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Evaluation of banana cultivars under different fertilizer regimes

C.D. BADGUJAR, **C.V. PUJARI AND** N.M. PATIL

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ABSTRACT

The present study was conducted to evaluate the horticultural performance of different banana cultivars with low and high level of fertilizers application under Jalgaon conditions during 1998-1999, 2000-01 and 2002-03 at Banana Research Station, Jalgaon. The experiment was laid out in Factorial Randomized Block Design with four cultivars namely Basrai, Shrimanti, Grandnaine and Madhukar and two levels of fertilizer inputs consisting of low level of fertilizer inputs (10kg FYM + 0.5 Kg neem cake + 100 : 40 g NPK / plant) and high lvel of fertilizer inputs (20 kg FYM + 1 kg neem cake + 200 : 40 200 g NPK / plant) which were replicated three times. The results revealed that all the cultivars recorded better performance with respect to growyh, duration and yield under high input level of fertilizers suggesting that banana responds well to the optimum fertilizer applications. However the cultivar Madhukar (AAA) recorded highest growth and yield performance under both low as well as high input level of fertilizers. It had maximum number of hands per bunch (11.44), fingers per bunch (186), bunch weight wt. (25.36 kg) and yield (112.62 t/ha) under high fertilizer regime. However it fetched very less monetary returns (Rs. 1,46,336/- and Rs. 1,55,698/- ha, respectively, under both the levels of fertilizer inputs) due to poor market acceptability only because of its smaller finger size. Among the cultivars studies, Shrimanti (AAA) had better market acceptability and fetched maximum monetary returns (Rs. 2, 24, 452 /- ha.) The cultivar Shrimanti also had commendable growth, duration and yield performance. Further it was observed that the interactions due to cultivars and fertilizer inputs were non significant. Considering overall performance and market acceptability, the cultivar Shrimanti (AAA) has emerged as the most suitable cultivar for cultivation in Maharashtra.

See end of the article for authors' affiliations

Correspondence to:

C.V. PUJARI
Banana Research Station,
JALGAON (M.S.) INDIA

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Banana plays significant role in the economy of Maharashtra and is grown on 72,200 hectare area ranking second in India as regards area. Although Maharashtra ranks second in area, it ranks first in production as well as productivity with second in area, it ranks first in production as well as productivity with 45346 metric tone production and 62.9 mt productivity/ ha (Singh, 2007). Dwarf Cavendish group forms the basis of commercial banana industry in Maharashta and Basrai (AAA), Shrimanti (AAA), Grand Naina (AAA), Madhukar (AAA) are important commercial cultivars which belongs to this group.

Banana being a gross feeder requires high amount of nutrients for proper growth and production (Nalina and Kumar, 2007) It is of paramount importance to supply adequate amount nutrients through fertilizers and manures to exploit the yield potential of banana. Therefore, the present study was undertaken to assess the performance of different banana cultivars undr low and high input levels of fertilizers.

MATERIALS AND METHODS

The present investigations were carried out at Banana Research Station, Jalgaon 1998-1999, 2000-01 and 2002-2003. The experiment was laid out in Factorial Randomized Block Design with four cultivars namely Basrai, Shrimanti, Grandnaine and Madhukar and two inputs levels of fertilizer consisting of low inputs - 10kg FYM + 0.5 Kg neem cake + 100 : 40 g NPK / plant and high inputs -20 kg FYM + 1 kg neem cake + 200 : 40 200 g NPK / plant which were replicated three times. The uniform healthy suckers weighing 450g to 750 g were used for planting and planting was done in the firsh fortnight of June. Pair row planting system following 0.9 x 1.2 x 2.1 m was used for the present study. A unit of twelve plants was maintained in each treatment. As per the treatment, complete dose of FYM, neeem cake and phosphorous was applied at the time of planting. Of the total quality of nitrogen, 75 % nitrogen was applied in four equals splits at 30, 75, 120 and 165 days after planting. The potassium was applied at 30, 165, 255 and 300 days after planting in four equal splits.

The observations were recorded on growth parameters like pseudostem height (cm), pseudostem girth (cm), total number of levels; duration parameters like days for flowring and days for harvesting and yield attributes