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Research Project The Effects of Temperature on the Quality of White Tea Concentrate Drink

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Abstract

White tea product start to drawn attention due to the health benefits which referring to their catechins content and antioxidant properties. There are various product of white tea at the market which in the form of tea bag, powder, ready-to-drink products and many more. However, heat treatment during production, storage and transport conditions caused the degradation of catechin in the product. Therefore, low amount of catechin in white tea products did not effective enough if the purpose is to obtain health benefits. This study was carried out to develop white tea concentrate drink with high stability of the catechins. White tea concentrated drink was formulated using different amount of ascorbic acid (AA) and sucrose (SC) which fixed amount of 200 mg of white tea extract (40 mg total catechins) and 90 mg of citric acid were used in 50 ml of distilled water. After sensory evaluation was conducted, best three formulations, Formulation 6 (AA=50mg; SC=8g), Formulation 4 (AA=25mg; SC=8g) and Formulation 2 (AA=10mg; SC=8g), were studied to investigate the quality and stability of the drinks stored at three different temperatures (15, 25 and 35°C) for 33 days. For all tested formulations and temperatures, total phenolic content, total catechis content and antioxidant activities were found to decrease slightly from day 0 to day 33. These finding results were unexpected. Good stability of catechins content and antioxidant activities might be due to the drinks having low pH and sufficient vitamin C content which can stabilize and retard catechin degradation during storage at tested temperatures.

Keywords White tea, catechin stability, product development, phenolics, storage.