EFFECTS OF TANK SILT ON THE GROWTH 0F

Zea mays L.

BY
SOORIYAMOORTHY HAREENDREN

FACULTY OF AGRICULTURE

EASTERN UNIVERSITY

SRI LANKA

2010.

ABSTRACT

Tank silt is an organic sediment which can be collected from tanks / ponds during the dry season. This experiment was conducted in order to study the response of different quantity of tank silt as alternative organic manure instead of the fertilizers recommended by the Department of Agriculture (DOA). Experiment was conducted in maize plants (*Zea mays* L.). Treatments were T_1, T_2, T_3 and T_4 with the application of tank silt at the rate of 20, 30, 40 t/ha, respectively. While T5 was according to the DOA recommendation and the T6 is the control. The polyethylene bags (24 x 40 cm) were filled with the potting mixture to three fourth of its volume and the treatments were established as mentioned above.

Height of maize plant in T_5 significantly differed ($p<0.05$) from other treatments from two week after sowing (WAS) to six WAS. However, no significant difference was observed between T_4 and T_5 at 8 WAS. Highest plant height was recorded in T_5. The treatments T_4 and T_5 shown distinguished difference compared to other treatments. The difference between T_4 and T_5 at 2, 4 and 6 WAS were 20.2, 21.6 and 16.7% respectively.

In the case of average fresh weight of leaves, stems and roots per plant in T_4 and T_5 significantly differed ($P < 0.05$) from the rest of the treatments, However, no significant difference between them were observed.

Further, average dry weight of leaves, stems and roots per plant in T_4 and T_5 significantly differed ($P < 0.05$) from rest of the treatments according to Turkey's test at 5% level of significance. However, no significant differences were observed between them.

Therefore, in conclusion that the application of tank silt at the rate of 50 t/ha produce plant growth nearly identical to the performance of plants grown with the recommendation of DOA. Hence, for the first time it has been proved that the farmers can utilize the freely available tank silt for better crop production with low cost. In addition, the practice of using naturally available organic manures will facilitate to minimize the environmental hazardous.

TABLE OF CONTENTS

Page No