

DEVELOPMENT AND SENSORY EVALUATION OF “NARANGKSHODBODHAK” (DETOXYFING DRINK): RESEARCH ARTICLE

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Received on: 23/08/2021

Revised on: 12/09/2021

Accepted on: 03/10/2021

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ABSTRACT

The recipe "Narangshudbodhak" was selected from the Ayurvedic text as Bhojankutuhala with respect to its known benefits as it imparts the taste, confers strength and satiates the senses. The research was undertaken to develop this product for the community. The product was prepared as the amount of ingredients given in the Bhojankutuhala, followed by sensory analysis. The product has exhibited excellent overall acceptability with respect to its tangy flavour, sweet and sour taste and light green colour. Finally, with the supportive benefits product has been accepted by the community. The product can be carry forward for better detail analytical procedure.

KEYWORDS: Detoxifying drink, refreshing drink, orange juice, tangy drink, narangshudbodhak.

INTRODUCTION

Orange (narang) is sweet, sour, heavy, hot and imparts taste (Raghunath Suri, Bhojankutuhala, 2019). Orange juice is a natural source of vitamin C, folic acid, calcium, potassium, and magnesium, and blood levels of vitamin C were substantially increased after regular consumption of orange juice. It was verified a positive dose-response effect between the consumption of orange juice and levels of vitamin C and folic acid in the blood stream (Franke et al. 2005). Citrus fruits in general are excellent sources of phytonutrients, vitamins, and minerals. For example, citrus contains polyphenols, flavonoids (naringin, hesperidin, neohesperidin, citronin, narirutin, and others), polymethoxylated flavones (tangeritin, nobilitin, sinensetin, and others) (Bai et al. 2013; Baldwin et al. 2014; Murata 1997; U.S. Department of globally, killing more people annually than any other cause (World Health Organization (WHO) 2016). The consumption of flavonoids from several citrus fruits and citrus juices in the diet has been associated with improvement of blood pressure, contributing to the potential for orange q to prevent CHD (Kay et al. 2012).

Candied sugar is very sweet, good for the eyes, treats vomiting and cures skin disorders, wounds, vitiation of kapha, dyspnoea, hiccups and vitiations of pitta and blood (Raghunath Suri, Bhojankutuhala, 2019). The primary function is to provide us with energy for our brain and nervous system that regulate performance of daily activities (Westenhoefer J. 2006). Besides, there are several other necessary reasons for us to consume of sugar in our diet. Some of these are Metabolizing fats: Thus preventing use of proteins for energy in our body which are otherwise required as structural constituents.

Reservoir source of energy: Glucose can be stored in liver in form of glycogen which act as reservoir of energy. This energy is used up by the body during exercise or when glucose is not available as energy source. Their reservoirs also maintain our blood sugar level stable. Energy source for brain and muscles- An adult brain uses about 140 g of glucose/day, viz viz., half of the total dietary carbohydrate consumed for its functioning. Studies have shown that sugar sweetened beverage or carbohydrate meal are associated with enhancing mental ability such as, improved memorizing power, reaction times, attention span and arithmetic ability. Also, it encourages cognitive effects and even reduces fatigue (Sunram-Lea S I. et al. 2001, Keul J et al. 1990).

Black pepper is pungent and hot in potency, bitter in taste and light to digest, alleviates kapha, treats diseases caused by vitiation of vata, worm infestation and heart diseases and imparts taste. Marica causes sneezing, imparts taste, aggravates all dosas, causes all ailments and is especially contraindicated in prameha and arshas. In comparison to the above, Brhanmarica 100 causes greater sneezing but is not much different from it in its properties (Raghunath Suri, Bhojankutuhala, 2019). Black pepper constituents include fiber, essential oils, piperine, eugenol, the enzyme lipase, and minerals. Essential oil components include α - and β -pinene, limonene, and β -caryophyllene. (Tainter D et al. 2001; Musenga A et al. 2007) Piperine and its isomers are the major factors responsible for the pungency and irritant action of black pepper. The chemical piperine, 1-piperoylpiperidine, is the major bioactive component present in both black and white peppers and individually has numerous reported physiological and drug-like

actions similar to those reported for black pepper. The scientific literature provides evidence that black pepper may have health benefits, particularly in enhancing digestive tract function. (Capasso R et al. 2002, Vazquez-Olivencia W et al. 1992).

Orange pulp make this product as excellent refreshing drink and the properties are it imparts taste, confers strength and quickly satiates the senses (Raghunath Suri, Bhojankutuhak).

MATERIALS AND METHODS

Materials

Procurement- The product is made according to the ingredients and procedure as mentioned in the Ayurvedic Literature as Bhojankutuhak. All the raw materials required for the preparation of "NARANGKSHUDBODHAK" are selected of Good Quality and these raw materials are procured from local stock market. The materials are listed below

- Orange juice(Narang)- 1 cup
- Candied Sugar (Sharkara)- 1 tbsp
- Black pepper (Maricha)- 1/8 tsp

Method

For preparing the product fresh Orange is washed thoroughly. Squeeze the Orange with the help of bare hands and then add 1 tablespoon of Candied Sugar powder for sweetness and other condiments as 1/8th teaspoon of Black pepper powder which will impart slightly pungent taste, mix all the ingredients well to have uniform homogenous mixture and serve chilled. Further the quality of therapeutic food product will be evaluated through sensory analysis.

