

# Studies on the Preparation of Functional Onion Red Wines

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## ABSTRACT

This thesis can be divided into four parts. In the first part of this thesis, blanched and un-blanched onions were used as raw material to prepare onion wine. The antioxidant abilities and the quality of onion wine prepared with or without K<sub>2</sub>S<sub>2</sub>O<sub>5</sub> added were studied. In the second part of this thesis, red wine made from Merlot grape juice were prepared and the antioxidant abilities and the quality of this wine were studied. In the third part of this thesis, the optimum mixing ratio of the onion wine and Merlot red wine to prepare onion red wine was studied. In the fourth part of this thesis, dried onion powder was soaked in ethanol solutions to find out the optimum condition to prepare onion tincture. The onion tincture was then mixed with red wine to find out the optimum mixing ratio of the onion tincture and the red wine to prepare onion red wine. The results of this thesis showed that blanched and un-blanched onion wines both showed very high DPPH radical scavenging activity, and total antioxidant ability but low in ferrous ion chelating ability and relative reducing ability. The DPPH radical scavenging activity and the total antioxidant ability of the onion wine was not affected by the adding of K<sub>2</sub>S<sub>2</sub>O<sub>5</sub> in the amount used in this study. The onion wine prepared by blanched onion and fermented with K<sub>2</sub>S<sub>2</sub>O<sub>5</sub> added was found to be more preferred. The red wine prepared in from Merlot grape juice showed higher antioxidant ability than the onion wines prepared in this thesis. The results in this thesis showed that onion red wines that bearing higher red wine ratio had higher antioxidant ability than those bearing lower red wine ratio. The red wine prepared by mixing one part of the blanched onion wine that fermented with K<sub>2</sub>S<sub>2</sub>O<sub>5</sub> adding with four parts of red wine were most preferred. Onion tinctures were also prepared in this thesis. The results of this thesis showed that blanched and un-blanched onion tinctures both showed very high antioxidant ability. The preference of onion red wine prepared by mixing the fermented onion wine and red wine and by mixing the onion tincture and red wine were compared. The onion red wine prepared by mixing the fermented blanched onion wine and red wine was found to be more preferred than that by mixing onion tincture and red wine.

Keywords : onion ; fermentation ; red wine ; antioxidant ability

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