

Research Note :

Comparative study of physico-chemical characteristics of citrus species grown under valley conditions of Srinagar (Garhwal)

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The comparative study on physico-chemical characteristics of kagzi lime, Pant Lemon, Eureka Lemon and Local Malta was made at Utrakhand. After going through observations related to physico-chemical characters it was concluded that among all four “Eureka Lemon” was the leader with maximum average fruit weight (349.07gm), maximum average juice (43.16%) and maximum average moisture (92.34%). “Kagzi lime” was opposite to “Eureka Lemon”. It had minimum average fruit weight (98.94gm), minimum fruit size (8.1 cms, 7.2 cms) and minimum average juice (38.21%).

Citrus species are native to tropical and subtropical regions of Asia particularly India, China and in regions between them. The special feature of citrus fruits is presence of juice sacs and they are either sucked or made into beverages or pickles. Citrus fruits play important role in human diet as they are rich source of vitamin c, the absence of which causes scurvy, swelling of limbs, bleeding of gums, tooth decay and rheumatism. About 2.94 million hectares area is under citrus cultivation which represents about 13% of total area under various major fruit crops in India

Among citrus fruits, lime and lemon rank third after mandarin and sweet orange. Keeping in view their importance and uses a comparative study was

undertaken on physical and chemical analysis of different species of citrus.

The investigation was undertaken at Horticultural Research Center and Departmental Laboratory of Horticulture Department, H.N.B Garhwal University, Srinagar (Garhwal) Utrakhand in the year 2005-2006. Four citrus species viz., Kagzi Lime, Pant Lemon, Eureka Lemon and Local Malta growing under similar set of cultural practices in Horticultural Research center chauras were randomly selected for the investigation. Mature but unripe fruits were collected randomly from citrus orchard in bags and analyzed in the laboratory. The numbers of replications were three. The observations on physical character like fruit size and fruit weight were made. The chemical characters like moisture percentage, sugar percentage, juice percentage, titrable acidity, vitamin c content were estimated as per as standard procedure of A.O.A.C (1980) and total soluble solids (TSS) was measured with hand refractometer.

The results as indicated in Table 1 revealed that maximum fruit size(14.5 length, 10.7 width) and fruit weight (349.07 gms) was found in “Eureka Lemon” while minimum fruit size (8.1 length, 7.2 width) and weight (98.94gms) was observed in “Kagzi Lime”. The maximum average Rind Thickness was found in case of “Local Malta” (0.83 cm) while minimum in “Pant Lemon” (0.36 cm).

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Table 1 : Physical characteristics of different species of citrus

Treatments varieties	Length of the fruit (cm)	Breadth of the fruit (cm)	Weight of the fruit (gm)	Rind thickness (cm)
Kagzi Lime	8.1	7.2	98.94	0.40
Pant Lemon	10.0	9.1	202.06	0.36
Eureka Lemon	14.5	10.7	349.07	0.66
Local Malta	11.0	11.1	328.45	0.83
C.D. (P=0.05)	2.26	1.98	75.02	0.20