A NEW SOIL CONDITIONER FOR SUGAR BEETS

OBJECTIVE:

To determine if sugar beet production is affected by the addition of BorreGRO® HA-1 to standard fertility programmes.

RESULTS:

- A test plot treated with fertiliser and 3 gallons per acre of BorreGRO HA-1 soil conditioner produced 294 lbs more recoverable sugar per acre than a control plot treated with fertiliser alone (Table 1). This correlates to 5.2% more recoverable sugar per acre (Table 2).
- This increase in recoverable sugar resulted from an increase in both yield and sugar content (Table 1).
- Gross income to the grower increased by $58.80 per acre over the control (Table 2).

Treatment	Yield (tons/acre)	Sugar content (%)	Recoverable Sugar (lbs/acre)
Control	28.4	15.3	5602
BorreGRO HA-1	28.9	15.7	5896

Table 1: Yield Data. Trials conducted by Michigan Sugar Company, Bay City, Michigan.

PROCEDURE:

The trial was performed by Michigan Sugar Company, Michigan, USA. The trial was conducted on loam soil.

BorreGRO HA-1 was applied at 3 gallons per acre at planting in addition to a normal fertiliser programme. The sugar beets were planted on 28th April and harvested on 3rd October. The control had the same fertility programme as the BorreGRO HA-1 treatments. Yield data was obtained at harvest by weighing, and sugar content data was determined through laboratory analysis.

Treatment	Recoverable Sugar (lbs/acre)		Gross Return per acre[2]	
	Total	Increase (%)	Total	Increase (%)
Control	5602	-	$1120.40	-
BorreGRO HA-1	5896	5.2	$1179.20	$58.80

Table 2 Gross Economic Return to Grower. Sugar price based on $0.20/lb of refined white sugar.

DISCUSSION:

BorreGRO HA-1 is produced from leonardite using a patented process. It is soluble over the pH range 2-12. Unlike conventional humates, it can be formulated with both acidic and basic fertilisers and applied through irrigation water. BorreGRO HA-1 improves NUE and availability of nutrients to the plant.

CONCLUSIONS AND RECOMMENDATIONS:

Plots treated with fertiliser and 3 gallons per acre of BorreGRO HA-1 produced an average of 5.2% more recoverable sugar per acre than similar plots treated with fertiliser alone. This increase in recoverable sugar resulted from a combination of yield increase and increased sugar content. Thus, application of BorreGRO HA-1 at 3 gallons per acre is recommended for future sugar beet plantings. BorreGRO HA-1 should be applied at planting alone or with liquid fertiliser near the seed at planting to maximise response.

WHAT DOES BORREGRO DO?

Through extensive crop trials, BorreGRO has been shown to improve the structure of soil by aiding aeration, improving water penetration and increasing water holding capacity.

BorreGRO can also act as a complexing agent, making natural or supplemented soil nutrients such as iron or zinc available to the plant and soil microbes. In addition to being a source of organic carbon, BorreGRO is also a source of the essential nutrient sulphur. Consequently, use of BorreGRO can result in:

- Increased crop yield
- Increased root mass
- More vigorous early stage growth
- Increased vegetative mass
- Increased chlorophyll content

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