



Research Paper

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Integrated nutrient management studies for some quality characters of phalsa

■ R.B. RAM, KULDEEP¹, M.L. MEENA¹, RUBEE LATA¹ AND NAVALDEY BHARTI¹

Members of the Research Forum

Associated Authors:

¹Department of Plant Science (Horticulture), Babasaheb Bhimrao Ambedkar University, LUCKNOW (U.P.) INDIA

Author for correspondence :

R.B. RAM

Department of Plant Science (Horticulture), Babasaheb Bhimrao Ambedkar University, LUCKNOW (U.P.) INDIA
Email : rbram@rediffmail.com

ABSTRACT : An experiment was carried out on integrated nutrient management in phalsa comprising eight treatments combination of urea, SSP, MOP, *Azotobacter* and PSB during the year 2009-2010. Results revealed that the treatment T₃ (100g urea + 120g SSP + 20g MOP + 8Kg FYM + *Azotobacter* + PSB) and T₄ (50g urea + 60g SSP + 10g MOP + 10kg FYM + *Azotobacter* + PSB) performed better in terms of physical characters of fruit (fruit length, fruit breadth, weight of fruit, juice percentage and pulp/stone ratio) and chemical parameters (TSS, total sugar, reducing sugar, non-reducing sugar, acidity and ascorbic acid content). Based on the performance of these treatment combinations it can be advocated for the integrated nutrient management practices in phalsa.

KEY WORDS : Phalsa, INM, Quality

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Phalsa (*Grewia subinequalis* D.C.) is native to India belongs to the family Tiliaceae. It is a sub-tropical fruit and is commercially grown in Punjab, Haryana, Rajasthan, Uttar Pradesh, Madhya Pradesh and Bihar. Phalsa is also suitable for arid and semi arid regions. Because of its hardy nature and capacity to tolerate high temperature it can be grown on a wide range of soil including moderately alkaline soils. The continuous use of chemical fertilizers hampers the fruit quality, soil health and generate pollution. The integrated nutrient management paves away to control the soil pollution. Therefore, it is imperative to switch over to other possible sources of nutrition to specific soil and agro-climatic conditions for better fruit yield and quality. In this approach a field experiment was conducted to assess the integrated effect of organic manure and inorganic fertilizer on the soil health.

RESEARCH METHODS

The present research work was conducted at the Horticultural Research Farm of the Department of Applied Plant Science (Horticulture), Babasaheb Bhimrao Ambedkar Central University, Lucknow during the year 2009 - 2010. 24 plants of six-year old were selected for the present study

comprising eight treatments. The design of the experiment was Randomised Block Design with three replications. The different sources of nutrients include urea, single super phosphate, muriate of potash, farm yard manure, *Azotobacter* and phosphate solubilising bio-fertilizers. The different treatment combinations were: T₁ (200g urea + 225g SSP + 50g MOP), T₂ (100g urea + 120g SSP + 20g MOP + 8kg FYM), T₃ (100g urea + 120g SSP + 10g MOP + 10kg FYM + *Azotobacter* + PSB), T₄ (50g urea + 60g SSP + 20g MOP + 8kg FYM + *Azotobacter* + PSB), T₅ (15 kg FYM), T₆ (15kg FYM + *Azotobacter* + PSB), T₇ (15 kg FYM + *Azotobacter*) and T₈ (15 kg FYM + PSB). The fertilizers were applied in the last week of January. The crop was irrigated as and when required during the growing season from December to May 2009-10. All the standard package of practices and plant protection measures were timely adopted. Fruits picking was done from first week of May to last week of May. The observations were recorded for each plant in each replication on physical characters of fruit [fruit length (cm), fruit breadth (cm), weight of fruit (g), juice percentage (%), pulp/stone ratio] and chemical parameters [TSS (⁰Brix), total sugars (%), reducing sugar (%), non reducing sugar (%), acidity and ascorbic acid content