AN ACID SOLUBLE HUMATE FOR POTATOES

OBJECTIVE:

To determine if potato production is affected by the addition of BorreGRO® HA-1 to a standard fertility programme.

RESULTS:

- A test plot treated with fertiliser and 4 pounds of BorreGRO HA-1 soil conditioner per acre produced an average of 11.6% more potatoes than a control plot treated with fertiliser alone (Table 1).
- The yield of select potatoes between 4 to 8 ounces was 8.8% greater in the BorreGRO HA-1 treated plot than in the plot treated with fertiliser alone. The yield of select potatoes between 8 to 12 ounces was 45.9% greater (Table 1).
- Gross income to the grower increased by 335 dollars per acre over the control (Table 2).

PROCEDURES:

All trials were performed by Borregaard in conjunction with a commercial potato grower in Wisconsin, US. The potato variety was Snowden, a processing potato. Two plots having similar soil types were selected from soil maps. The control plot was treated with fertiliser alone (starter fertiliser with subsequent nitrogen topdress). The test plot was treated with fertiliser containing 4 pounds of BorreGRO HA-1 per acre. Application was by banding near the seed furrow at planting. Subsequent nitrogen fertiliser was knifed into the potato hills and broadcast applied. Pesticides were applied as needed. Yield and grade data were obtained using standard protocols.

Grade (ounces)	Yield (Cwt/acre)		% Increase
	Control	BorreGRO HA-1	
0-4	127.1	126.3	(0.6)
4-8	316.5	344.5	8.8
8-12	61.7	90.0	45.9
Total Yield	505.3	564.0	11.6

Table 1: Yield Data (Coloma, WI). Trials conducted by Borregaard, in Wisconsin, US

Parameter	Yield (Cwt/acre)		Return per acre[2]	
	Control	BorreGRO HA-1	% Increase	Total
Total Yield	505.3	564.0	$335.40	-

Table 2: Economic Return to Grower (Coloma, WI). Based on 6 dollars per Cwt field run.

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. In this trial, no precipitation was observed when BorreGRO HA-1 was mixed with the starter fertiliser.

The results of these trials clearly indicate that potato production can be increased by the addition of BorreGRO HA-1 to standard fertility programmes. The results of

these trials also supported the results obtained in previous trials in Idaho and Texas.

CONCLUSIONS AND RECOMMENDATIONS:

Plots treated with fertiliser and 4 pounds of BorreGRO HA-1 per acre produced an average of 11.6% more potatoes than a similar plot treated with fertiliser alone. Thus, this range of product application is recommended for future plantings. BorreGRO HA-1 should be diluted for application and applied in-furrow to maximise response. BorreGRO HA-1 can be applied with acid fertilisers. This increase produced a positive financial gain for the potato grower.

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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