

Sensory Acceptability of Novel Sorrel/Roselle (*Hibiscus sabdariffa* L.)

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Abstract : Plant phenolics which are found in red grape wine, have received considerable attention due to their potential antioxidant activity. Grape by-products contain large amounts of phenolic compounds, mostly flavonoids at high concentrations of 1000-1800 mg/L. Plant phenolics contribute to the flavor, and nutritional value. Sorrel or roselle (*Hibiscus sabdariffa* L.) belongs to the family Malvaceae. The brilliant red pigments in sorrel calyces contain anthocyanins which are the major sources of antioxidant capacity. Consumers are demanding novel beverages that are healthier, convenient and have appealing consumer acceptance. The objectives of this study were to investigate the effects of adding grape polyphenols and the influence of presenting health claims on the sensory acceptability of the wines. Fresh red sorrel calyces were fermented into wines. The total soluble solids of the pectinase-treated sorrel puree were from 4°Brix to 23.8°Brix. Polyphenol in the form of grape pomace extract was added to sorrel wines (w/v) in specified levels to give 0, 25, 50 and 75 ppm. A focus group comprising of 12 panelists was used to select the level of polyphenol to be added to sorrel wines for sensory preference. The sensory attributes of the wines which were evaluated were colour, clarity, aroma, flavor, mouth-feel, sweetness, astringency and overall preference. The sorrel wine which was most preferred from focus group evaluation was presented for hedonic rating. In the first stage of hedonic testing, the sorrel wine was served chilled at 7°C for 24 h prior to sensory evaluation. Each panelist was provided with a questionnaire and was asked to rate the wines on colour, aroma, flavor, mouth-feel, sweetness, astringency and overall acceptability using a 9-point hedonic scale. In the second stage of hedonic testing, the panelist were instructed to read a health abstract on the health benefits of polyphenolic compounds and again to rate sorrel wine with added 25 ppm polyphenol. Paired t-test was used for the analysis of the influence of presenting health information on polyphenols on hedonic scoring of sorrel wines. Focus groups found that the addition of polyphenol addition had no significant effect on sensory color and aroma but affected clarity and flavor. A 25 ppm wine was liked moderately in overall acceptability. The presentation of information on the health benefit of polyphenols in sorrel wines to panelists had no significant influence on the sensory acceptance of wine. More than half of panelists would drink this wine now and then. This wine had color L 19.86±0.68, chroma 2.10±0.12, hue° 16.90 ±3.10 and alcohol content of 13.0%. The sorrel wine was liked moderately in overall acceptability with the added polyphenols.

Keywords : sorrel wines, Roselle *Hibiscus sabdariffa* L, novel wine, polyphenols, health benefits, physicochemical properties

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