

## Effect of fertilizer levels on growth and yield of sweet corn

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### ABSTRACT

An experiment was conducted to study the growth and yield of sweet corn with different fertilizer doses during *kharif* season of 2006 - 2007 at College of Agriculture, Latur. The experiment was laid out in RBD with six treatments  $T_1$  (60: 30: 30 NPK kg ha<sup>-1</sup>),  $T_2$  (80: 40: 40 NPK kg ha<sup>-1</sup>),  $T_3$  (100: 50: 50 NPK kg ha<sup>-1</sup>),  $T_4$  (120: 60: 60 NPK kg ha<sup>-1</sup>),  $T_5$  (FYM @ 5 tonnes ha<sup>-1</sup>),  $T_6$  (FYM @ 5 tonnes ha<sup>-1</sup> + *Azospirillum*). The application of 100 per cent RDF through chemical produced significantly higher values of growth and yield attributes resulting in significant increase in grain and straw yield than other treatments but this treatment was fared at par with  $T_3$  (100: 50: 50 NPK kg ha<sup>-1</sup>). Therefore, it would be advisable to fertilize the sweet corn with  $T_3$  (100: 50: 50 NPK kg ha<sup>-1</sup>). The application of nutrients through FYM recorded significantly lowest values of growth and yield attributes.

**Key words :** Fertilizer doses, Growth, Yield and sweet corn.

### INTRODUCTION

Among all types of maize, Sweet corn (*Zea Mays saccharine*) has commercial importance. It has got commercial potential. Sweet corn is capturing sound market in most of the big cities of India. Most of the farmers are showing interest in growing sweet corn. Many experimental findings revealed that higher crop yield of maize grown for grain could obtain only when the plant get sufficient quantities of nutrients during their life span. Hence, the balanced fertilization is very important to get the maximum yield, so it was felt necessary to study the effect of fertilizer levels on growth and yield of sweet corn.

### MATERIALS AND METHODS

A field experiment was conducted during *kharif* season of 2006 - 2007 at Department of Agronomy farm, College of Agriculture, Latur. The soil of the experimental plot was the medium black (vertisol) with the pH 8.0, low in available nitrogen (187.4 kg ha<sup>-1</sup>), medium in available phosphorus (20.12 kg ha<sup>-1</sup>) and high in potassium (695.7 kg ha<sup>-1</sup>). The experiment was laid out in Randomized Block Design with six treatments replicated four times for doses of fertilizer  $T_1$  (60 : 30 : 30 NPK kg ha<sup>-1</sup>),  $T_2$  (80 : 40 : 40 NPK kg ha<sup>-1</sup>),  $T_3$  (100 : 50 : 50 NPK kg ha<sup>-1</sup>),  $T_4$  (120: 60 : 60 NPK kg ha<sup>-1</sup>),  $T_5$  (FYM@ 5 tonnes ha<sup>-1</sup>),  $T_6$  (FYM@ 5 tonnes ha<sup>-1</sup> + *Azospirillum*) were tried. Sweet corn was sown at 60 x 20 cm apart during first fourth night of July (10<sup>th</sup> July) half dose of nitrogenous and full dose of phosphoric and potassic fertilizer were given as basal dose, organic manners *viz.* FYM was applied as per treatments by broadcasting method at the

time of land preparation, seeds were treated with *Azospirillum* @ 3g kg ha<sup>-1</sup> of seed before sowing, remaining half dose of nitrogenous fertilizer was applied in bands as top dressing one month after sowing. All package of practices were followed as per recommendations.

### RESULTS AND DISCUSSION

#### *Yield contributing characters:*

The yield attributes of sweet corn (Table 1) like length of cob, diameter of cob, number of grains per cob, number of grain per plant, grain yield per plant and straw yield per plant were significantly influenced due to application of 100 per cent RDF through chemical fertilizers. The length of cob was found highest in  $T_4$  (120: 60: 60 NPK kg ha<sup>-1</sup>) treatment. The length of cob of  $T_3$  treatment was more than  $T_4$  treatment but diameter of cob produced in  $T_3$  treatment was less as compare to  $T_4$  treatment, which ultimately increase the grain yield per cob of  $T_4$  treatment. As there was only one cob per plant due to water stress situation occurred during early stages of crop growth. Hence, no. of grains yield per cob was same as that of no. of grains yield per plant.

As chemical fertilizer supply all the recommended nutrients early as compare to FYM and FYM + *Azospirillum*, hence, the treatments with chemical fertilizer produced more grain and straw yield per plant as compare to FYM and FYM + *Azospirillum* applied plots. Among the chemical fertilizer, the 100 per cent RDF treatment ( $T_4$ ) produced more grain and straw yield per plant as compare to other treatments which were fertilized with less than RDF *i.e.*  $T_1$ ,  $T_2$ ,  $T_3$ .

FYM + *Azospirillum* treatment ( $T_6$ ) produced more

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