

## MICROSOIL FORMULA USED ON BANANAS IN ECUADOR, SOUTH AMERICA

The plantation "El Recuerdo" (The Remembrance) is located in the Santa Rosa-Buenavista Road at one kilometer of the Y of the Enamo La Victoria Parish, Santa Rosa State, Ecuador, South America.

The purpose of the test was to determine the effectiveness of MicroSoil when used in conjunction with reduced amounts of chemical fertilizer on gran cavendish bananas.

The initial test was conducted on 10,000 square meters of cultivated land on which bananas have been grown for many years.

The control area was fertilized every 4 months with 16-17 50 kg sacks of urea 46-0-0. In addition to that, 400-600 grams of potassium was applied per banana plant every 4 months.

The testing area to which MicroSoil was applied was fertilized with only 8-9 50 kg. sacks of urea 46-0-0 along with the usual 400-600 grams of potassium per banana plant. This was done every 4 months. MicroSoil was applied at the rate of 1 liter per hectare and at the same time the fertilizer was applied. The MicroSoil concentrate was diluted at a rate of 1 part MicroSoil to 100 parts water and applied according to the manufacturer's recommendations.

The fertilizer and MicroSoil were applied 15 days after the application of nematicida.

### Test Results:

1. From the third month on, there was a significant change in the tilth of the soil. Where the soil had been compacted (dense), it was now loose (free).
2. After three months of significantly positive observations, and due to the fact that there were no negative effects, it was decided that MicroSoil would be used with a 50% reduction of urea on the entire 170 hectares of banana plants.

The following results and observations were documented at the end of 1 year, indicating the results realized by using MicroSoil in conjunction with reduced amount of chemical fertilizer.

CHART OF REGISTERED VARIATIONS AS A RESULT OF THE USE AND APPLICATION OF MICROSOIL		
	<b>Control</b>	<b>MicroSoil</b>
Urea Sacks/Ha/Year	16-17	8-9
Muriato "	12	22-24
Lime "	15	0
Nematicida	No variation	No variation
pH (average)	6.1	7.1
Live Roots (average)	60%	75%
Production Bunch/Ha/Week	34.6	38
# Lands/Bunch (average stand)	8	9-10
Bunch Weight (average lbs)	75	82.6
Cutting (# of sweeping weeks)	14-15	13
Conversion	1.2	1.35
Population (average/Ha)	1550	1550
The plants overturn	5%	2%

#### OBSERVATIONS BASED ON ABOVE DATA:

1. The pH increased from 6.1 to 7.1 without any type of liming (white washing).
2. There was a noticeable decrease in the need for nitrogenous fertilizer by up to 50%, which is substantial as this was just the first year of using MicroSoil in the field.
3. The growers believe that MicroSoil contributed to optimizing the crop fertilization in the sense that the required quantity of fertilization was assimilated more effectively by the plants due to the increased capacity of the cation exchange. Note: The above was also demonstrated when MicroSoil was used during a test on burmuda grass in Boca Raton, Florida. ([Click here to go to the test on burmuda grass](#)).
4. There was an increase in the quantity and quality of the bananas, including an increase in weight. Furthermore, there was an overall 21% increase in crop yield realized by the end of the harvest season.
5. The growers were amazed at the increase in soil tilth and the balancing of the pH without liming.
6. It was observed that in the analysis of live root percentages, there had been an increase which indicated that even though MicroSoil is not a "nematicide," it may have had an indirect effect on the biological control of nematodes simply by increasing in the organic matter in the soil.

The test was conducted in both good and poor soils with very similar results.

The type of banana referenced here is a 12 month crop. It is highly recommended that for crops which have a long growing cycle, such as bananas and sugar cane, that MicroSoil be applied every 4 months along with the appropriate amount of nitrogen, whether chemical or organic.

Remarks: If a farmer or grower wants to reduce or eliminate the use of chemical fertilizers, there are ways to do this provided there is a commitment on his part to alter the "conventional" methods of managing the soil. ([Click on Organic Matter](#)).