

## Effect of integrated nutrient management on yield and quality of ber (*Zizyphus mauritiana* Lamk.) cv BANARASIKARAKA

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### ABSTRACT

The experiment was carried out at Main Experiment Station, Department of Horticulture, Narendra Deva University of Agriculture and Technology, Kumarganj, Faizabad (U.P.) during the year 2005-06 and 2006-07, to evaluate the response of organic manures, inorganic fertilizers and biofertilizers on yield and quality of ber fruit cv. Banarasi Karaka. The maximum fruit yield, length, width, weight and quality parameters viz., TSS, ascorbic acid, reducing sugar, non-reducing sugar, total sugar and minimum acidity content was recorded with the soil application of FYM+100%NPK+*Azotobacter*+PSB closely followed by FYM+75%NPK+*Azotobacter*+PSB, during both the year of experimentation.

**Key words :** Integrated Nutrient Management, Yield, Quality of ber

**B**er (*Zizyphus mauritiana* Lamk.) is one of the most important fruit which belongs to family Rhamnaceae. It is also known as Chinese date or Chinese fig and commonly consider as poor man's fruit. This fruit probably originated in India. It is reported to grow in other countries like Iran, Syria, Australia, USA, France and certain parts of Italy, Spain, Africa etc. Precisely it is seen to grow under tropical and sub-tropical as well as Mediterranean region of the world. The major growing state is India like Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Gujrat and Maharashtra. It is cultivated widely for its resistance to grow in drought and other diversified soil and climatic condition. In Uttar Pradesh, ber orchards are found around Varanasi, Aligarh, Fatehpur, Faizabad, Agra and Raibareilly district (Singh *et al.*, 1973). It is one of the most nutritiou's fruit and good source of vitamin A, B and C. Ber fruits are richer than apple in proteins, phosphorus, calcium, carotene and ascorbic acid.

The importance of integrated nutrient management involves the combined use of various plant nutrient sources, however, assured significance role in fruit production and quality of fruits. The present investigation was, therefore, undertaken to evaluate the combined effect of organic manures, biofertilizers and inorganic fertilizer on yield and quality of of ber fruits. the success.

### MATERIALS AND METHODS

The experiment was carried out on eight years old plant of ber cv. BANARASIKARAKA, having uniform vigour were selected at Main Experiment Station (Horticulture) of Narendra Deva University of Agriculture and

Technology, Kumarganj, Faizabad (U.P.) during the year 2005-06 and 2006-07. The experiment was laid out in Randomized Block Design (RBD) with following ten treatments and each treatment was replicated three times.

T<sub>1</sub> (Control), T<sub>2</sub> (FYM), T<sub>3</sub> (NPK), T<sub>4</sub> (FYM + 100% NPK), T<sub>5</sub> (FYM + 75% NPK), T<sub>6</sub> (FYM + 50% NPK), T<sub>7</sub> (FYM+*Azotobacter*+PSB), T<sub>8</sub> (FYM + 100% NPK + *Azotobacter*+PSB), T<sub>9</sub> (FYM + 75% NPK + *Azotobacter*+PSB) and T<sub>10</sub> (FYM + 50% NPK + *Azotobacter*+PSB). The observations were recorded on fruit yield, length, width, weight and quality parameters viz. TSS, ascorbic acid, reducing sugar, non-reducing sugar, total sugar and acid content of ber fruits.

### RESULTS AND DISCUSSION

Data presented in Table 1 indicated that the maximum fruit yield, length, width and weight was recorded with the soil application of FYM+100%NPK+*Azotobacter*+PSB which was at par with FYM+75% NPK+*Azotobacter*+PSB. However, minimum in control during both the year of experimentation. The present findings are also supported with the results of Shahoo and Singh (2005) observed highest fruit yield/ha (17.94 tones) with the application of 6 kg /ha *Azotobacter* with NPK@ 150:75:100 kg/ha. The enhancement in yield, fruit length, width and weight by these treatments was mainly due to proper supply of nutrients and induction of growth hormones, which stimulated cell division, cell elongation, increase in number and weight of the fruits, better root development and better translocation of water uptake and deposition of nutrients.

The data presented in Table 2 indicated that the