

**A Review :**

**MINERAL NUTRIENT STATUS OF POMEGRANATE ORCHARDS IN WESTERN MAHARASHTRA, INDIA**

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**P**omegranate is an important cash crop commercially cultivated over 84 lakh ha in Maharashtra and especially suitable under dry land conditions. It has assumed great significance in western Maharashtra, however the quality of fruit has been declining due to the black spot diseases and black cells (arils). The problem of blackening of arils is mainly attributed to nutritional imbalance. Therefore, the comparative study on mineral nutrient status of healthy and affected orchards was undertaken to assess the probable cause of black arils of fruits. Keeping in view, comprehensive survey was carried out to assess the soil for available macro and micronutrients status from both healthy and affected pomegranate gardens of western Maharashtra. Similarly, leaf and plant samples were also collected from both the selected affected and unaffected gardens. The composite representative soil samples were collected at two depths i.e. 25 and 50 cm. The composite soil sample from 24 representative orchards of Pune, Satara, Solapur and Ahmednagar districts of Western Maharashtra were collected during winter (*Hasta bahar*) season.

The soil properties viz., pH (1:2.5), EC, calcium carbonate, available N, P, K and DTPA extractable micronutrients as Fe, Zn, Mn and Cu were determined by standard methods of soil analysis. (Jackson, 1975).

From the soil analysis (Table 1) it was seen that all soils under study were calcareous alkaline in nature with low to medium in salt contents (0.17 to 3.24 dSm<sup>-1</sup>). Among the major nutrients the available nitrogen content in the soil was low ranging from 137.8 to 269.7 kg/ha.

It was further decreased with depth of soil. The available phosphorus was low to high showing wide variations and the available potassium was very high in both selected healthy and affected orchard. It was indicated that there was wide variation in available N, P, K content in soils.

As far as DTPA-extractable micronutrients are concerned, all the soil samples from affected orchards have high amount of copper and low content of DTPA-extractable iron. Most of the soil from affected orchards contains high amount of calcium carbonate. The soils which are alkaline in nature with high CaCO<sub>3</sub> and high temperature might have reduced the availability of iron to plants. Besides soils were also low to medium in available Mn.

***Plant index leaf analysis:***

It was revealed from the data presented in Table 2a and 2b that there was sufficient nitrogen content in pomegranate leaves of both affected and unaffected orchards. However, the total P and K content was low. Similarly, the plant samples showed high contents of Fe and Cu and very low content of Mn. There was an imbalance in micronutrient content in plant might have resulted in interfering with metabolic activities creating physiological nutritional disorders giving black arils in pomegranate. The iron and copper nutrients might be playing an important role for blackening of arils; because affected plant contain high amount of copper which is highly oxidizing agent.

The plants might get high amount of Cu due to foliar application of copper containing fungicides. Pomegranate

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