

INVESTIGATION of EFFECT of THE CREAMED HONEY PRODUCTION PROCESS on THE 5-Hydroxymethylfurfural (HMF) CONTENT of HONEY

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The predominant compounds found in honey are carbohydrates, mainly composed of fructose and glucose. At the same time, honey is extremely rich in enzymes, amino acids, organic acids, vitamins, and phenolic substances. Honey is a supersaturated solution with more than 70% sugar and less than 20% water content. Crystallization of supersaturated solutions is expected from a physicochemical point of view. Most honey is supersaturated with glucose, which is less soluble than fructose; so at room temperature glucose is prone to crystallize in the monohydrate form. The water in honey binds carbohydrates with hydrogen bonds. It is understood from these situations that under certain conditions, the crystallization of honey (colloquially known as confectionery) is a very natural phenomenon. Controlled crystallization is a good alternative to prevent the undesired crystallization phenomenon in honey and the application of heat treatment to honey, is seen as a solution to improve this phenomenon. Creamed honey is a new product formed as a result of controlled crystallization made to improve the sensory and physical properties of honey, such as giving natural honey a spreadable feature, with crystals in very small sizes that cannot be perceived by the palate. In other words, honey is crystallized to make it spread like butter and prevent it from dripping. As a result of various processes (such as temperature) applied to honey, the amount of undesired 5-Hydroxymethylfurfural (HMF) may increase. In this study, creamed honey was produced from filtered honey and the effect of this creamed honey production process on the HMF content of honey was investigated by the High Performance Liquid Chromatography (HPLC) method. As a result of this study, it was concluded that the creamed honey production process did not have a significant effect on the HMF content of honey ($p>0.05$).