopy on 14 July at 20 pounds per acre directly to the 4-inner rows of the 6-row plots with a boom sprayer operating at 110 psi and delivering 20.5 gallons spray solution per acre. There were also untreated check plots. Fertilization was done according to standard recommendation for sugarbeet. Plots were kept weed free using micro-rates of herbicides recommended for sugarbeet, and cultivation. Eminent and Supertin were used for controlling Cercospora leaf spot.

The middle two rows of each 6-rows plot were harvested on 19 September. Yield was determined, and quality analysis performed by American Crystal Sugar Company Quality Tare Laboratory, East Grand Forks, Minnesota. Data was analyzed for differences by analysis of variance and LSD using Agriculture Research Manager, version 6.0.

RESULTS AND DISCUSSION

There was no observable difference in plant growth between treated and untreated plots. The plot data indicate that there were no significant difference in the sucrose content, sucrose loss to molasses, root yield and recoverable sucrose per acre between the treated plots and the untreated check ([Table 1](#)).

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Table 1. Effect of Epsogrow? On Sugarbeet Quality and Yield at Fargo, ND, 2000.

Treatment	Sucrose Content (%)	Sucrose Loss to Molasses (%)	Root Yield (T/Acre)	Recoverable Sucrose (lb/T)	Recoverable Sucrose (lb/Acre)
Epsogrow? 20 lb/acre	17.9	0.9	19.6	339	6487
Untreated Check	17.7	0.9	20.5	334	6707
LSD (P=0.05)	2.0	0.2	5.0	42.6	947
CV (%)	5.0	7.7	11.1	5.6	6.4