



DEVELOPMENT AND EVALUATION OF QUALITY OF POMEGRANATE JUICE BLEND WITH SUGARCANE AND GRAPE JUICE

Food Technology

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ABSTRACT

The study was conducted to investigate the consumer acceptability of blend of pomegranate juice, grape juice and sugar cane juice in different compositions as fresh juice and after storage of one week. On the basis of organoleptic evaluation, the blended juice containing 60% of pomegranate juice, 20% of grape juice, 20% of sugarcane juice was found to have best acceptability, freshly and also after storage.

KEYWORDS

Pomegranate, Grapes, Sugarcane, Sensory evaluation

INTRODUCTION:

Fruit is the sweet, fleshy, edible part of a plant. It generally contains seeds. Fruits are usually eaten raw, although some varieties can be cooked. They come in a wide variety of colours, shapes and flavours (Gets, 2003). The manufacture of juices from fruits and vegetables is older than agriculture. In simple words, juice is the extractable fluid contents of cells or tissues. It is defined as fermentable but unfermented juice, intended for direct consumption, obtained by the mechanical process from sound, ripe fruits, preserved exclusively by physical means. The juice may be turbid or clear. The addition of sugars or acids can be permitted but must be endorsed in the individual standard (Bates et al., 2001; ICMSF, 2005; Bevilacqua, et al., 2011). Many reports have revealed that fruit juices may play an important role in slowing the progress of Alzheimer's disease and development of cancer (Qi Dai et al., 2008; Kyle et al., 2009; Holt et al., 2009). Fruit juices are popular drinks as they are healthy foods for their low content of sodium, cholesterol, fat and high concentration Potassium of vitamin C, polyphenols and antioxidants. They are important part of modern diet in many countries. Consumption of fresh fruit juices helps in preventing many degenerative diseases such as cardiovascular problems and several cancers. In developing country like India, a large population of all income groups and age groups consume freshly squeezed fruit and vegetable juices (Vantarakis et al., 2011). Though consuming fruit juice prepared by a single fruit is relished by the peoples, preparing a blended juice improves the acceptability and health benefits.

Pomegranate, (*Punica granatum*), is a fruit bearing shrub or small tree family Lythraceae. The blend of different fruits help to improve the nutritional value and health benefits. The juicy arils of the fruit are eaten fresh, and the juice is the source of grenadine syrup, used in flavourings and liquors. Pomegranate is high in dietary fibre, folic acid, vitamin C, and vitamin K. Pomegranate is an important source of bioactive compounds, such as anthocyanins, other phenolic compounds, and ascorbic acid. Aril of pomegranate fruit is consumed fresh or processed into juice. In addition, it can be used to produce jam, jelly, wine, sauce, medicine, food supplement.

A grape is a fruit, botanically a berry, of the deciduous woody vines of the flowering plant genus *Vitis*. Grapes can be eaten fresh as table grapes or they can be used for making wine, jam, grape juice, jelly, grape seed extract, raisins, vinegar, and grape seed oil.

Sugarcane is a perennial grass of the genus *Saccharin*. It is cultivated for its juice, from which sugar is processed. Most present-day commercial canes are the off springs or hybrids of the species of *Saccharum Officinarum*, which was developed from a wild cane species.

The aim of present work was to prepare a nutritious drink by blending pomegranate juice, grape juice and sugarcane juice in appropriate ratio, such that the blending is accepted to increase the efficiency in the terms of health benefits and desirability.

MATERIALS AND METHODS:

Preparation of Pomegranate juice blended with sugarcane juice and grape juice was conducted at Food Chemistry Laboratory of Nagarjuna University Guntur, as a part of project work. In order to prepare the proposed juice, different combinations were tried. The below general procedure was followed for preparation of proposed blended juice.

After thoroughly washing the Pomegranate fruits they were cut into quarters with the help of stainless steel knife. Grains were separated, filtered and juice was extracted. After thoroughly washing the grape fruits, the grapes were removed from stem, juice was filtered and extracted.

After thoroughly washing the sugarcane and peeling the outer layer of the sugarcane with sharp knife, the sugarcane was cut into small pieces and was separated, filtered and juice was extracted.

The blended juice was prepared by following the below combinations of juice of each fruit

1. Pomegranate 80%, Grapes 10% and Sugarcane 10%
2. Pomegranate 60%, Grape juice 20% and Sugarcane 20%
3. Pomegranate 50%, Grape juice 30% and Sugarcane 20%

Organoleptic Evaluation:

The prepared fresh blended juice drink was evaluated organoleptically by thirty untrained panellists (female and male 15: 15 aged between 24-30 years). The participants were students who were studying M.Sc. Food and Nutrition at Nagarjuna University, Guntur during 2018, who volunteered for the participation in the study. Awareness on attributes and scores were explained first to everyone. The sensory characteristics like colour, taste, flavour, texture based on 5 point hedonic scale was prepared and the same panel of participants were asked to evaluate on the same parameters after one week of storage in refrigerator at 4°C. To get the taste of different combinations white bread and drinking water were given to the panellist, in between each blend.

The following score card was used for basic sensory evaluation of the prepared juice.

Basic Sensory Evaluation Score Card:

TABLE 1 – Score of the sensory evaluation for different attributes.

S.no	Attributes	Scores
1.	Colour	
	Dark pink	5
	Pale pink	4
	Light red	3
	Dark red	2
	Colour less	1
2.	Taste	
	Excellent	5
	Very good	4
	Good	3
	Average	2
	Poor	1

