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# Impacts of Organic Sources of Nitrogen on Sugarbeet Production

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

| N Trt. 160 lb N/A Total | RWSA | RWST | Tons/A | % Sugar | % CJP | NH2 | Amino-N | % Total N (12 lf.) |
|---|---|---|---|---|---|---|---|---|
| 40 UAN 2x2<br>120 Urea Sd | 8524 | 287 | 29.7 | 19.4 | 94.8 | 144 | 8.7 | 3.9 |
| 1 T/A Biotic<br>40 UAN 2x2<br>13 Urea Sd | 8632 | 283 | 30.5 | 19.1 | 94.8 | 118 | 7.1 | 5.0 |
| 1 T/A Herbrucks<br>40 UAN 2x2<br>66 Urea Sd | 9645 | 282 | 34.2 | 19.2 | 94.6 | 119 | 7.0 | 4.4 |
| 2 T/A Herbrucks<br>40 UAN 2x2<br>13 Urea Sd | 8868 | 278 | 31.9 | 18.9 | 94.4 | 153 | 9.1 | 4.7 |
| **$LSD_{(0.10)}$[a]** | **----** | **15** | **3.7** | **0.8** | **0.5** | **38** | **2.5** | **0.4** |

[a] LSD, least significant difference between means within a column at ($\alpha = 0.10$).

**Summary**: Trial was conducted to determine the effects of organic spring-applied sources of N on sugarbeet production and quality. All treatments received 40 lbs. N/A as 28%, 20 lbs. $P_2O_5$/A, 50 lbs. $K_2O$/A. and 2 lbs. Mn/A as starter placed 2x2 on May 2. A biotic (8-5-5, mycorrhizae-inoculated) fertilizer and Herbrucks pelleted chicken manure (4-3-2) were applied pre-plant incorporated the day of planting at 1 or 2 T/A The 100% soluble N treatment was applied as urea sidedress on June 11, other than 40 lbs N in 2x2 starter which all treatments received. Nitrogen applications in all treatments were equalized at 160 lbs of first-year mineralizable N/A.

At 1 T/A, the Herbrucks product produced significantly greater tonnage and greater RWSA as compared to other treatments. The organic-based products did not suffer large decreases in % sugar at the 1 T/A rate and had similar NH2 and amino-N concentrations as the industry-standard 100% soluble N treatment. At 2 T/A, the Herbrucks product began to show signs of increased N impurities, lower tonnage, and decreased RWST. The economics of organic N applications will need to be further investigated but in 2013 the fear of these products reducing beet quality was not substantiated.