ABSTRACT

Phenolics are one of the important components of wine that can determine the quality of wine. The winemaking techniques and fermentation conditions are known to impact the composition of the wine. Different composition of the wine contributes differently to the wine in terms of sensory attributes. This study focuses on the impact of fermentation conditions (pericarp ratio: 0, 5, 7.5, and 10% and yeast strain: Montrachet red® and Pasteur red®) on the extraction of phenolics and sensory characteristics of mangosteen wine; eight different treatments were performed in triplicate. All treatments were fermented at room temperature (30 ± 2°C). The different yeast strains did not have a significant effect ($P<0.05$) on the alcohol content and acidity. However, with increasing pericarp addition, the acidity of the wine also increased and the alcohol content of lower pericarp ratio (0 and 5% w/v)) wine was higher. In case of pH, both the yeast and pericarp addition did not have a significant effect except at 5% where the pH of wine fermented using Pasteur red® was lower. The amount of pericarp added had a significant effect on the color density, but the different yeast strains did not have a significant effect. With increasing pericarp ratio, the amount of phenolics, tannin, and anthocyanin also increased with the highest amount of total phenolics at the end of the fermentation being 4000 mg/L catechin equivalent.

53 sensory descriptors were generated among which 20 were flavor descriptors, 19 were aroma descriptors, 3 were taste descriptors, 6 were mouth feel, and 5 were aftertaste descriptors respectively. The 53 descriptors could be categorized into fruity, acidic, woody, vegetal, chemical, floral, and spice. At lower pericarp concentration, the yeasts made no apparent difference to the sensory characteristics but at higher pericarp ratios, the difference in sensory characteristics due to different yeasts were more apparent. Wine with lower pericarp ratio also had more characteristics of mangosteen pulp whereas higher pericarp ratio wine had more mangosteen pericarp characteristics.

The ratio of pericarp added affected the extraction profile of phenolics whereas the strain of yeasts made no significant difference. The yeast affected sensory characteristics of the wine only at higher pericarp concentrations

Keywords: *phenolics, tannins, mangosteen wine, fruit wine*

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