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Short Communication

VARIATION IN THE MINERAL COMPOSITION OF SOME GENOTYPES OF POMEGRANATE (*Punica granatum* L)

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Pomegranate genotypes viz., wild, Kandahar and Jalore Seedless were subjected to chemical analysis. Sodium, calcium, iron, zinc, aluminium, copper and manganese contents were significant in wild pomegranate. Out of 3 genotypes, Jalore Seedless showed the highest content of magnesium (7.63 ppm) in comparison to wild (3.63 ppm) and Kandahar (3.55 ppm).

Key words : Minerals, pomegranate, cultivated, wild

Pomegranate, popularly known as anar or dalim or dadima, came to India from the Middle East via Persia or Afghanistan presumably in the first century, and acclimatized very well in the tropical and subtropical regions. In J & K state, it is found abundantly in the subtropical forests of Jammu and Kashmir state in the wild form which is used in the preparing anardana and finds use in the culinary and medical preparations (Mahajan *et al.*, 1992). The pomegranate fruit is a rich source of minerals and known to contain both major and minor nutrients. Various macro- and micro-nutrients which display a vital role in fruit metabolism, are also the inseparable part of the human diet (Sharma, 1995). Adequate amount of these nutrients in human bodies control a variety of functions like calcium in structural integrity, sodium in maintaining water balance inside and outside of body cells, iron in the formation of red blood cells, zinc in the sexual maturation and reproduction, copper in iron absorption and manganese in defence mechanism (Considine, 1982; Dewan, 1991; Ruheey *et al.*, 1993).

No comparative study relating to the mineral status of cultivated and wild genotypes has been conducted so far in Jammu and Kashmir, therefore, the present investigation was made to study the mineral composition of wild pomegranate in comparison to the cultivated genotypes of pomegranate.

The fruits of different genotypes (wild, Kandahar and Jalore Seedless) collected from the different sources were brought to the laboratory and their chemical analysis was done at SKUAST, RHRS, Udhaywalla and the Department of Chemistry, Jammu University, Jammu. The juice from pomegranate fruits was obtained by pressing seeds through muslin cloth and was subjected to analysis of minerals using Perkin Elmer Model 3100 (AAS) Atomic Absorption Spectrophotometer.

Various nutrients as influenced by various genotypes of pomegranate are given in the Table 1. The contents of sodium, calcium, iron, zinc, aluminium, copper and manganese were significantly affected by the genotypes and their

Table 1. Fruit mineral composition (ppm) of pomegranate genotypes

Genotype	Sodium	Calcium	Magnesium	Iron	Zinc	Aluminium	Copper	Cadmium	Manganese	Tellurium
Wild	6.48	47.62	3.63	7.15	4.19	2.20	1.23	0.02	0.26	0.31
Khandhar	5.89	11.42	3.55	0.91	1.47	0.60	0.43	0.01	0.18	0.44
Jalore Seedless	5.05	15.36	7.63	2.06	2.46	0.64	0.41	0.01	0.16	0.38
CD (0.05)	0.16	4.43	0.21	0.23	0.26	0.11	0.09	NS	0.06	NS

highest values were registered with the wild pomegranate as 6.48, 47.62, 7.15, 4.19, 2.20, 1.23 and 0.26 ppm, respectively. Of the 3 genotypes, Jalore Seedless showed the highest contents of magnesium (7.63 ppm) in comparison to wild (3.63 ppm) and Kandahar (3.55 ppm) pomegranates. Cadmium and tellurium which are toxic to human body were found less than permissible toxic limit and did not show any significant differences among the 3 genotypes, tested during the course of investigations.

In the present studies, the level of nutrients in the cultivars were close to the ranges as reported by Considine (1982), however, the status of most of the nutrients was 3-4 times higher in case of wild pomegranate to cultivated forms. The variation in the genetic make up of individual genotype, soil and environment conditions may be the possible causes for contributing the differences in mineral composition among the genetic resources as also observed.

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