NEW VISTAS OF VALUE ADDITION TO UTILIZE AMLA (EMBLICA OFFICINALIS) AND BER (ZIZIPHUS MAURITIANA) FRUITS

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ABSTRACT
Amla and ber fruits are important arid resources of Rajasthan (India) which are harvested and available in abundance during December to February. These arid fruits bear nutritional as well as medicinal significance in oldest scripture too. Considering the perishable nature and importance of these fruits, their post harvest management with special reference to value addition is the need of present time. Amla (cv.NA-6) and ber (cv.Seb) were used for developing three sugar based value added products i.e. jam, preserve and squash. The products were assessed for their quality on the basis of sensory attributes, vitamin C retention and microbial load. The overall acceptability scores of the products ranged from 7.5 to 8.5 on nine point hedonic rating scale. Vitamin C retention was recorded as 149 to 210.87 mg/100g and 27.3 to 50.82 mg/100g in the amla and ber products respectively. The cost of the products was calculated to be in the range of Rs. 18 to 66 per Kg. High vitamin C content and abundant availability on low cost proved great potential of these arid fruits in the field of processing and value addition.

INTRODUCTION
Amla and ber fruits are important arid resources of Rajasthan (India). These arid fruits are harvested and available in abundance during the months of December to February. Amla and ber both bear nutritional as well as medicinal significance (Daulta and Chauhan 1982, Kalra 1988). Although there seems to be good potential for the use of these arid fruits in processing and value addition, yet these are not being fully exploited. Being highly perishable in nature, the post harvest management of these fruits with special reference to value addition is the need of the hour. Thus keeping in mind all these perspectives present study was conducted for developing and quality evaluation of three sugar based value added products i.e. jam, preserve and squash using amla (ver NA-6) and ber (cv.Seb).

MATERIAL AND METHODS
Aonla (cv NA-6) and ber (cv. Seb.) were procured from the experimental field of Centre for Arid Horticulture, ICAR Institute Bikaner. The fruits were cleaned of dirt, dust, and other impurities prior to processing. After various trials three sugar based products i.e. jam, preserve and squash of amla and ber were developed and standardized in the laboratory. Over all acceptability of the products was evaluated on the basis of sensory attributes i.e. color, flavor, texture, taste and appearance by a panel of 10 semi trained judges using nine point hedonic rating scale (Swaminathan 1987). Vitamin C value of fresh amla and ber fruits as well as of the products were analyzed by the method of Titrimentery (AOAC 1990). Cost of all the developed products was calculated based on the food cost with the exclusion of overhead cost.

RESULTS AND DISCUSSION
Development and Sensory Evaluation of the products: Amla and ber fruits in its whole, pulp and juice forms were utilized for the preparation of value added products like preserve jam and squash respectively. The mean overall acceptability of the amla and ber products was found to be ranging from 8.27 to 8.32 and 7.49 to 8.50 respectively on nine point hedonic rating scale. The scores clearly indicated “Very much
Liking” to “Extreme liking” of the standardized value added products by the panel of judges. Among ber products, ber preserve was found to be most acceptable scoring 8.50 followed by jam and squash with 7.66 to 7.49 scores respectively. In case of amla products only slight variations were found among mean overall acceptability scores i.e. 8.29, 8.27 and 8.32 respectively for amla jam, preserve and squash (Table -1). Similar to present study Singh et al. (1994) and Prashad et al. (2003) had also developed various acceptable products of amla and ber.

Vitamin C Content : Vitamin C content was estimated in amla and ber products on fresh weight basis and has been presented in Table - 2. The content in the raw amla and ber was found to be 420/100g and 84 mg/100g respectively. Whereas it was recorded as 149.50 to 210.87 mg/100g and 27.3 to 50.83 mg/100g respectively for amla and ber products. Difference in the vitamin C content of the products must be due to variations in the proportion of fruit present in the final product as well as effect of processing technique used during development of the products.

Cost : Cost is the major factor to be considered while developing and commercializing any new product. The cost of amla and ber products was found to be in the range of 18-66 Rs/- per Kg. (Table 3). The cost of products varied due to its form in which fruits were used for preservation, type and amount of ingredients and type of processing undertaken.

CONCLUSION

Results of the present study clearly revealed high potential of these arid fruits in the field of processing and value addition. Development of preserved products based on these fruits will increase nutritional value of the regular Indian diet as well as these can contributes to the food security among the people of the region.
REFERENCES


