Development of Black Tea incorporated tomato sauce

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Introduction

Tea has a lot of health beneficial components and also considered an energy active booster. Current trend is moving to the health benefits concepts and green production. Under this condition, there is a huge demand for black tea sauce like products. There is a high demand for Sri Lankan black tea in Global market due to some specific characteristics. But, still we are failing on tea value addition. Therefore, improving value addition practices and new product development are more essential to Sri Lanka to survive in the Global market.

Recently, research has focused on green tea. Green tea is loaded with the compound epigallocatechin gallate (EGCg), a powerful anti-oxidant. Since the fermentation process used to make black tea converts EGCg into other compounds, researchers assumed black tea had less health benefits than green tea. However, recent studies indicate the compounds contained in black tea which are theaflavins and thearubigens, do more than contribute to its dark color and distinctive flavor. They also provide health benefits originally attributed solely to green tea (Herath, H.M.U.N., and De Silva, D., (2006).

Objectives

The main objective in the present study was to black tea incorporated tomato sauce while the specific objectives were to determine appropriate amount of ingredients to be added to the product and to extend shelf life, in order to obtain the desired product quality.

Method

Small pieces of tomatoes and green chilies were mixed using a grinder and salt, chili, black tea brew, honey, garlic and tamarind extraction were added into the mixture until it becomes a cream. The cream was heated until it becomes tick. Then filled into the sterilized glass bottles by using hot filling method. All microbial analysis and proximate analysis were conducted according to the SLSI standard (260: 2008). Statistical analysis was undertaken according to the Friedman test under 5% significance level, by using MINITAB – 16 software package and Microsoft – Excel package.

Results and Discussions

Table 1 given the Physico-chemical properties and proximate analysis of black tea incorporated tomato sauce. According to proximate analysis, moisture content was 14 % and protein content was 0.5 %. Total soluble solid content of the product was 38. pH of the product was 4.42 and tritratable acidity was 3.69 %. Total poly phenol content was 350 mg GAE/g. By doing sensory evaluation from Friedman test from Minitab 16 software the product contained the best characters of sauce.

Table 1. Physico-chemical properties and Proximate Analysis of Black Tea Incorporated Tomato Sauce

Constituents	Amounts	Method of Test
Total Soluble solid Content (brix value)	38	SLS 1332
Total Acidity	3.69 %	SLS 347
pH Value	4.42	-
Total Poly Phenol Content	350 mg GAE/g	Gallic Acid
Moisture Content	14 %	SLS 348
Protein Content	0.5 %	SLS 348

According to the microbial analysis there were not yeast, moulds and *Escherichia coli* growth in the product. Total plate count was increased during 1 month period.

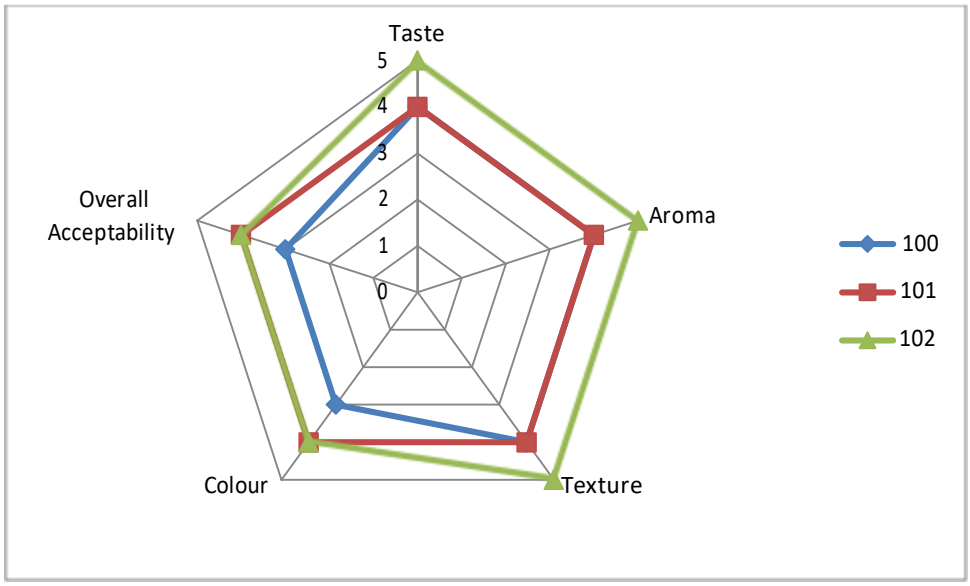

Figure 1. Web diagram for treatments 100, 101, 102 in sensory evaluation

Figure 1 shows that Taste, Aroma, Texture, Colour and overall Acceptability is higher in Treatment 102 than the other treatments.

Conclusion and Suggestions

As a new value added product if it will reach to customers, it may contribute to more Sri Lankan exports as well. Attraction from the child to the adult one to increase food appetite, low cost of production, low purchasing cost and high market demand are the key benefits of the product. By doing sensory evaluation from Friedman test from Minitab 16 software the product was include the best characters of sauce.

Treatment 102 has been selected as best products through sensory evaluation, proximate analysis and shelf life analysis. With reference to the microbial analysis, it can be concluded that the product have more than two months of shelf life.

According to the statistical analysis, nutritional analysis and microbial analysis the product remains under acceptable level of human consumption.

Reference

Herath, H.M.U.N., and De Silva, D., (2006). Strategies for Competitive Advantage in Value Added Tea Marketing, Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka.