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Influence of leaf age on quality components of gel in different accessions of aloe (*Aloe barbadensis* Miller)

B. AMARESWARI, M. PADMA[1] AND M.RAJKUMAR[2]

Members of the Research Forum

Associated Authors:
[1]College of Horticulture, HYDERABAD (A.P.) INDIA

[2]Fruit Research Station, Sangaredy, MEDAK (A.P.) INDIA

Author for correspondence :
B. AMARESWARI
Department of Horticulture, Krishi Vigyan Kendra, Yemmiganur, KURNOOL (A.P.) INDIA
Email : ammuhorti@gmail.com

ABSTRACT : The present investigation was carried out in laboratory located at Herbal garden, College of Horticulture, Rajendranagar, Hyderabad-500030,A.P during the year 2010. The experiment consisted of three accessions of Aloe *viz.*, yellow flowering accession-1, yellow flowering accession-2 and orange flowering accession-3 and three leaf ages *viz.*, 10 months, 12 months and 14 months leaf ages. The experiment consisted of 9 treatment combinations laid out in Completely Randomized Design with factorial concept in three replications. The quality components of Aloe gel was studied in three accessions of different ages. The results of the study indicated that, the treatment combination of yellow flowering accession-1 with 14 months leaf age had recorded the maximum TSS, moisture, reducing sugars and total sugars when compared to other accessions and leaf ages, where as the highest pH was recorded with orange flowering accession-3 at 14 months leaf age and highest acidity was recorded with yellow flowering accession-1 at 10 months leaf age.

KEY WORDS : pH, Acidity, TSS, moisture, Reducing sugars, Total sugars

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The herb Aloe is as old as human civilization. It belongs to the family Liliaceae. There are more than 400 identified species of aloe plants, of which a few have medicinal and economic value (Kawai *et al*., 1993). Among these, *aloe vera* Linn Syn. *Aloe barbadensis* Miller is accepted unanimously as the correct botanical source of aloe. Aloe is mainly cultivated for its thick fleshy leaves from which the yellow resinous latex or yellow sap or anthraquinones (the bitter yellow liquid between the leaf rind and gel) exudes and can be used as a laxative or purgative. The plant contains about 96 per cent of water and the remaining is a mixture of several chemical compounds. The inner most part of the leaf is a clean, soft, moist and slippery tissue where water is held in the form of viscous mucilage called gel (Newton, 2004). The gel is the rich source of polysaccharides, antioxidants, enzymes, minerals and vitamins (Chauhan *et al.*, 2007).

The leaves are to be harvested at the right age and cut exactly at right place on the plant to ensure the best gel (Chauhan *et al*., 2007). It is known that as the age increase, the size of the leaf increase and also gel content in the leaf. The composition of the gel also may change with increase of leaf age. Hence, the present investigation influence of leaf age on quality components of gel in different accessions of aloe was carried out with the objective of finding the quality of the gel in different accessions of aloe.

Plate A : Yellow flowering accession-1