



Research Paper

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Studies on the effect of different sources and levels of nitrogen on growth and yield of papaya (*Carica papaya* L.) cv. COORG HONEY DEW

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ABSTRACT : A field experiment was conducted at Research Farm, Department of Horticulture, Allahabad Agricultural Institute Deemed University, Allahabad to evaluate the effect of different sources and levels of nitrogen on growth and yield of papaya cv. Coorg Honey Dew. The experiment was laid out in a Randomized Block Design (RBD) with seven treatments consisting of nitrogen (150g, 250g, and 350g per plant as urea) and nitrogen (150g, 250g and 350g per plant/year as ammonium sulphate) and untreated control, each treatment was replicated four times. The maximum average plant height (168 cm), number of leaves per plant (57) and intermodal length (2.60 cm) were noted under the treatment T₂ (N @ 250g per plant per year as urea) whereas the minimum plant height (140 cm), no. of leaves/plant (44.25) and intermodal length (2.10 cm) were recorded under the treatment T₄ (control). Fruit initiation at maximum height (97 cm) was recorded under the treatment T₃ (N @ 350g per plant per year as urea) which was followed by treatment T₂ (N @ 250g per plant per year as urea). The least days taken to first flower initiation (122.00), days taken to fruit set (144.50) and fruit harvest after fruit set (85.50) were recorded under the treatment T₂ (N @ 250g per plant per year as urea) whereas maximum days taken to flower initiation (157.75), fruit set (178.50) and fruit harvest after fruit set (94.6) were recorded under the treatment T₄ (control). The highest average number of flowers (40.75), number of fruits per plant (26), average fruit weight (1624.75g) and average fruit yield per plant (42.32 kg) was recorded under the treatment T₂ (N @ 250g / per plant per year as urea) which was followed by treatment T₇ (N @ 350g per plant per year as ammonium sulphate). On the other hand, the minimum number of flowers per plant (28), number of fruits per plant (17), average fruit yield per plant (18.11kg) was recorded under the treatment T₄ (control).

KEY WORDS : Papaya, Urea, Ammonium sulphate, Growth, Yield

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Papaya (*Carica papaya* L.) is widely grown in the commercial orchards as well as in the kitchen gardens due to its early bearing habit and multipurpose uses. Papaya is a wholesome fruit rich in vitamin-A (2000 IU/100mg), vitamin-B and C. Papaya contains substantial quantities of carbohydrates, minerals, calcium, vitamins, phosphorus and iron etc. besides being rich in papain. Papaya is usually dioecious but hermaphrodite and gynodioecious types are also recognized. The fruit is a large hollow berry, elongated or globular in shape. Papaya is an important fruit of the tropical and subtropical regions of India. New high yielding varieties

with better fruit quality are needed to boost the production under these varied growing conditions. A profitable yield of papaya depends upon various factors like spacing, irrigation, weed and insect pest management etc. but the application of optimum fertilizer is one of the prerequisite for higher production. Proper nutrient management in papaya is essential to get higher yield and quality fruits in papaya (Purohit, 1984). Nitrogen is the only element that could be directly related to fruit production (Koo, 1957). Keeping in view the above facts, however, information is not available under Allahabad agro climatic conditions of U.P. The study was conducted to