CORRELATION BETWEEN SENSORY ANALYSIS AND INSTRUMENTAL TEXTURE PROFILE OF LOW-FAT CHEESECURDS WITH DIFFERENTS MOISTURE AND FAT CONTENT

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Moisture and fat content are the main factors influencing the texture of cheesecurd. Thus, the relationship between them must be considered in developing a product with reduced fat content. Therefore, the present work aimed to evaluate the effect of variation of these components on the texture of low-fat cheesecurds and correlate sensory and instrumental measurements. Nine formulations were developed containing different fat (8.7, 10.2, 13.7, 17.3 and 18.7% wt) and water (64.0, 65.0, 67.5, 70.0 and 71.0% wt) concentrations. The experiment followed a central composite rotatable design. Thickness and sensory spreadability were evaluated by nine trained judges. The formulations were evaluated using the texture profile analysis (TPA). The correlation between sensory and instrumental analysis was carried out by Pearson's correlation. Firmness, gumminess, chewiness, cohesiveness and elasticity in the formulations showed significant differences (p < 0.10). Fat and moisture constituents contributed inversely to the intensity of texture properties. Formulations with higher content of fat and moisture showed less thickness and greater sensory spreadability, due to dissolution of non-fat solids, resulting in loss of consistency. Formulations with intermediate level of moisture and fat showed intermediate intensities of texture attributes, which indicates that fat reduction should be coupled with increased moisture, thus providing a balance in protein matrix and, hence, in texture parameters. Thickness was directly correlated with gumminess (r=0.82), firmness (r=0.79), elasticity (r=0.94) and chewiness (r=0.80). Therefore, the oral consistency of cheesecurds can be predicted. These instrumental parameters showed significant negative correlations with sensory spreadability (p < 0.10).

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