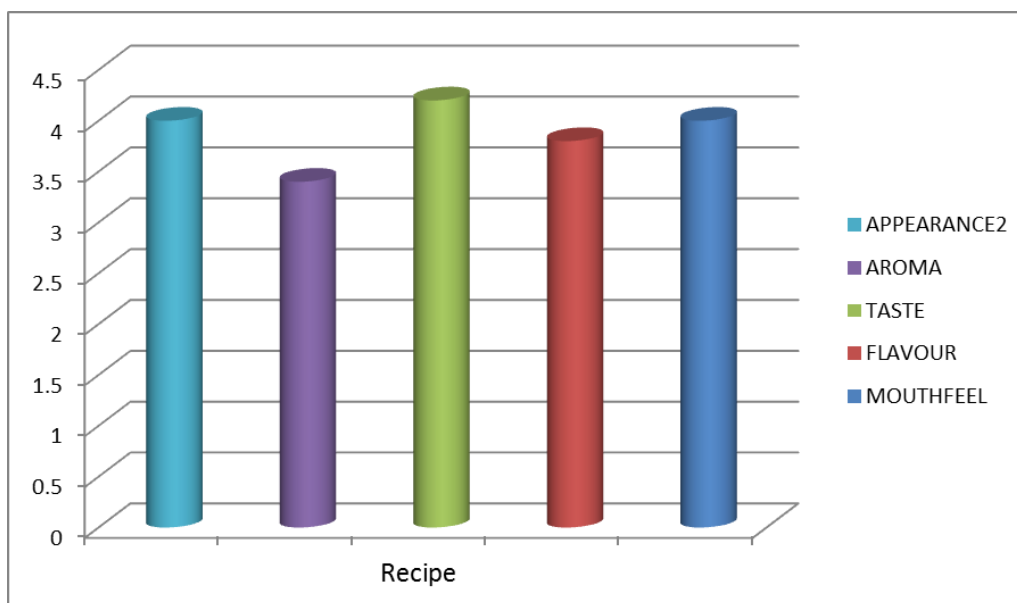
Sensory Analysis Of Narangkshodbodhak

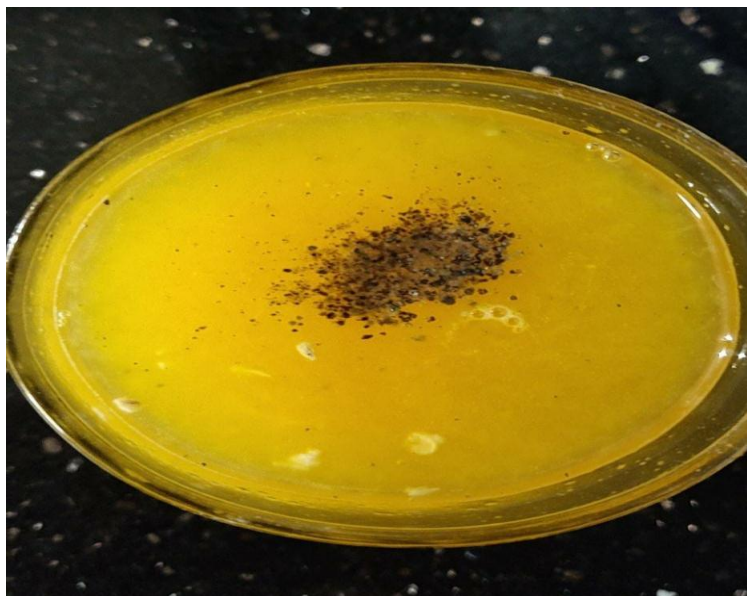
Observation is carried out by the sensory evaluation of the product. Sensory evaluation is carried out by the 5 sensory panelist in which each one has its own observation and remarks about the product. So, the product is scored for its characteristics like appearance, aroma, taste and overall acceptability, on five points Hedonic scale.

- Like a Lot-5
- Like a little-4
- Neither like or Dislike- 3
- Dislike a little-2
- Dislike a Lot-1

Mean Score of Narangkshodbodhak.

SR. NO.	APPEARANCE	AROMA	TASTE	FLAVOUR	MOUTHFEEL
1	4	5	5	5	5
2	4	3	4	4	3
3	4	2	4	2	4
4	4	4	4	4	4
5	4	3	4	4	4
TOTAL	20	17	21	19	20
MEAN	4	3.4	4.2	3.8	4





Narangkshodbodhak

DISCUSSION

Preparation of the product is carried out as per the reference given in the Ayurvedic literature as Bhojankutuhah. The only study of Bhojankutuhah was carried out to understand the method of preparation of the "NARANGKSHUDBODHAK" and further the product was analysed by the sensory evaluation. The sensory evaluation is carried out by 5 semi trained panelists on Five point Hedonic Scale. Ingredients used in the product are of good quality and are procured from the local stock market. It was observed that the recipe is not time consuming and was easy to prepare. About 10 min is required to prepare the product. Another thing that is observed is the raw Orange is not available whole the year, so this recipe can only be prepared in the intense summer season and the market price of raw orange is also increasing day by day. It is not convenient for all to prepare this recipe whole the year.

