

Response of long duration finger millet (*Eleusine coracana* L.) variety to different levels of nitrogen under rainfed condition

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ABSTRACT

Promising finger millet varieties were tested for their response to nitrogen application under rainfed condition during *Kharif* 2005-06 at Zonal Agricultural Research Station, Shenda Park, Kolhapur. The results revealed that significantly highest grain yield (23.68 q/ha) was recorded by the variety PR202 with application of 90 kg/ha over local check and was at par with the other varieties. The significantly highest grain yield (20.92 g/ha) was recorded with the variety VR 875 with 60 kg N application. However, the significantly highest straw yield was recorded by all the varieties with 90 kg N application both 30 and 60 kg N application.

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Key words : Finger millet, Rainfed, NPK uptake, Soil status

INTRODUCTION

Among small millets, finger millet (*Eleusine coracana* L.) locally known as Nagli/ Nachni/ Ragi is the most important crop grown in Maharashtra State, which alone account for about 50 per cent area and more than 2/3rd production. The yield of finger millet is very low in the state as the crop is mostly grown along the hill sides on sloppy land on light textured soils. It is also coupled with negligence in adoption of improved varieties, no cash inputs like fertilizers and improper method and time of sowing. Recent studies (Satyanaryana *et al.*, 1978; Gautam *et al.*, 1982) indicated that there was good response of finger millet to nitrogen even under rainfed condition. Hence, promising finger millet varieties were tested for their response to nitrogen application under rainfed condition.

MATERIALS AND METHODS

Field experiment was conducted during *Kharif* 2005 at the Zonal Agricultural Research Station, Shenda Park farm, Kolhapur on sandy loam soil, with pH -7.2, EC-0.10 mmhos/cm., organic carbon 0.96%, available N 101, P 10.6 and K 198 kg/ha. The experiment was laid out in Factorial Randomized Block Design with three replications. The gross and net plot sizes were 3 x 4.5 m² and 2.4 x 4.2m², respectively. The treatments consisted of 20 combinations due to five varieties *viz.*, V₁-VR 840, V₂ - VR 875, V₃ - OEB 22, V₄ -PR202, V₅-RAU 8 and four nitrogen levels *viz.*, N₀-0kg, N₁-30 kg, N₂ - 60 kg, N₃ -90 kg N/ha. The crop was dibbled at 30 x 10 cm

spacing in the first week of July. The half quantity of nitrogen was applied through urea as per treatment and 40 kg P₂O₅ and 25 kg K₂O/ha was applied through single super phosphate and murate of potash as basal dose, remaining half quantity of nitrogen was applied one month after sowing. Plant protection measures were undertaken as and when required. The soil samples were collected after harvest of crop and were analyzed for available nutrient status and representative samples of grain and straw at harvest from different treatments were analyzed for uptake studies by following standard method. The uptake of NPK was determined on the basis of dry matter of grain and straw production in different treatments. The results of all the observations were statistically analyzed by applying 'F' test.

RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been summarized under following heads:

Effect of varieties :

The data presented in Table 1 indicate that, among the varieties, the variety VR 875 recorded the significantly highest thousand grain weight (3.195 g) and grain yield (17.22q/ha) over local check. However, it was at par with the variety VR 846, OEB 10 and PR202. There was no significant difference in growth parameters and straw yield among the genotypes. The highest straw yield (41.63q/ha) was recorded with the variety VR 875. Chavan *et al.* (1995) reported that, there is remarkable influence