

## Research Note

# Status of major nutrients in soils of Raya orchard under rainfed condition

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### Summary

An investigation was conducted to ascertain the properties of the soils of Rainfed Research Sub-station for Sub-tropical fruits, Raya. Soil properties *i.e.* pH, electric conductivity (EC), organic carbon (OC) and available NPK in soils of various fruit blocks of the research farm of Raya, district Samba. During study, it was observed that the different fruit block of the soil properties and available nutrients was more in the variation of surface soils (0-15 cm). Soil properties and available N, phosphorus and K parameters ranged between pH (6.50 -7.56), EC (0.03-0.15 dSm<sup>-1</sup>), Organic Carbon (1.8-5.8 g ha<sup>-1</sup>), available N (125-260 Kg ha<sup>-1</sup>), available phosphorus (10.80-18.10 Kg ha<sup>-1</sup>) and available K (126-158 Kg ha<sup>-1</sup>) in different fruit block of the research farm.

**Key words :** Chemical properties, Available NPK, Nutrient status, Rainfed areas and soil

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The studies were carried out at research farm of Rainfed Research Sub-station for Sub-tropical Fruits, Raya, Sher-e-Kashmir University of Agricultural Sciences and Technology Jammu at about 20 km away from Jammu city, during 2009 to determine the major nutrients. Research farm Raya grows different fruit crops in 8.67 acre area under rainfed condition in Samba district of Jammu and Kashmir. The productivity of fruit crops depends on many factors such as climate, site, varieties, fertilization, irrigation, soil management practices, pests and diseases management. Among the factors, adequate supply of nutrients play very crucial role in regulating cropping and quality of the fruits.

Plant nutrition plays an important role in improving the quantity and quality of horticultural crops and, thus, is essential for successful fruit growing. The macro elements such as nitrogen, phosphorus and potassium are required in large amounts. The soil is very important factor among various biotic and abiotic factors for sustainable crop production. It has been observed in many fruit block of research farm Raya that they are adopting the same dosages of NPK for a particular crop under varying soil properties. The soil properties and nutrients vary greatly with in a small area. The soil properties

of soil are essential in view of suggesting a package of agricultural practices and judicious use of inputs for increased crop production in the orchard. Keeping in view of the above facts, the present investigation was undertaken to assess the status of soil properties and available N, phosphorus and K in the different fruit block of the orchard and presented in this communication.

Sixty four soil samples from sixteen blocks of fruit plant representing three intercropping, *viz.*, aonla and phalsa block, nursery and aonla block, bael and Jamun block and others are sole crop *viz.*, phalsa, kinnow, galgal, karonda. Citrus collection, mango collection, eureka lemon, pomegranate, guava, mango, meca ber, nursery and ber blocks. In each fruit block four pits were dugged at random and soil surfaces were collected at a depth of 0-15 cm of soil surfaces in the year-2009. After collection, soil samples were air dried, gently grounded in a wooden pestle, passed through 2mm sieve, and used for analysis. The soil samples were analysed for pH, EC, organic carbon, available N, P, and K by adopting standard procedures Jackson (1973).

The perusal of data in Table 1 shows that the soil pH was slightly acid to neutral in reaction and ranged 6.50 -7.56.