

EFFECT OF GENESIS ON SUGARBEET YIELD AND QUALITY IN 2003Mohamed F. R. Khan¹ and Randy Nelson²¹Extension Sugarbeet Specialist
North Dakota State University / University of Minnesota²Research Technician, Department of Soil Science
North Dakota State University**OBJECTIVE**

To determine the effect of Genesis on sugar content and yield of sugarbeet in the Red River Valley.

MATERIALS AND METHODS

Research was conducted at Foxhome, MN, on a silty loam soil and at Glyndon on a Beardon silty clay loam soil. 'HH Agate' sugarbeet seeds were planted with a John Deere MaxEmerge 2 planter into plots 11 feet in width (6 22-inch wide rows) and 30 feet in length on April 29 and May 16 at Glyndon and Foxhome, respectively. Seeds were placed 1.25 inches deep and 5 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. Genesis was applied at the four-leaf stage at 27 and 60 g of product in 10 gallons of distilled water per acre and compared with an untreated check. Treatments were applied directly to the 4-inner rows of the 6-row plots with a hand-held sprayer. Fertilization was done according to standard recommendation for sugarbeet. Plots were kept weed free using micro-rates of herbicides recommended for sugarbeet, hand-weeding, and cultivation; and disease free using four standard fungicide applications.

The middle two rows of each 6-row plot were harvested on 17 and 23 September at Foxhome and Glyndon, respectively. 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 statistically significant difference between the untreated check and the genesis treatments in net tons, recoverable sucrose, sucrose concentration, and in percent sugar loss to molasses at either of the research sites. Yields at Glyndon were higher than at Foxhome, probably because of the 2-weeks earlier planting and 1-week later harvest at Glyndon.

ACKNOWLEDGEMENT

Thanks to Frontier Labs Inc for partial funding of this research. Thanks to Charles Hotvedt of American Crystal Sugar Company Quality Tare Laboratory, East Grand Forks, Minnesota, for sugarbeet quality analysis.

Table 1. Effect of Genesis on sugarbeet yield and quality at Glyndon, MN 2003.

Treatments And Rates Per Acre	Sucrose Content (%)	SLM (%)	Root Yield (T/Acre)	Rec. Sucrose (lb/T)	Rec. Sucrose (lb/Acre)
Untreated Check	17.0	1.45	28.4	311	8788
Genesis at 27 g	17.4	1.38	29.1	319	9201
Genesis at 60 g	17.6	1.40	25.6	324	8212

LSD (P=0.05)	1.1	0.30	6.7	27	2124
CV (%)	3.68	12.36	14.08	4.94	14.06

Table 2. Effect of Genesis on sugarbeet yield and quality at Foxhome, MN 2003.

Treatments And Rates Per Acre	Sucrose Content (%)	SLM (%)	Root Yield (T/Acre)	Rec. Sucrose (lb/T)	Rec. Sucrose (lb/Acre)
Untreated Check	15.1	1.8	20.1	255	5395
Genesis at 27 g	14.7	1.9	22.4	251	5748
Genesis at 60 g	15.2	1.8	23.4	268	6388
LSD (P=0.05)	1.4	0.32	4.56	43.5	1497
CV (%)	5.57	9.91	12.01	9.76	14.81
