PC-03

Influence of Ripe Persimmon on Quality Characteristics and Antioxidant Potential of Sparkling Wine

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[Introduction]
Sparkling wine has widely been consumed because of its high added value. Sparkling wine is mainly produced using grape, however different fruits have been studied to ferment the wine. The objective of this study was to determine the quality characteristics and antioxidant potential of sparkling wine produced by using ripe persimmon with three strains of *Saccharomyces*, that is, *S. bayanus*, *S. carlsbergensis*, and *S. cerevisiae*.

[Materials and Methods]
Persimmon sparkling wine was prepared using 2-step fermentation. Briefly, a mixture of sugar, ascorbic acid, and SO2 was kept at 25°C for 5 h. The mixture of ripe persimmon and dry yeast activated at 60°C for 30 min was fermented for 14 days at 22°C, followed by removal of ripe persimmon pulp and re-fermentation for 14 days at 22°C. Different persimmon sparkling wines prepared by different amounts of water and inoculation methods were named as SW-1: persimmon sparkling wine was fermented with ripe persimmon and water at a ratio of 1:0 (w/w), SW-2: persimmon sparkling wine was fermented with ripe persimmon and water at a ratio of 4:1 (w/w), SW-3: persimmon sparkling wine was fermented with ripe persimmon and water at a ratio of 1:4 (w/w), SW-4: persimmon sparkling wine was fermented with ripe persimmon and water at a ratio of 1:1 (w/w), and Ⅰ : The diluents were mixed with base wine and distilled water at a ratio of 1:1 (w/w), and the diluted samples, added with 0.05% of yeast and 1% of sucrose, were cultured at 25°C for 48-72 h. After preparation, the stains *Saccharomyces bayanus*, *Saccharomyces carlsbergensis* and *Saccharomyces cerevisiae* were inoculated into the culture broth in base wine, Ⅱ: The 0.05% of the stains *Saccharomyces bayanus*, *Saccharomyces carlsbergensis* and *Saccharomyces cerevisiae* and 1% of sugar in water (25°C) were mixed and activated at 50°C for 30 min. In the second step, the mixture of first ferment, sugar and yeasts was fermented in a 750 mL glass bottle at 22°C.

[Results and Discussions]
Alcohol content was significantly varied in base wine with different proportion of persimmon fruit and water. Antioxidant potential in term of DPPH radical scavenging potential of the base wine prepared with 4:1 ratio of persimmon and water was significantly high. However, the tannin content of the wine samples was not significantly affected. Sensory characteristics in term of full-body was also significantly high for prepared with 4:1 ratio of persimmon and water. Inoculation method also affected the ethanol content of persimmon sparkling wine. Results of this experiment showed that good quality persimmon sparkling wine could be prepared by fermenting 4:1 ratio of ripe persimmon and water during first fermentation.

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