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Effect of MicroSoil® on Production of Peppers in Winter Greenhouses Conducted in Shangdong, China



Purpose

The experiment studies how MicroSoil® improves soil conditions for fertilizer use and demonstrates how MicroSoil® enhances the growth and yield of produce under the same growth and management conditions.

Materials and Methods

Testing variety: "Yellow goat horn" Pepper

Date of seeding: September 5, 1996 - December 8, 1996

Date of transplanting: December 8, 1996

Date of harvesting: May 29, 1997

Pepper seedlings were separated into two greenhouses. In one greenhouse, MicroSoil® was added to the seedlings, while in the other greenhouse, seedlings were not treated with MicroSoil®. The untreated seedlings were used as a reference (control). Both greenhouses have been used to plant peppers continuously over a three-year period. The area of each greenhouse is 480M². The management and growth conditions in each greenhouse are the same.

MicroSoil® was added to the greenhouse soil during the experiments. It was first applied on January 26, 1997. The second application was March 5, 1997.

Results

Below, Table 1 shows that the vegetative development of treated peppers was enhanced significantly. MicroSoil® increased the number of effective (large) leaves per plant and, therefore, increased the area for photosynthesis



MicroSoil® Treated
36in. "Yellow goat horn" Peppers
Compared to Normal Growth of only 18 in.
(same day as photo to the right)



"Yellow goat horn" Peppers -
18 in. Normal Growth

Table 1. Effects of MicroSoil® on Vegetative Growth of Greenhouse Peppers

| Treatment | Date of Measurement | # Total Leaves | #Effective (Lg) Leaves | Plant Height (cm) | Rootstock in Diameter(cm) |
|------------|---------------------|----------------|------------------------|-------------------|---------------------------|
| MicroSoil® | Mar 28 '96 | 328 | 201 | 46 | 1.4 |
| Reference | Mar 28 '97 | 316 | 156 | 45 | 1.4 |
| MicroSoil® | May 27 '97 | 618 | 309 | 112 | |
| Reference | May 27 '97 | 596 | 264 | 100 | |

Note: # leaves was the average number of all plants. The rootstock was measured in diameter above the ground.

Table 2 shows clearly that MicroSoil® increased the yield and improved the quality of peppers which resulted in higher economic value.

Table 2. Effects of MicroSoil® on Yield and Quality in Greenhouse Peppers

| Treatment | Yield | Economic Value (\$) | Taste Quality |
|------------|-------|---------------------|------------------------|
| MicroSoil® | 3,569 | 15,875 | Spicy aroma and flavor |
| Reference | 2,895 | 11,725 | Spicy |

Conclusions

Applying MicroSoil® increases the yield and enhances the efficiency of photosynthesis for the production of pepper plants. MicroSoil® improves soil conditions for fertilizer use, decomposes excessive harmful substances and enhances air permeability in soil. From the viewpoint of pepper growers, peppers have a desirable aroma and flavor when soybean meal fertilizer is added during cultivation. MicroSoil® has similar characteristics to soybean meal fertilizer and also gives peppers a desirable aroma and flavor.

There are many greenhouses in the village where the experiment was conducted. The soil in the greenhouse treated with MicroSoil® had the highest yield of peppers in the village. Mr. Liu who applied MicroSoil® on peppers had a higher yield and income than the other growers. Therefore, we conclude, using MicroSoil® on peppers cultivated in greenhouses is an important factor in increase yield.