

Effect of Melting on Flavor Granules Used in Flavored Tea Bags

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Flavored tea highly contributes to the value added exports and causes high revenue to the county. Sri Lankan value added tea in total tea exports increased slightly from 39% to 42% in 2014. Although flavors play a big role in the value addition process, hygroscopic property of black tea, hot and humid environment may cause a deleterious effect for the final products. The main quality problem found in flavored tea is melting of flavor granules during the storage and transportation, leading to quality failure and the final product, therefore, is not in compliance with the expected standard. This research was focused to determine the effect of temperature, relative humidity and the storage time of the product on melting of three types of flavor granules such as strawberry, forest fruit and honey. The melting effect on flavor granules was assessed under three levels of temperature (28 ± 2 °C, 33 ± 2 °C, 38 ± 2 °C) and three levels of relative humidity ($58 \pm 2\%$, $68 \pm 2\%$, $78 \pm 2\%$), altogether as nine treatments. The physical state of flavor granules was observed during the six weeks for three months. Binary logistic regression is used to identify the relationship between the predictors and the prediction. Results revealed that temperature, relative humidity affected significantly on melting of flavor granules. Storage time also had a significant effect on melting of strawberry flavor granules and honey flavor granules. Flavor melting indicated a significant increase with the increase of temperature and relative humidity. Keeping relative humidity at $58 \pm 2\%$ and temperature at 28 ± 2 °C is the best level in order to mitigate the amount of melting of flavor granules used in black tea.

Keywords: Black tea, Flavor granule, Liquid flavor, Relative humidity, Temperature