

Qualitative evaluation of mixed fruit based ready to serve (RTS) beverage

VISHAL KUMAR, SURESH CHANDRA, ANUJ YADAV AND SHUSHEEL KUMAR

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See end of the Paper for authors' affiliation

Correspondence to:

VISHAL KUMAR
Department of Agricultural
Engineering and Food
Technology, Sardar
Vallabhbhai Patel
University of Agriculture
and Technology, MEERUT
(U.P.) INDIA

■ **ABSTRACT** : The ready to serve (RTS) beverage was prepared by blending the orange and carrot juice in the ratios of $O_{40}:C_{60}$, $O_{50}:C_{50}$ and $O_{60}:C_{40}$ and stored at room temperature and refrigeration up to 45 days. The quality parameters pH, TSS, acidity and overall acceptability (OAA) were also evaluated at an interval of 15 days. The TSS and acidity of RTS beverage increased and pH was decreased with increase in the level of carrot juice ratio under different storage conditions. The higher score of overall acceptability was 8.05 for fresh sample of $O_{60}:C_{40}$ and the minimum was 7.90 for ratio of $O_{50}:C_{50}$ sample at room temperature. However, the overall acceptability of RTS decreased with increase in storage period. Results of study concluded that RTS beverage was found superior under refrigeration condition as compared to room temperature.

■ **KEY WORDS** : TSS, Acidity, pH, Beverage, Refrigeration temperature, Quality, Room temperature

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Fruit most commonly used for preparing beverages are sweet orange, mandarin (*sangtra*), sour lime (*kagzinimboo* or *limboo*), lemon, grape fruit, grape, apple, mango, pomegranate, phalsa (*Grewia asiatica*), jamun (*Eugenia jambolana*), mulberry, passion-fruit, pineapple, etc. Among the squashes, sweetened orange juice known as orange squash and pineapple squash are the most popular ones (Sharma *et al.*, 2008). These products are marketed under variety of name such as fruit drinks, breakfast drink, ready-to-serve (RTS), nectar, ready-to-drink (RTD) and squash etc. Orange is a citrus fruit, considered to be a hybrid, of ancient cultivated origin, between pomelo (*Citrus maxima*) tangerines (*Citrus reticulata*). Its consumption is as popular in the raw, peeled form, and as extracted juice. Rind of orange is used by people in recipes, either for flavoring or for garnishing purposes. Being rich source nutrients, orange has been associated with a number of health and nutrition benefits. The orange contains copper, fats, fibre, folic acid, iron, sodium and sulphate. Carrot contains good amount of dietary fibre which has laxative effect and aids in digestion and absorption of nutrients and prevents constipation. Carrot roots are well known for their nutritional constituents like carotenoids especially β -carotene which act as a precursor of vitamin A. β -carotene also acts as antioxidants by quenching single oxygen and triplet excited states (Baramanray *et al.*, 1995). Vitamin A also helps to form and maintain healthy teeth, skeletal and soft tissue, mucous

membranes and skin. In addition, a carrot satisfies 10 per cent of the average daily requirements for vitamin C, 8 per cent of dietary fibre needs, 6 per cent of potassium needs and 2 per cent of calcium needs with about 26 calories and 0 per cent fat. It is grown extensively in various countries during winter season in tropical region while during summer season in temperate countries (Kalra *et al.*, 1987). Carrot can enhance the quality of breast milk and improve the appearance of the skin, hair and nails. When taken daily it can lower cholesterol and blood pressure. Raw carrot contains α -carotene, a strong antioxidant that can prevent cancer.

■ METHODOLOGY

Fresh, fully ripened, uniform sized orange and carrot were procured from local market of Bulandshahr (U.P.). Orange and carrot free from disease and insect infections were selected for the investigation. Other raw materials included sugar, glass bottles, chemicals and preservatives used for sample preparation. Procured orange and carrot were washed, wiped and then extracted the juice. Experiments were conducted at Agricultural Food Processing Lab (Marathwada Institute of Technology, Bulandshahr) and SVPUA and T, Meerut. Studies were also carried out to evaluate the quality of beverage at 0, 15, 30 and 45 days of storage. RTS samples were packaged in glass bottles of 200 ml size with leaving head space. All samples were stored at room temperature and home refrigeration (refrigerator).