

Physico-chemical status of different genotypes and hybrids of aonla

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ABSTRACT

The physico-chemical characteristics of two local selections (LS-18 and LS-27), two hybrids (Hybrid-1 and Hybrid-2) and three cultivated varieties (Gujarat Aonla-1, NA-7 and Krishna) were studied at the Department of Horticulture, B. A. College of Agriculture, Anand Agricultural University, Anand during 2005. The experiment was conducted in Completely Randomized Block design with three replications. Significant variation was observed for all the characters studied. The higher fruit weight and pulp weight were recorded in Krishna and LS-27. The minimum stone weight and maximum pulp: stone ratio was noted in LS-27 followed by NA-7. The juice quantity was maximum in LS-27. The lowest pulp: juice ratio was estimated in LS-27 followed by Gujarat Aonla-1 and LS-18. The highest T.S.S. was recorded in hybrid-2 and LS-18, whereas lowest acidity was recorded in Krishna and NA-7. The ascorbic acid was found high in Gujarat Aonla-1 and Krishna. Overall results revealed that as compared to hybrids, LS-27 and Krishna varieties were found superior for physico-chemical characters.

Key words : Physico-chemical characteristics, Hybrids, Aonla

The aonla (*Emblica officinalis* Gaertn.) is one of the most important semi-arid fruit crops of commercial significance. It is quite hardy, prolific bearer and highly remunerative even without much care. The fruit is highly nutritive and is richest source of Vitamin-C along with its diverse medicinal and industrial application (Singh *et al.*, 1963). Gujarat is well known for the cultivation of aonla. In Gujarat, the area under aonla cultivation is increasing at a faster rate. Gujarat Aonla-1 is a popular variety of aonla in Gujarat. Systemic breeding work was started during 1995 at the Horticulture Research Farm, B. A. College of Agriculture, Anand Agricultural University, Anand. Under this programme, number of germplasm were collected and hybrids were developed. But the fruit composition of these genotypes and hybrids were yet not studied. Therefore, the present study has been made to analyse the physico-chemical characteristics of fruits of some of the selected lines, hybrids and varieties under middle Gujarat condition.

MATERIALS AND METHODS

The present investigation was carried out at the Department of Horticulture, B. A. College of Agriculture, Anand Agricultural University, Anand during the fruiting season of the year 2005. The treatment consisted of two local selections *viz.*, LS-18 and LS-27, two hybrids *viz.*, Hybrid-1 (Gujarat Aonla-1 x Desi) and Hybrid-2 (Gujarat Aonla-1 x Anand-1) and three cultivated varieties *viz.*, Gujarat Aonla-1, NA-7 and Krishna. The experiment was conducted in Completely Randomized Block Design with

three replications. The samples of 1 kg fully matured fruits of each cultivar were taken at random and number of fruits were recorded. Five samples were taken from each cultivar for physico-chemical analysis from one replication. Fruit weight was recorded by weighing the fruits and dividing the weight with number of fruits. The pulp of the fruit was separated and pulp and stone weight were determined by weighing them separately. The fruit juice was extracted from fruit pulp by juicer and measured in ml. Total soluble solids (T.S.S.) of fruit juice was determined in per cent by a hand refractometer. The acidity and ascorbic acid contents were determined by the titration methods described by A.O.A.C. (1980). The data were statistically analysed.

RESULTS AND DISCUSSION

A perusal of the data (Table 1, 2 and 3) revealed significant differences among the selected cultivars for all the characters. The mean values for number of fruits/kg, fruit weight, pulp weight and stone weight varied from 26.67 to 45.67, 24.02 to 41.51g, 21.05 to 37.55 g and 2.24 to 3.96 g, respectively. The number of fruits/kg was significantly higher in hybrid-1 (45.67), while minimum number of fruits/kg was recorded in Krishna (26.67). The fruit weight was significantly higher in Krishna (41.51 g) followed by LS-27 (37.88 g) and NA-7 (35.52 g), whereas the lowest fruit weight was observed in case of hybrid-1 (24.02 g). Similar type of work was carried out by Teotia *et al.* (1968) who reported that larger fruit size in terms of length, width and weight of fruit was observed in