Development, Characterization and Evaluation of Vitamin C Enriched Red Wine Using Roselle (Hibiscus Sabdariffa) and Peppermint (MenthaPiperita L.) Extract

Tirna Purkait[1] and Sangeeta Pandey[2]

[1]*Msc.2*[nd] *Year, PG Food Science and Nutrition, Mount Carmel College (Autonomous),*
Bangalore University, Bengaluru, Karnataka 560052
[2]*HOD, PG Food Science and Nutrition, Mount Carmel College (Autonomous),*
Bangalore University, Bengaluru, Karnataka 560052
Email: [1]tirna.purkait@gmail.com, [2]pandey.sangeeta@yahoo.com

Abstract—*Wine is called as a functional fermented food as it shows several health benefits. This fermented undistilled alcoholic beverage is produced by anaerobic fermentation of grape sugars to ethanol by the wine yeast. In this study, roselle (Hibiscus sabdariffa) and peppermint (Menthapiperita L.) extract were used for making the wine along with main ingredients to obtain nine variations of wine. All the ingredients are best known for their medicinal and nutritional benefits. Baker's yeast (Saccharomyces cerevisiae) was used for the fermentation process. Each variation along with the standard red wine (control) was fermented for 28 days. Characterization properties like pH and Total Soluble Solids (TSS) were measured and observed weekly. After 28 days, sensory evaluation was conducted for the developed variations. The results showed that the variations with 10% of roselle were found to be the most accepted and amongst them, red wine with 10% roselle and 6% of peppermint extract (V2T3) was the best selected one by sensory panelists. The final products for all the variations and control were tested to measure their pH, specific gravity (SG), alcohol content and vitamin C. The pH, SG and alcohol by volume (%) of the most accepted variation (V2T3) were 2.96, 1.006 and 10.73% respectively. The vitamin C content was analyzed and the result showed that the most accepted variation (V2T3) contained 25.40mg/100ml of vitamin Cwhereas the standard red wine had only 1.91mg/100ml. A statistical analysis (person's product-moment correlation) between sensory scores and vitamin C content of the wines were done and the data showed that the samples are negatively correlated (-0.4295658) and the p-value is 0.2154.Hence, the correlation is moderately negative and there is no significant relationship between these two variables.*

Index terms*: pH, TSS, SG, Fermentation, ABV %, Roselle, Peppermint, Wine.*