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Sensory evaluation of amla wine

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The Amla ('Aonla') *(Phyllanthus emblica* or *Emblica officinalis* Gaertn), also known as Indian Gooseberry is a minor sub-tropical deciduous tree belonging to the family Euphorbiaceae (Kalra, 1988). Amla fruit contains 89 to 94 per cent pulp, 0.8 to 2 per cent fibre, 10 to 14 per cent total soluble solids, 1.4 to 2.4 per cent acidity, 700 to 900 mg vitamin C /100g pulp, 2.4 to 3.1 per cent pectin and 2 to 3 per cent phenols (Singh *et al*., 1993). Amla has been highly extolled for its medicinal and nutritional properties. Fruits during their peak harvesting season go as a waste due to limited usage. Therefore, development of value added products could find national and international markets and have great importance in alleviating malnutrition among rural population in addition to several health benefits. The present study was carried out to develop amla wine to minimize losses due to improper handling and unmarketability of fruits.

The amla fruits were collected from forest localities of Karnataka. Well matured fruits of uniform size were used for the experiment. Selected fruits were washed thoroughly with clean water and boiled for five minutes for easy separation of seed and pulp. The pulp was then fed into a warring blender for mashing into fine texture. The extracted pulp was treated with 2% pectinase ok enzyme and later the pulp was diluted with water in 1:1 ratio. The pulp was ameliorated to obtain 25^{0}B by adding cane sugar preservative sulphurdioxide (in the form of potassium metabisulphite) 50 ppm was added to prevent browning by oxidation and to suppress wild yeasts present in the pulp. The pulp was kept in five litre conical flasks and plugged with sterile cotton. After 5 hours of sulphiting, the yeast starter culture at the rate of two per cent (v/v) was added for fermentation. Fermentation was carried out with occasional mixing of pulp at ambient temperature for 4 weeks. Later the wine was pressed through clean cheese cloth and filled in bottles for completion of slow fermentation. Clarification of wine was done by adding bentonite at the rate of 2 per cent. The clear wine was siphoned into pre-sterilized bottles and tightly corked after adding 100 ppm of sulphurdioxide.

Prepared wine was analyzed for pH, T.S.S, reducing sugars, tannins, ethanol and volatile acidity at 3 months of storage. The pH was measured using Toshniwal digital pH meter (Model DI 707).Total soluble solids content was recorded using Erma-hand refractometer. Reducing sugars were estimated by Shaffer-Somogyi method (Somogyi, 1945).Tannin content was calculated by comparing the absorbance to that of standard curve (Ranganna, 1977). Ethanol content of wine was determined by chemical oxidation method as outlined by Amerine and Ough (1980). The volatile acidity of wine was determined by the method described by Amerine and Ough (1980).The wine samples were evaluated by the panel of fifteen judges. The numerical scoring method suggested by Ough and Baker (1961) was adopted.

The data recorded on chemical parameters of wine such as pH, TSS (^{o}B), Alcohol (%V/V), Reducing Sugars (%), Tannins (mg/100ml) and Volatile acidity (as g. acetic acid/ 100ml) at 90 days of storage are tabulated in the Table 1.The pH of the wine was 2.8, while, TSS recorded was 13.2^{o}B. The alcohol content in the wine was 5.86%. Reducing sugars content was found to be 1.57%, tannins 2310 mg/100ml and volatile acidity 0.012 g/100ml.