

Sensory Evaluation of Zobo Drink Spiced with Different Spices

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Abstract

The sensory evaluation of ginger, garlic, black pepper/Cummins and turmeric as spice in the production of Zobo drink was carried out in the study. Zobo drink was prepared from calyxes of Hibiscus using standard method and spiced during four different natural spices which include garlic, ginger, cummin and turmeric. Sensory evaluation shows that there was no significant difference in appearance of the sample spiced with Cummins and turmeric. Though all the sample shows good sensory qualities, there was a significant difference in taste, flavor and general acceptability of sample spiced with Cummins and black pepper when compared with other samples. The sample prepared with Cummins was the most preferred. Cummin showed good potential as natural spice for zobo drink.

Introduction

Zobo drink is a traditional non-alcoholic beverage made from the reddish purple and acid-succulent calyxes of the flower *Hibiscus sabdariffa* by mainly hot water extraction of the leaves (Olayemi *et al.*, 2011). The flower is highly cultivated in the Northern part of the country, probably due to the climate, it is used to produce various types of highly valued food and medicinal products in different parts of the world including Nigeria (Adesokan, *et al.*, 2013). It is a widely consumed, popular health drink derived from the petals of the hibiscus flower and has been traditionally consumed for centuries by warriors and chiefs and lovingly served to growing children by mothers and caretakers. Zobo is commonly found hawked around in packaged transparent polythene sachets or plastic containers in most Northern and some Southern parts of Nigeria. The flowers of *H.sabdariffa* are rich in vitamins and other antioxidants (Kochlar, 1991). The calyx of *Hibiscus sabdariffa* have been found to be rich in vitamins, carbohydrates, protein and antioxidants (Wong *et al.*, 2002) and also mineral (Iubalola *et al.* 2000). Zobo drinks contains microorganisms. This can cause food spoilage (Omemu *et al.*, 2006). Several groups of microorganisms (*Bacillus*, *Streptococcus*, *Penallium*, *Geotichim*, *Leuconostoc*, *Aspergillus*, *Lactobacillus*, *Fusarium* and *Alternaria*) have been associated with Zobo beverage during storage (Akinyosoye and Akinyele, 2000; Ogiehor and Nwafor, 2004). Some health implications of these spoilage microorganisms include; food poisoning, food intoxication and sometimes death in severe cases. At present the production is neither standardized nor mechanized. The proliferation of the associated microorganism's potentiates spoilage and the short shelf life in 1-4 days (Ogheihor and Nwafor, 2004) associated with this relish beverage. Considering the increasing acceptance, socio-economic potentials and ready sources of vitamin C.

Materials and Methods

Dried calyx of *Hibiscus sabdariffa* and pineapple flavor, Garlic, Ginger, Tumeric, sugar and black pepper were obtained from Yakura Market Kano, Nigeria. The dried calyxes was taken

to the laboratory in a clean cellophane bag. Zobo drink was prepared in the laboratory by methods of Ogiehor and Nwafor (2004) and Adenipekun (1998),

Preparation and Zobo Drink.

Dried red *Hibiscus sabdariffa* (15g) was sorted and then washed with tap water. They were then boiled for 10min and allowed to cool. The juice was extracted by squeezing the boiled calyxes and then sieved to obtain the thick suspension. 50g of granulated white sugar and 28ml of pineapple flavor was added into four containers with 100ml of sample each, sample A

Result

Table 1. Shows the result of sensory evaluation of zobo drink spiced with garlic, ginger, black pepper/cummins and turmeric.

Samples	Appearance	Taste	Flavour	General Acceptability
A	2.72±0.94 ^a	2.36±0.92 ^a	2.36±0.12 ^a	2.36±0.81 ^a
B	2.72±0.92 ^a	2.18±0.81 ^a	2.18±0.87 ^a	2.18±0.98 ^a
C	1.64±0.12 ^b	1.73±1.01 ^a	1.73±0.98 ^a	1.82±0.98 ^a
D	1.91±1.04 ^b	2.45±1.06 ^b	2.45±1.06 ^b	2.09±0.41 ^a
P-value	0.401	0.45	0.47	0.67

Mean ± SEM, Analysis of variance, Duncan Multiple Range Test.

Mean with the same superscript are not statistically different, and mean with different superscript are statistically different. Sample A=zobo spiced with garlic, B=zobo spiced with ginger, C= zobo spiced with black pepper/Cummins, D= zobo spiced with turmeric.

There was no significant different between the spiced zobo. However the appearance of zobo spiced with garlic and ginger was observed to higher appearance when compared with zobo spiced with black pepper and turmeric. Ginger is a very common spiced in household production of zobo. The popular choice of ginger and garlic could be due to the fact turmeric and black pepper are not commonly used in most Nigerian homes. There was no significant different between spiced zobo tastes. However the zobo spiced with turmeric taste better when compared with the other samples. Also the sensory evaluation result show statistically different between zobo spiced with turmeric and other samples.

Flavour is an important sensory quality in food drink and beverages. An attention has been shifted drawn from artificial spices and condiments to natural ones due to health reasons. The result shows that zobo sample spiced with turmeric was rated with higher flavor when compared with other samples. However the flavor of sample spiced with turmeric was significantly different from other samples.

All the samples were generally accepted however. Zobo sample spiced with ginger was mostly accepted when compared with other sample. Sample were not statistically different for general acceptability.

Conclusion/Recommendations

This study shows that ginger and drink enhances the appearance of zobo drink, and turmeric enhances the flavor and taste of zobo drinks. Turmeric

References

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