

## **Report on EM from the Philippines**

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### **Introduction**

The entry of any fertilizer, biological material, pesticide and the like requires approval from the Fertilizer and Pesticides Authority. EM is a biological product, non-toxic and safe to use in connection with its utilization as inoculant for organic matter decomposition, as claimed by APNAN. Everytime APNAN would send EM to the Philippines for research purposes, the Department of Agriculture has to certify that it is non-toxic. For this purpose the Bureau of Soils and Water Management conducted a toxicity test on chicken and tomato plants. The objectives of these studies are:

To determine if EM solution could be toxic to animals and plants.

To determine if EM could decompose coco coir dusts.

To determine if decomposed EM-treated coir dusts would not affect adversely seed germination and growth of seedlings.

One week old healthy chicks were given EM in their drinking water for more than one month. The chicks did not show any abnormalities nor developed any disease. Tomato seedlings were sprayed with EM solution and observed until maturity. No adverse effects were observed.

EM was used either alone or in combination with a cellulolytic fungi in the decomposition of coconut coir dusts. The accumulation of coir dusts has become an environmental problem in the coconut industry. One plant can accumulate a mountain of coir dust estimated to be approximately 60,000 cubic meters. The conversion of coir dusts into fertilizer materials as soil amendment is very important. The use of EM in the preliminary studies on coco coir dust decomposition showed that EM could be a promising inoculant in the recycling of coco dust for agricultural production.

### **Methodology**

#### **Toxicity Test of EM on Chickens**

Twelve one week old chicks were divided into two sets and placed into two cages. Six were given EM in drinking water daily while the other six chicks served as control. The observation was carried out for 45 days.

#### **Toxicity Test on Tomatoes**

Six tomato seedlings were sprayed weekly with EM solution for 3 consecutive weeks. Six other tomato seedlings were sprayed with distilled water only. The plants were observed until maturity for abnormalities or diseases.

#### **Coco coir dust**

Different coco coir dust mixtures with synthetic inorganic fertilizers and chicken manures were prepared. Sufficient water was added to each mixture to facilitate active decomposition process. To the enriched coco coir dusts, EM solution was added either alone or in combination with a cellulolytic fungus. The materials were incubated for 2 months. Mixing and addition of water were done when needed. The rate of decomposition of each mixture was

observed for two months. Initial data on the properties of the coir dusts, chicken manure mixtures were compared with the laboratory data obtained after 2 months of incubation.

## **Results**

### **Toxicity test on chicken**

The EM-sprayed chicks did not developed any abnormalities or diseases. Their average weight at harvest after eight weeks were comparable with the control .

### **Toxicity test on tomatoes**

Tomato seedlings sprayed with EM were as healthy as the control plants until maturity.

### **Coco coir dust**

The decomposition of coco coir dusts with EM alone as inoculant was slow. However, in combination with a cellulolytic fungus the decomposition of the coir dusts was hastened. One criteria used to measure the rate of decomposition was the comparison of the percentage of organic carbon present and the C:N ratio before the inoculation and after the incubation period of two months.