Orange is the main ingredient used to prepare the "NARANGKSHUDBODHAK" because according to modern science orange juice is considered to be the best antioxidant, prevents dehydration and it replenishes the reserves of sodium chloride and as per Ayurvedic point of view raw mango is sour in taste, strengthens the body, satiates the senses and has fragrant aroma. It is considered as nutritious fruit the raw due to the presence of chemical properties in it as compared to proceed juices.

RESULT

Result of Product Development- The product development was carried out as per the resources, materials, references found in the Bhojankutuhah. ingredients used in the preparation of this product are of good quality and purchased from local stock market. The product was prepared as per the reference and the end product was exhibited slight yellow colour and has

uniform consistency with sweet and sour taste, slightly pungent flavour and pleasant aroma. Final product was served chilled as per mentioned in the procedure and exhibited good physical appearance.

Result of Sensory Evaluation- Sensory evaluation was done by 5 semi trained panelists to evaluate the colour, taste, aroma, sweetness, texture of the given product on Five point Hedonic Scale. Among sensory analysis the product ranked excellent for its Aroma and Appearance. The product "NARANGKSHUDBODHAK" exhibited a fair result with respect to its taste, flavour and texture as per the reference. Then the colour of the product was ranked fairer and exhibited an excellent mouth feel. Overall acceptability is ranked 5 (like a lot). At last the product exhibited good overall acceptability with respect to sensory analysis.

CONCLUSION

The product was successfully prepared as per mentioned in the Ayurvedic literature. The product exhibited excellent overall acceptability with respect to its tangy flavour, orange colour, sweet and sour taste and has pleasant aroma. The product will definitely provide its therapeutic benefit as specified in the Bhojankutuhah.

REFERENCES

1. Franke AA, Cooney RV, Henning SM, Custer LJ. Bioavailability and antioxidant effects of orange juice components in humans. *J Agric Food Chem*, 2005; 53(13): 5170-8.
2. Bai J, Manthey JA, Ford BL, Luzio G, Cameron RG, Narciso J, Baldwin EA. Effect of extraction, pasteurization and cold storage on flavonoids and other secondary metabolites in fresh orange juice. *J Sci Food Agri*, 2013; 93: 2771-81.
3. Baldwin, EA, Bai, J, Plotto, A, Ritenour, MA. Citrus fruit quality assessment: producer and consumer

- perspectives. *Stewart Postharvest Rev*, 2014; 23: 1-7.
4. Murata T. Citrus. In: *Postharvest Physiology and Storage of Tropical and Subtropical Fruits*, Mitra S (ed.), Wallingford, UK: CAB International, 1997, pp. 21-47, U.S. Department of Agriculture, Agricultural Research Service. USDA National Nutrient Database for Standard Reference, Release 28 slightly revised May, 2016. Nutrient Data Laboratory home page, 2016. <http://ndb.nal.usda.gov/ndb/foods>.
 5. World Health Organization. Cardiovascular diseases (CVDs). 2016. <http://www.who.int/mediacentre/factsheets/fs317/en/>.
 6. Kay CD, Hooper L, Kroon PA, Rimm EB, Cassidy A. Relative impact of flavonoid composition, dose and structure on vascular function: A systematic review of randomised controlled trials of flavonoid-rich food products. *Mol Nutr Food Res* 2012; 56(11): 1605-16.
 7. Westenhoefer J. Carbohydrates and cognitive performance. *Aktuelle Ernährungsmedizin*, 2006, 31 Supplement 1: S 96-S 102. Sunram-Lea S I, Foster J K, Durlach P, Perez C. Glucose facilitation of cognitive performance in healthy young adults: examination of the influence of fast-duration, time of day and pre consumption. *Psychopharmacology*, 2001; 157: 46-54. 2 plasma glucose levels.
 8. Keul J and Jakob E. Zur Wirkung von Saccharose auf Fahrverhalten, Kreislauf und Stoffwechsel. *Oesterreichisches Journal fuer Sportmedizin*, 1990; 20: 102-110.
 9. Tainter D, Grenis A. *Spices and Seasonings*, A Food Technology Handbook. 2nd ed. Hoboken, NJ: Wiley-IFFF, 2001.
 10. Musenga A, Mandriol R, Ferranti A, D'Orazio G, Fanali S, Raggi M. Analysis of aromatic and terpenic constituents of pepper extracts by capillary electrochromatography. *J Sep Sci.*, 2007; 30: 612-619.
 11. Capasso R, Isso A, Borrelli F, et al. Effect of piperine, the active ingredient of black pepper, on intestinal secretion. in mice. *Life Sci.*, 2002; 71: 2311Y2317.
 12. Vazquez-Olivencia W, Shah P, Pitchumoni C The effect of red and black pepper on orocecal transit time. *J Am Coll Nutr*, 1992; 11: 228-231.