

**Sugarbeet Nitrogen Response Following Wheat**

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<b>Location:</b> Saginaw Valley Research and Extension Center	<b>Tillage:</b> Conventional
<b>Planting Date:</b> May 2, 2013 (Harvest 10/18/13)	<b>N Rates:</b> See below
<b>Soil Type:</b> Clay loam; 2.7 OM; 7.8 pH; 38 ppm P; 203 ppm K	<b>Population:</b> 4 ¼ in. spacing
<b>Variety:</b> Hilleshog 9042 Roundup Ready	<b>Replicated:</b> 4 replications

N Trt. (Total lb. N/A)	RWSA	RWST	Tons/A	% Sugar	% CJP	NH <sub>2</sub>	Amino-N
0 – Check	7208	304	23.7	20.0	95.9	57	3.3
40	8028	295	27.2	19.7	95.3	73	4.5
80	8264	296	27.9	20.0	94.9	94	5.5
120	7326	279	26.3	19.0	94.4	141	8.4
160	8537	287	29.7	19.4	94.8	144	8.7
200	8632	287	30.1	19.4	94.7	110	6.4
240	8835	278	31.9	19.0	94.4	175	10.5
<b>LSD<sub>(0.10)</sub><sup>a</sup></b>	<b>894</b>	<b>14</b>	<b>2.7</b>	<b>0.8</b>	<b>0.5</b>	<b>32</b>	<b>2.0</b>

<sup>a</sup> LSD, least significant difference between means within a column at ( $\alpha = 0.10$ ).

N Trt. (Total lb. N/A)	Gross Grower Payment (\$/A)	Net Economic Return Minus N Costs (\$/A) <sup>b</sup>	Net Economic Return Minus N Costs and Trucking (\$/A) <sup>c</sup>
0 – Check	1316	1316	1227
40	1465	1446	1344
80	1508	1470	1365
120	1337	1280	1181
160	1558	1481	1370
200	1575	1479	1367
240	1613	1497	1378
<b>LSD<sub>(0.10)</sub><sup>a</sup></b>	<b>163</b>	<b>163</b>	<b>155</b>

<sup>a</sup> LSD, least significant difference between means within a column at ( $\alpha = 0.10$ ).

<sup>b, c</sup> Gross grower payment and net economic returns based upon a \$51/ton payment, an average RWST equal to the company average, an N price of \$0.48/lb., and trucking costs of \$3.75/T.

**Summary:** Trial was conducted to more accurately determine sugarbeet nitrogen fertilizer needs and nitrogen response following wheat. All treatments received 40 lbs. N/A as 28%, 20 lbs. P<sub>2</sub>O<sub>5</sub>/A, 50 lbs. K<sub>2</sub>O/A. and 2 lbs. Mn/A as starter placed 2x2 on May 2 (check plots did not receive any N). The 40 lb. N/A treatment received no supplemental N beyond the starter application. Sidedress N (urea) applications were completed on June 11 and were coated with Agrotain to avoid N volatilization.

Wet, cool spring conditions delayed planting, caused uneven emergence, and slowed beet seedling development for 4-6 weeks after planting. These conditions also resulted in about a 30-40 lb N/A loss across a large portion of the state. Keep this 30-40 lb N loss in mind when evaluating 2013 N rates against other years. Treatments consisting of 160 lb. N or more tended to yield greater but when factoring in the economics of N price and trucking, 40 lbs. N as a 2x2 at planting may have been the best option given the shortened, wet season. The tendency of both NH<sub>2</sub> and amino-N concentrations to increase up to 160 lbs N, decrease at 200 lbs N, and again increase at 240 lbs N was similar this year as in 2012 and 2011. This may indicate that treatments consisting of 160 or more lbs N/A were set-up to do well in the field but likely ran short on bulking time. Given a few extra weeks of growing season, 160 lbs N/A or greater treatments may have added significant tonnage to significantly impact net economic returns.

So what can growers take away from a less than stellar sugarbeet season? In wet seasons with significant planting delays, 40 lbs N/A as a 2x2 may be the only and most economical investment in N. Net economic return is based on a \$51/ton payment, an average RWST equal to the company average, an N price of \$0.48/lb., and trucking costs of \$3.75/T.