

Soil Technologies Corp.
Research and Development Department



Research Report

Title: Effect of Microp on Rice Fields in Thailand

Location: Bangkok, Thailand

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Crop: Rice

Date: 1990

Abstract:

The purpose of this study is to compare the effects of the biofertilizer Microp¹ to traditional chemical fertilizers used in rice paddy fields. Microp was applied to experimental fields of transplanted and direct seeded rice plants. The yields of the rice paddy fields treated with Microp were then compared to a control field that received the traditional fertilizer treatments of Ammonium Phosphate² and Urea³. Findings from these tests demonstrate that fields treated with Microp produced gross yields equivalent to the chemical fertilizer protocol used in this study.

Methods:

Microp was applied to transplanted as well as direct-seeded rice at rice experimental fields at Kasetsart University, Kamphaeng Saen Campus during August 1990 - November 1990.

Transplanted Rice

Rice cultivar Kao Dok Mali 105 (KDML 105) was transplanted on August 7, 1990 into two fields. The first field was treated with Microp four times: Aug. 10, Sept. 10, Oct. 10, and Nov. 10, 1990. The second field was the control plot, which received Ammonium Phosphate (25kg/rai) (1 ha:6.25 rai or 1 rai:0.16 ha) before and urea (46% N) (10 kg/rai) at panicle initiation. The fields were harvested on Nov. 28, 1990.

Direct Seeded Rice

¹Microp is an OMRI listed biofertilizer and soil amendment manufactured by Soil Technologies Corp. in Fairfield, Iowa, USA

²Ammonium phosphate is a chemical fertilizer CAS # 10361-65-6

³Urea is a chemical fertilizer CAS # 57-13-6

Rice cultivar RD 2I was broadcasted on July 10, 1990. Two fields were prepared, as with transplanted rice. The first field was sprayed with Microp three times: Aug. 17, Sept. 18, and Oct. 17, 1990. The second field was established as the control (without MICROP) which received ammonium phosphate 16-20-0 (30 kg/rai) at planting and urea (46% N, 10 kg/rai) at panicle initiation. Rice crop was harvested on Nov. 10, 1991

Results:

Findings from these tests demonstrate that fields treated with Microp produced gross yields equivalent to the chemical fertilizer protocol used in this study.

Table 1: Results for Transplanted Rice

| Treatment | Plant Height | No of Panicle/m ² | No of grain/panicle | 1,000 grain weight | Grain Yield (kg/rai) |
|---------------------------|--------------|------------------------------|---------------------|--------------------|----------------------|
| Microp | 158 | 192 | 61 | 28 | 440 |
| Ammonium Phosphate + Urea | 161 161 | 188 | 60 | 28 | 436 |

