

Technical Data Report

Review

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Effects of Nutriplant™ SD on Sugar Beet Production

Objective

The objective of the study was to determine the effects of Nutriplant SD on the production of sugar beets.

Materials and Methods

Field trials were conducted on sugar beets (*Beta vulgaris* sp.) at the independently owned and operated agricultural research facility, Irrigation Research Foundation, at Yuma, Colorado, USA under the supervision of Colorado State University. Planting population was 116,000 seeds/ha (47,000 seeds/acre). Test plots consisted of 4 rows 76 cm (30 inches) wide and 195 meters (650 feet) long. Two uniform plots were selected for each trial. One plot was treated with Nutriplant SD applied at 5 g/kg (8 oz/100 lb) of seed. Nutriplant SD was applied to the sugar beet seeds and mixed until the seeds were thoroughly and uniformly coated. The other plot was left untreated as control. Cultural practices, including fertilization, irrigation and pest management, followed local practices and were the same for treated and untreated plots. At harvest, beet yield and percent sugar in the beets were determined. Sugar yield production was calculated using beet yield and sugar content data.

Results

The application of Nutriplant SD to sugar beet seeds at planting consistently increased the yield of sugar beets. The average increase for the four years was 6,798 kg/ha (3.04 tons/acre) or 16.3% over the control, ranging from 1,349 kg/ha (0.60 ton/acre) increase in 2001 to 14,381 kg/ha (6.44 ton/acre) in 2004 (Table 1). The highest yield increase of 39.3% was observed in 2004 when overall yield was lower because of damage caused by four hail storms during growing season.

Table 1. Effects of Nutriplant SD on sugar beet yields. Irrigation Research Foundation, Yuma, Colorado, USA.

Year	Sugar Beet Yields						
	Control		Nutriplant SD		Difference		
	(kg/ha)	(ton/acre)	(kg/ha)	(ton/acre)	(kg/ha)	(ton/acre)	(%)
1999	55,953	24.90	60,223	26.80	4,270	1.90	7.6
2001	57,526	25.60	58,875	26.20	1,349	0.60	2.3
2003	43,819	19.50	51,010	22.70	7,191	3.20	16.4
2004	36,853	16.44	51,234	22.82	14,381	6.44	39.3
Mean	48,538	21.60	55,336	24.63	6,798	3.04	16.3

In three of the four years, the application of Nutriplant SD increased percent of sugar in the beets (Table 2). Combined with the increase in beet yield, Nutriplant SD consistently increased sugar production. The average increase for the four years was 1,287 kg/ha (1,145 lb/acre) or 18.7%, ranging from 819 kg/ha (728 lb/acre) increase in 2001 to 1826 kg/ha (1626 lb/acre) increase in 2004.

Table 2. Effects of Nutriplant SD on percent sugar and sugar yield. Irrigation Research Foundation, Yuma, Colorado, USA.

Year	Sugar (%)		Sugar Yield					
			Control		Nutriplant SD		Difference	
	Control	Nutriplant SD	(kg/ha)	(lb/acre)	(kg/ha)	(lb/acre)	(kg/ha)	(lb/acre)
1999	12.24	12.75	6,849	6,096	7,678	6,834	829	738
2001	11.81	12.93	6,794	6,047	7,613	6,775	819	728
2003	16.44	17.40	7,204	6,412	8,876	7,900	1,672	1,488
2004	17.90	16.44	6,597	5,871	8,423	7,497	1,826	1,626
<i>Mean</i>	<i>14.60</i>	<i>14.88</i>	<i>6,861</i>	<i>6,107</i>	<i>8,148</i>	<i>7,252</i>	<i>1,287</i>	<i>1,145</i>

Conclusions

In a four year study Nutriplant SD treatment consistently increased sugar beet production by an average of 6,798 kg/ha (3.04 tons/acre), a 16.3% increase over the control.

Nutriplant SD increased sugar production by an average of 1,287 kg/ha (1,145 lb/acre), an 18.7% increase over the control.

References

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