



## Effect of different sources of nitrogen on growth and yield of guava (*Psidium guajava* L.) cv. SARDAR

P.A. DHOMANE, A.S. KADAM, S.K. LAKADE AND V.R. GHARAGE

### ABSTRACT

In order to estimate the effect of organic and inorganic sources of nitrogen the present experiment was conducted on 5 years old Sardar guava trees growing at Instructional- cum Research Farm, Department of Horticulture, College of Agriculture, Latur during 2009-2010. For the investigation different sources of nitrogen viz., urea, vermicompost, neem cake, FYM, poultry manure and green manure in different combinations were used. The results of experiment revealed that integration of organic manures and inorganic fertilizers was more effective in increasing growth and yield of guava trees than the inorganic fertilizers alone. Among the various combinations 75% of nitrogen through urea along with 25% nitrogen through neem cake ( $T_4$ ) was found the best over all the treatments in respect of vegetative growth parameters like increasing tree height (39.7 cm), tree spread (38.00 cm E-W), stem girth (5.30 cm), shoot length (24.82 cm), reproductive growth parameters like maximum number of flowers (17.97) and fruits (11.8) per square meter, fruit set (65.57%) and yield parameters like weight of fruit (243.80 g), yield per tree (58.1 kg) and yield per hectare (23.26 tonnes).

See end of the article for authors' affiliations

Correspondence to:

**P.A. DHOMANE**

College of Agriculture,  
LATUR (M.S.) INDIA

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Guava 'Apple of tropics' is one of the most common fruit of India. It is the fourth most important fruit in area and production after mango, banana and citrus in the country and covers an area of about 1,78,000 ha. with a production of around 19,75,000 MT (Anonymous, 2008). Guava fruit is a rich source of vitamin C and vitamin A along with minerals like iron, calcium and phosphorus. Owing to excellent taste and flavor, high nutritional value and wide availability at moderate price the fruit often called as 'Poor man's apple'. It is quite hardy and remunerative crop. But the yield and quality of fruit is poor due to either no manuring or unbalanced manuring. Nitrogen is required in relatively greater amount by fruit plants is universally accepted. Under intensive farming neither chemical fertilizers nor organic manures alone can achieve the production sustainability. Fertilizer experiment conducted in India showed that guava has given high response to inorganic fertilizers along with organic manures (Shanker, 1966). Literature pertaining to use of organic manures alone or in combination to fulfill the nutrient need of guava trees is very scanty. Hence, the present investigation entitled effect of different sources of nitrogen on growth and yield of guava (*Psidium guajava* L.) cv. SARDAR

was planned to chalk out the nutritional schedule with a view to improve the growth and yield of guava fruits.

### MATERIALS AND METHODS

The experiment was carried out at the Instructional-cum Research Farm, Department of Horticulture, Latur on five years old guava trees of cv. SARDAR spaced 5x5 meters during the year 2009-10. The design of experiment was Randomized Block Design with 15 treatments replicated twice. The plot unit for each treatment consisted of two trees. A fixed dose of nitrogen (800 g/ plant ) was applied to all treatments through inorganic and organic sources in different proportion as given below :  $T_1$  - 100 % N through urea (Control),  $T_2$  - 100% N through organic manures,  $T_3$  - 75 % N through Urea + 25 % N through FYM,  $T_4$  - 75 % N through Urea + 25 % N through Neem cake,  $T_5$  - 75 % N through Urea + 25 % N through Poultry manure,  $T_6$  - 75 % N through Urea + 25 % N through Vermicompost,  $T_7$  - 75 % N through Urea + 25 % N through Green manure,  $T_8$  - 50 % N through Urea + 25 % N through FYM +25 % N through Neem cake,  $T_9$  - 50 % N through Urea + 25 % N through FYM + 25 % Poultry manure,  $T_{10}$  - 50 % N