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IJPS INTERNATIONAL JOURNAL OF PLANT SCIENCES
Volume 8 | Issue 1 | January, 2013 | 61-63

RESEARCH ARTICLE

Effect of heating of the gel at different temperatures on antioxidant activity in different accessions of aloe (*Aloe barbadensis* Miller.)

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SUMMARY

The experiment consisted of three accessions of aloe *viz.,* yellow flowering accession-1, yellow flowering accession-2 and orange flowering accession-3 and three temperatures *viz.,* 50° C, 75° C and 100° C temperatures. The antioxidant activity of aloe gel was studied in three accessions heated at different temperatures. The results of the study indicated that, the highest antioxidant activity was recorded by yellow flowering accession-1 at all heating temperatures during the 30 days of storage followed by yellow flowering accession-2 and orange flowering accession-3.

Key Words : Yellow flowering accession-1, Yellow flowering accession-2, Orange flowering accession-3, Antioxidant activity

How to cite this article : Amareswari, B., Padma, M. and Rajkumar, M.(2013). Effect of heating of the gel at different temperatures on antioxidant activity in different accessions of aloe (*Aloe barbadensis* Miller.). *Internat. J. Plant Sci.*, **8** (1) : 61-63.

Article chronicle : Received : 02.07.2012; **Revised :** 24.08.2012; **Accepted :** 17.10.2012

The herb aloe is as old as human civilization. It belongs to the family Liliaceae. 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 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). aloe gel is highly susceptible to oxidation and when exposed to air, the gel rapidly oxidizes, decomposes and looses much of its biological activities (Coats, 1979). Heating of gel is an effective method of pasteurization and add better flavour (He *et al*., 2005). Gel heating may change the composition which also has effect on storage. aloe gel can be stored for more number of days (up to 30 days) at 5^{0}C without any deterioration in quality (Hemalatha *et al*., 2008). Hence, the present investigation was carried out to study the effect of heating of the gel on antioxidant activity of aloe.

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MATERIALS AND METHODS

The present investigation was carried out during 2010 at Herbal garden, College of Horticulture, Rajendranagar, Hyderabad, A.P. The experiment consisted of 9 treatment combinations laid out in Completely Randomized Design with factorial concept in three replications (Table A).

Table A: Details of treatments imposed

Treatment	Combination of treatments
T_1	$A_1 t_1$ (Yellow flowering accession-1+50°C)
T_2	$A_1 t_2$ (Yellow flowering accession-1+75°C)
T_3	$A_1 t_3$ (Yellow flowering accession-1+100°C)
T_4	$A_2 t_1$ (Yellow flowering accession-2+50°C)
T_5	$A_2 t_2$ (Yellow flowering accession-2+75°C)
T_6	$A_2 t_3$ (Yellow flowering accession-2+100°C)
T_7	$A_3 t_1$ (Orange flowering accession-3+50°C)
T_8	$A_3 t_2$ (Orange flowering accession-3+75°C)
T_9	$A_3 t_3$ (Orange flowering accession-3+100°C)