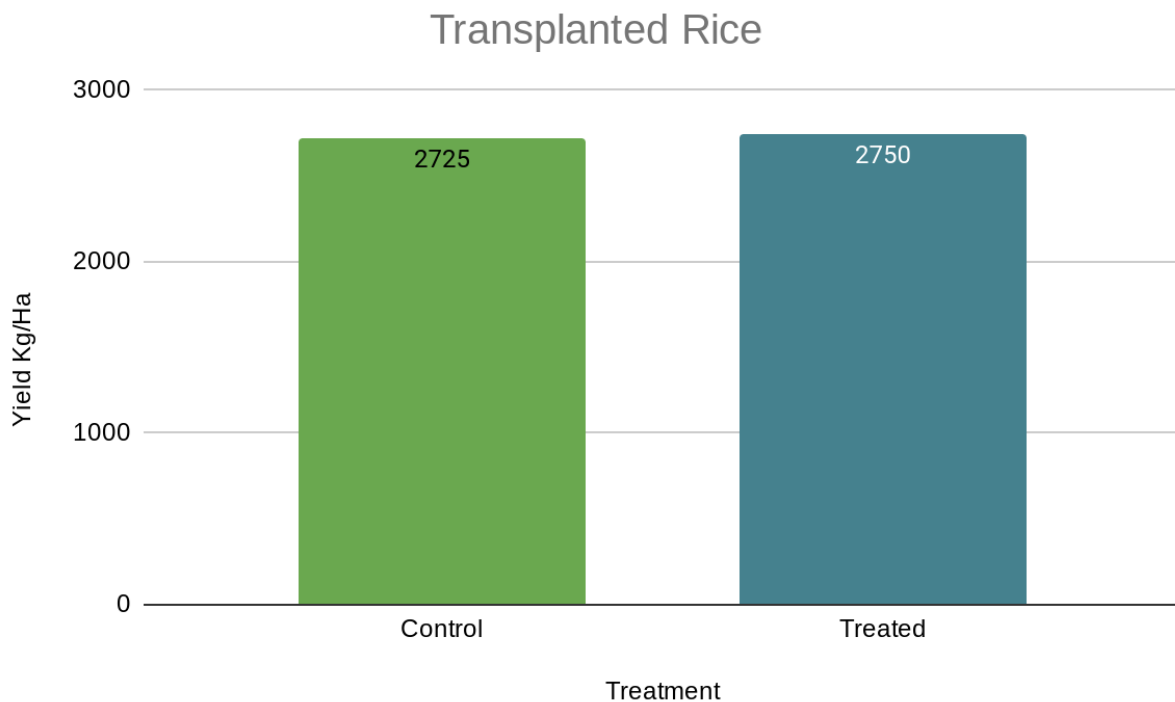
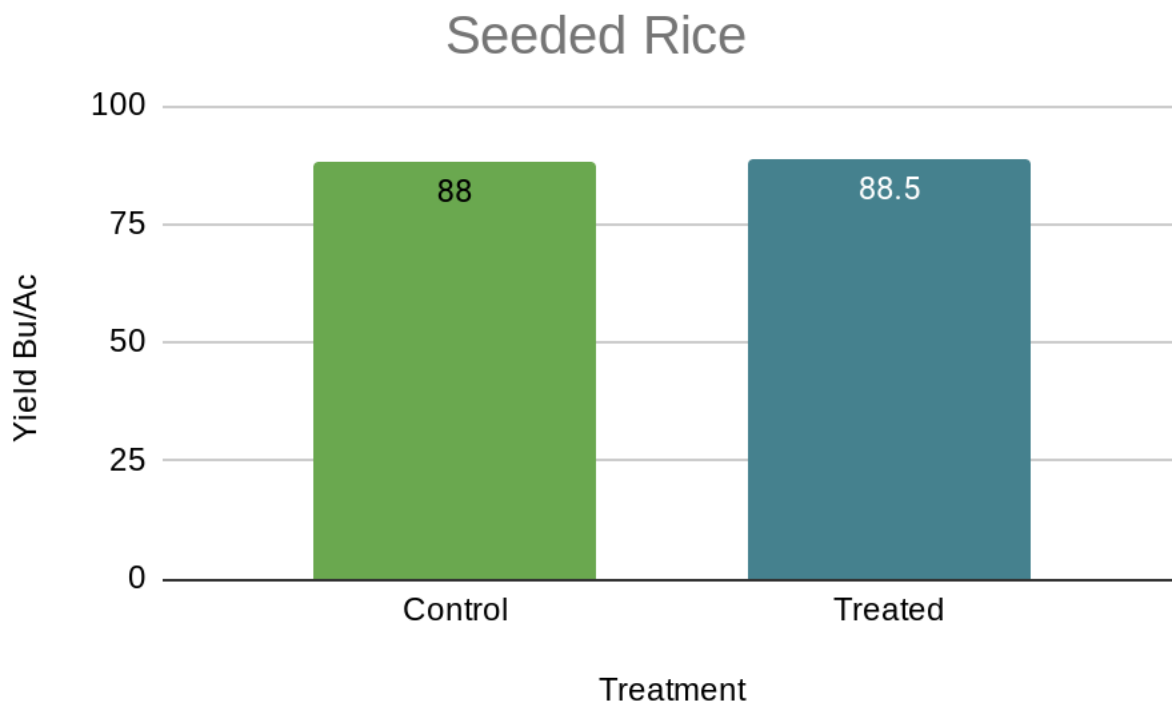


Table 2: Results for Direct Seeded Rice

| Treatment | Plant Height | No of Panicle/m ² | No of grain/pa nicle | 1,000 grain weight | Grain Yield (kg/rai) |
|---------------------------|--------------|------------------------------|----------------------|--------------------|----------------------|
| Microp | 135 | 310 | 74 | 29 | 724 |
| Ammonium Phosphate + Urea | 138 | 312 | 76 | 29.5 | 720 |



Conclusions:

Findings from these tests demonstrate that fields treated with Microp produced gross yields equivalent to the chemical fertilizer protocol used in this study. In direct seeded rice plants, three applications of Microp produced gross yields equivalent to the chemical fertilizer used in this study. In transplanted rice, four applications of Microp produced gross yields equivalent to the chemical fertilization used in this study. These results indicate that the biofertilizer Microp produces results equivalent to the conventional counterpart.