

## Comparative study of chemical and biofertilizers on growth and yield of methi [*Trigonella foenum-graceum* (L.)]

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### SUMMARY

An experiment was conducted in randomized plastic pots with two replications in the *kharif* season of 2006-07, at College of New Arts, Commerce and Science, Parner (M.S.) to see the effect of urea, 20:20:0, 10:26:26 and blue green algae (*Anabaena*), vermicompost, *Azospirillum* and their various combinations on growth and yield attributes and yield of biomass in methi (*Trigonella foenum-graceum* L.). The results indicate that the effect of recommended dose of vermicompost was significantly superior to the effect of chemical fertilizers and other biofertilizers and other combinations.

**Key words :** Chemical, Biofertilizer, *Trigonella foenum-graceum*.

Among the production factors of methi (*Trigonella foenum-graceum* L.), nutrition is a major one. At present, nutrition for methi is being provided by manures and chemical fertilizers, which are in short and costly. Therefore, it has become imperative to conduct for complementary resources which can minimize the use of chemical fertilizers. One possible solution which uptill now has not been sufficiently explored is the biological approach, particularly; the use of micro-organisms like blue green algae (BGA), vermicompost, and *Azospirillum*.

With the above mentioned facts in view the present investigation was undertaken to study the effect of chemical and biofertilizers on growth and yield (bio mass) of methi.

### MATERIALS AND METHODS

The experiment was conducted during *kharif* season of 2006-2007 at the College of New Arts, Commerce and Science, Parner, Distt. Ahmednagar (M.S.). The soil of experiment field was clay in textured, neutral in reaction (pH 7.5) and had low nitrogen, medium phosphorus and high potash content (500 kg/ha). The experiment was conducted in plastic pots with two replications.

#### Application of chemical and biofertilizers:

The nutrients viz., Urea, N.P.K fertilizers like 20:20:0 and 10:26:26 was provided @ 3 g/10 kg. of soil. The biofertilizers like vermicompost, blue green algae

(*Anabaena*) and *Azospirillum* were provided to the plants @ 10 g/10 kg of soil. The chemical and biofertilizers were applied in soil 15, 30 and 45 days of planting. One pot served as control.

Five plants were selected in each pot for taking periodic observations (Table 1). Various parameters like length of shoot and root, number of leaves, fresh weight and dry weight of shoot and root were recorded. Pure methi seeds were used as a experimental crop.

### RESULTS AND DISCUSSION

After 15, 30 and 45 days of planting, the periodic observations were taken. The effectiveness of all the treatments was significantly superior to control in respect of shoot and root length, number of leaves, fresh and dry weight of shoot and root etc. (Table 1).

The significantly higher shoot and root length were observed in vermicompost treatment over other combinations. Fresh weight of shoot (12.5 g) and root (2.8 g) were observed more in vermicompost combination compared to other treatments after 45 days of planting.

Dry weight of shoot (6.35 g) and root (1.7 g) were observed in the plants treated with vermicompost. Chemical fertilizer 20:20:00 also exhibited good effect on the dry weight of shoot and root.

Number of leaves (71) observed more in 10:26:26 combination. Significantly higher number of leaves (65) were also observed in vermicompost treatment over other combinations.

The results indicate that, the effect of recommended dose of vermicompost was significantly superior to the effect of biofertilizers and other combinations as well as compared with control. Imam and Badawy (1978) and Gaur (1988) have reported beneficial effect of *Azotobactor* on the growth of potato plants. Kumar

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