

FOLIAR FEED TRIAL IN MICHIGAN

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ABSTRACT

Many producers in Michigan apply "complete foliar feeds" beginning in the sugarbeet's 6 to 8 leaf stage continuing to show closure. Little data is available to determine the benefit of these products in large-scale replicated trials. Foliar feed products were applied according to their respective labels for 6 to 8 rows in long strip trials (1000 feet to ½ mile long fields) in 2001 and 2002. Both yield and quality data were collected.

With the profitability margins decreasing in agriculture, it is imperative growers make decisions based on correctly designed trials attempting to separate field variability from treatment differences. Many sugarbeet producers in Michigan apply "foliar feed" products to their crop without information to justify the application.

Large strip trials were conducted to determine if (a few of) these available foliar feed products could improve the sugarbeet yield and quality. These products are just a few random products available, not inclusive list. Three trials were conducted over two years.

MATERIALS AND METHODS:

Treatments were applied with a tractor plot sprayer (2001 8-row and 2002 6-row) to three locations. Two locations in 2001 and one location in 2002 had three location-years (see Table 1). The plot sprayer applied 13.8 GPA with 8002 nozzles at 40 psi at 3.1 MPH. Each location had four replications of each treatment.

Treatments (Table 2) began when sugarbeets were approximately 6-8 leaf stage and were applied sequentially as recommended by product label (Table 3).

Plots were harvested with either a 6 or 8-row commercial harvester for different lengths depending on the location. Weights were determined with individual truck loads or a scaled cart for separate treatment. Plots in 2001 had very good weed control. In both 2001 and 2002 *Cercospora* leafspot was controlled very well in the plots.

Quality samples were dropped from the harvester to have a random sample. Average beet weight was determined from the quality samples in the Carrollton tare room. Samples were analyzed at the Michigan Agricultural Research Laboratory. Quality analysis includes RWST (recoverable white sugar per ton) which is presented as a 120-day slice equation (not a fresh-beet basis); %CJP is clarified juice purity which is an indication of recovery or extraction; and

Table 1: General plot information is listed for three locations.

	LAKKE Ewald	Two B Farm, Inc.	LaRaCha
Planting Date	April 9, 2001	April 4, 2001	May 7, 2002
Harvest Date	October 29, 01	November 2, 01	October 27, 02
Harvest Length	2134 feet avg.	988 feet avg.	2225 feet avg.
Variety	HM E17	HM E17	HM E17
Michigan County	Tuscola	Huron	Saginaw
Row Width/ Harvest	22 inch/8 harvested with individual trucks	22 inch/8 harvested with scaled cart	28 inch/6 harvested with individual trucks
Herbicide	Microrate 5X	Microrate 4X	Microrate 3X
Fungicide	3 applications	2 applications	2 applications
Previous Crop	Dry edible beans	Corn	Soybeans

Table 2: Treatment list for foliar feed products applied in these trials.

	Foliar Feed Treatment	Rate (broadcast)	Comments
1	TechMag + 28%N	2 lbs/A + 1 gal /A	MnSO4 product
2	Crop Completer Gold/II	1 qt/A + 1 qt/A	1%Mg 4%S 4%Mn 0.5%Zn 0.005%Mo
3	Solubor + 28%N	1.5 lbs/A + 1 gal/A	10% Boron
4	Untreated Check		
5	C-N-B	2 qt/A	Calcium (6% CaCl) and Boron (2% NaB04)
6	Bianary CQ	1 qt/A	8%N; 4%P; 2%K; 0.0075%Co; 0.15% Cu 0.2%Fe; 0.16%Mn; 0.3%Zn

Table 3. Application timings conducted each year.

	LAKKE Ewald	Two B Farm, Inc.	LaRaCha
Untreated	2001	2001	2002
TechMag + 28%N	6/8; 7/10	6/9; 7/11	7/2; 7/27
SoluBor + 28%N	6/8; 7/10; 8/8	6/9; 7/11; 8/9	7/2; 7/27; 8/12
CCG/CCII	6/8; 7/10; 8/8	6/9; 7/11; 8/9	7/2; 7/27; 8/12
C -N- B	6/8; 7/10	6/9; 7/11	7/2; 7/27
Bianary CQ	6/8;	6/9;	7/2

RWSA (recoverable white sugar per acre) uses the RWST and tons/A for calculations.

RESULTS:

No interaction was present among the year-location data, therefore data was averaged over the three location-years. No treatment was significantly different compared to other treatments, including the untreated check in yield or quality (Table 4). None of the foliar feed treatments improved RWSA, tons/A, RWST, % S or %CJP compared to the untreated check.

Table 4: Three location-years were combined for yield and quality data.

TREATMENT	RWSA	CLEAN Tons/Acre	RWST	% Sugar	% CJP	HARVESTED B/100	Plants/A	Average WT/Beet
Solubor + 28% N	6944	25.0	279.2	19.2	93.9	137	29,759	1.7
Untreated Check	6824	24.8	274.9	19.0	93.8	151	32,849	1.6
Crop Completer Gold/II	6747	24.6	275.0	19.1	93.7	134	29,273	1.8
C-N-B	6741	24.4	277.7	19.2	93.8	128	27,983	1.8
Bianary CQ	6718	24.5	278.1	19.3	93.6	128	27,781	1.8
TechMag + 28% N	6673	24.3	275.4	19.1	93.6	150	32,186	1.6
Average	6774	24.6	276.7	19.2	93.7	138	29,972	1.7
LSD (0.05)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
CV (%)	5.7	4.4	3.1	2.2	0.6	18.4	18.4	19.5

SUMMARY:

Application of these foliar feed treatments did not improve RWSA, RWST, tons/A, %S or %CJP. This data would not justify the investment or return to the sugarbeet producer for the products tested.

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