

# EFFECT OF BTN+ ON SUGARBEET YIELD AND QUALITY

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## Objective

Determine the effect of BTN+ on sugarbeet yield and quality.

## Materials and Methods

Field research was conducted in 2006 at Foxhome, MN and Prosper, ND. Sugarbeet variety 'Beta 4818' treated with Tachigaren (45 g/kg seed) was seeded into field plots 11 feet wide (6 rows spaced 22 inches apart) and 30 feet in length at Foxhome and Prosper on 4 April and 5 May. Counter insecticide was applied at 11.9 lb/acre at planting to control sugarbeet root maggot (*Tetanops myopaeformis* von Röder; Diptera: Otitidae). Fertilization was done according to standard recommendations for sugarbeet. Weeds were controlled with recommended herbicides (Khan, 2006), cultivation and hand weeding. Cercospora leaf spot was controlled using labeled fungicides.

Plots were manually thinned to 175 plants per 100 feet of row during the four to six leaf stages. The experiment was a randomized complete block design with four replicates. The treatments were two gallons of BTN+ (supplied by AgGrowth Products, LLC, Omaha, NE) applied in-furrow, two gallons of BTN+ applied in-furrow followed by a foliar application of BTN+ at two gallons per acre, and an untreated control. In-furrow applications of BTN+ were made to the middle four rows of plots during planting by banding two gallons of BTN+ with two gallons of water for a total volume of four gallons per acre on 4 April and 5 May at Foxhome and Prosper, respectively. Foliar applications of BTN+ were applied to the middle four rows of plots using a CO<sub>2</sub> powered, four nozzle hand-held sprayer, calibrated to deliver 15 gallons per acre (two gallons of BTN+ with 13 gallons of water) using 8002 nozzles operating at 40 psi on 30 August and 5 September at Prosper and Foxhome, respectively. The middle two rows of plots were harvested on 26 September and 3 October at Prosper and Foxhome, respectively. Yield was determined and quality analysis performed by American Crystal Sugar Company Quality Tare Laboratory, East Grand Forks, MN. The least significant difference (LSD) test was used to compare treatments when the F-test for treatments was significant ( $p=0.05$ ). The data analysis was performed with the ANOVA procedure of the Agriculture Research Manager, version 6.0 software package (Gylling Data Management Inc., Brookings, South Dakota, 1999).

## Results

At both Foxhome and Prosper there was no significant differences in recoverable sucrose, root yield, sucrose concentration, and sugar loss to molasses between treated plots and the untreated control. The results indicate no yield or quality advantage in using the tested products.

## Reference

Khan, M. 2006. 2006 Sugarbeet Production Guide. North Dakota State University and University of Minnesota Extension Services, pp. 24-55.

Table 1. Sugarbeet yield and quality at Foxhome, MN, 2006.

Treatment	Recoverable sucrose		Root yield (t/A)	Sucrose concentration (%)	Sucrose loss to molasses (%)
	(lbs/A)	(lbs/T)			
BTN+ in-furrow	5867	261	22.8	14.48	1.45
BTN+ in-furrow + foliar application	6202	263	23.9	14.57	1.45
Untreated control	6188	257	24.4	14.34	1.50
LSD (p=0.05)	717	43	2.4	0.85	0.25

Table 2. Sugarbeet yield and quality at Prosper, ND, 2006.

Treatment	Recoverable sugar		Root yield (t/A)	Sucrose concentration (%)	Sucrose loss to molasses (%)
	(lbs/A)	(lbs/T)			
BTN+ in-furrow	11449	300	38.6	16.50	1.50
BTN+ in-furrow + foliar application	11838	313	38.2	17.08	1.40
Untreated control	11481	307	37.8	16.80	1.48
LSD (p=0.05)	1551	28	2.5	1.23	0.20