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Delicious drink (ready to serve) from Bael pulp powder

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Bael (*Aegle marmelos* Correa) is a potential fruit tree for semi arid and arid regions and is a highly nutritious and favorite fruit throughout the country because of its medicinal and nutraceutical value. The fruits are harvested during mid March to May. If fruits are left on the trees beyond ripening, these may get spoiled due to high temperature, monsoon rains and humidity. Normally the storage life of bael fruit is less hence, fresh fruit have to be processed into value added products. The fruit of bigger size (1- 3kg.) can be successfully utilized for drying of pulp which can be used for ready to serve drink during off season. In recent times, to make better use of fruits there has been a renewed interest in the bael as a main component in ayurvedic preparations, health food, beverages and delicious drink, etc. In India, limited work has been done on post harvest utilization of fruits. Keeping in view, an attempt was made to utilize bael pulp powder for preparation of delicious drink.

Keyword: Bael, ready to serve, value addition, medicinal value,

Material and methods

The freshly harvested fruit of bael cultivar NB-9, yellow in colour and sweet in taste was taken for extraction of pulp. Before extraction of pulp, fruits were washed, shell opened and seeds were extracted. Pulp was properly dried under sunlight and then in oven for grinding. Fully dried pulp was ground to make powder. Powder was kept in air tight glass bottle under room temperature to study the storage period. 15g powder was dissolved in 500ml of water. 120g sugar @ per liter was added to prepare ready to serve drink (TSS 12.5- 13.5 °Brix). The ready to serve drink was prepared at monthly interval from stored powder for organoleptic test. Because of natural yellow colour of powder, no artificial colour was mixed in the drink. At the time of testing, commercial soda water @200ml per litre of RTS was further added to make it delicious and improve the taste.

The TSS of the drink was monitored by digital hand refractrometer before sensory evaluation. Organoleptic testing on parameters given in Table- 1, was carried out at monthly interval up to 90 days with a panel of ten judges on score basis (maximum 10 marks).

Results and discussion

The mean data on organoleptic testing of ready to serve drink are given in Table 1. The sensory evaluation revealed that ready-to-serve drink mixed with soda water @ 200 ml/litre of product was acceptable by the panel of judges. The appearance of RTS was yellowish getting maximum score (7.71) at 60 days followed by initial stage. A decreasing trend in score was recorded with increase in the period of storage of powder. The minimum score (7.10) was recorded with RTS prepared from 30 days stored powder and it was good. The colour of product is an important character of any value added product. The initial colour of product was yellowish and attractive. There was no artificial colour mixed in the drink as powder retains the natural yellow-reddish colour. The maximum scores (8.10) for colour was observed when it was prepared from 30 days stored pulp powder and followed by others. The colour of product was very good at 30 days. As the storage period increased, chemical reaction started in stored powder. The gradual loss in colour over the entire period was due to action of different kinds of acids present in the pulp powder. The slightly minimum score was obtained at 60, 90 days i.e. 7.88 which showed the change of colour of powder, which may due to storage conditions and humidity. The maximum score of ready to serve drink was obtained for acceptability followed by flavour character. In sensory evaluation, taste is very important factor after colour and flavour. The highest score (7.86) was ranked for acceptability character even after 60days storage of powder used for preparation followed by 30days (6.76). The minimum score (6.33) was given by tasters at final stage i.e. 90days, which may possibly be due to poor taste sensation. The finding is similar with the earlier results on sensory evaluation of ready to serve drink prepared from date juice (Godara and Pareek, 1985).

Table 1. Sensory evaluation of squash prepared from bael pulp powder on score basis.

Characters	At initial (0 day)	At 30days	At 60 days	At 90 days
Appearance	7.60	7.10	7.71	8.31
Taste	6.20	6.50	7.86	7.22
Flavour	6.66	6.76	7.85	7.44
Sweetness	7.00	7.10	7.56	7.16
Colour	7.88	8.10	7.86	7.72
Acceptability	6.66	6.76	7.57	6.33

During storage, physico-chemical changes are common in any value added products. The finding is similar with the results reported by Jain *et al.* (2003) and Singh *et al.* (2011). During storage, an increase in total sugar and greater accumulation of reducing sugar has observed (Singh *et al.*, 2011). However, it was minimum at 90 days because of poor taste sensation among tasters.

The organoleptic quality including flavour of bael was acceptable when stored at ambient storage temperature of 37 °C upto 90 days. TSS of RTS was monitored on the day of preparation and it remained maintained 12.5 to 13.5° brix. The sweetness character was remained at par up to 90 days. During storage of Bael fruit product; there is reduction in non-reducing sugar and increase in reducing and total sugar. The sensory evaluation of RTS was indicative of high acceptance of product. The drying of bael pulp from big sized fruits can be utilized for making powder for preparation of delicious drink. Further, it can be stored more than 100 days without any major changes in quality low temperature.

Conclusion

It is concluded that the ready to serve drink prepared from pulp powder is suitable value added product of bael fruits owing to its acceptability and taste characters.

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