

Foliar Slow-Release Nitrogen in Sugarbeet

Kurt Steinke and Andrew Chomas, Michigan State University

Location: Saginaw Valley Research and Extension Center	Tillage: Conventional with light S-tine at sidedress
Planting Date: April 5, 2012 (Harvest 10/5/12)	N Rates: See below
Soil Type: Clay loam; 2.9 OM; 7.8 pH; 40 ppm P; 183 ppm K	Population: 4 ¼ in. spacing
Variety: Hilleshog 9042 Roundup Ready	Replicated: 4 replications

N Trt. (Total lb. N/A)	Sidedress (2-4 lf)	Foliar N (lb. N/A)	RWSA	RWST	Tons/A	% Sugar	% CJP	NH ₂	Amino-N
80 ^a	40	0	8758	290	30.2	19.8	94.5	167	9.9
120	80	0	9165	282	32.5	19.3	94.3	183	11.0
80	30	10 ^c	8554	288	29.7	19.6	94.5	193	11.8
80	20	20 ^d	8850	295	30.0	19.9	94.7	164	9.6
120	70	10 ^c	8992	281	32.0	19.5	93.6	228	14.0
120	60	20 ^d	9472	296	32.0	20.1	94.6	163	9.8
LSD_(0.10)^b	----	----	----	10	3.3	0.5	0.5	56	3.5

^a All plots received 40 lbs. N/A as starter.

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

^c 3 applications at 1 gallon per acre on May 15, May 31, and June 13 for a total of 10 lb. N.

^d 3 applications at 2 gallon per acre on May 15, May 31, and June 13 for a total of 20 lb. N.

Comments/Summary: Trial was conducted 1) to investigate the effects of N-Demand (30-0-0; 60% slow-release N, 40% urea) as a foliar slow-release in-season nitrogen application and 2) to determine whether any benefit existed to reducing sidedress N applications by 10-20% only to supplement this N through foliar mid-summer N applications. All treatments received 40 lbs. N/A as 28%, 20 lbs. P₂O₅/A, 50 lbs. K₂O/A. and 2 lbs. Mn/A as starter placed 2x2 on April 5. Foliar slow-release N had little impact on yield or sugar quality. Past research has indicated potential benefits to foliar N applications only when soil moisture conditions are favorable. The dry growing conditions of 2012 likely limited the probability for positive responses to any mid-summer foliar N applications. Data demonstrate no benefit to reducing sidedress N applications and supplementing with foliar N.