Studies on the Preparation and Antioxidant Properties of Fortified Syh-Wuh-Tang

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ABSTRACT

Fortified Syh-Wuh-Tang is prepared by decocting with water using ten kinds of herb, including Angelica sinensis, Rehmannia glutinosa, Paeonia lactiflora, Ligusticum chuanxiong, Ziziphus jujuba, Euphoria longan, Lycium barbarum, Glycyrrhiza uralensis, Cinnamomum cassia branch, and Crataegus Pinnatifida Bunges, as materials. Due to the traditional decocting with water is time- and labor-consuming and inconvenient, and the obtained decoction can not be kept in good quality for a long period, this research was therefore conducted to utilize different kinds of water (ground water, tap water, and reverse osmosis water) to produce bottled Fortified Syh-Wuh-Tang, which is expected to be more convenient for consumers, and the antioxidant properties, color, sensory quality and trace elements of the products were studied. All the results are expected to be as references for the manufacturing of bottled Fortified Syh-Wuh-Tang. In addition, considering the packing materials and a warm-type product for selling in the future, we used the treated ground water in the factory to produce bottled Fortified Syh-Wuh-Tang and investigated the effects of temperatures (room temperature and 55°C) and light on the total phenolics, color, and stability of antioxidant activities of bottled Fortified Syh-Wuh-Tang during storage for 180 days. The results showed that the pH values and the amount of trace metal ions of the water used for decocting had a profound effect on the quality of the products. The product prepared using ground water for decocting exhibited darker red in color and contained higher amounts of trace metal ions. The product prepared using reverse osmosis water had a higher sensory score in aroma item. The total acceptance score was not significantly different among the products prepared using different kinds of water. As for the antioxidant properties, the product prepared using ground water had the highest scavenging effects on DPPH radical and superoxide anion. For the product stability during storage, the color change of the product stored under un-lighting was less than that under lighting. When the products were stored at 55°C and for a long period, the oxidation of the polyphenolics was accelerated and therefore the amount of total phenolics was decreased. The scavenging effect on DPPH radical could be enhanced and the decrease in superoxide anion scavenging ability during the early period of storage could be slowed when the products stored at 55°C, however, the decrease in reducing power and total antioxidant capacity of the products was expanded. The antioxidant properties of the product during storage were not significantly affected by the light.

Keywords : Antioxidant properties, Fortified Syh-Wuh-Tang, Storage, Water quality

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