Understanding the behavior and desires of consumers is a key tool for the success of the food industry. However, because research and consumer trials are expensive and time consuming procedures, it is desired to utilize instrumental measurements that may be related to sensory acceptability, and thus can be used routinely in industry. Therefore, the objective of this study was to classify the sensory acceptability of light cheesecurds made with different combinations of fat and water, based on instrumental texture measurements using artificial neural networks (ANN). Scores were used for acceptance of nine light cheesecurds formulations, which were evaluated using the nine-point hedonic scale filled out by one hundred consumers of cheesecurds. A back-propagation ANN was developed containing eight neurons in the input layer corresponding to the variables related to instrumental measurements of the initial stress, viscosity, tangent δ, firmness, gumminess, cohesiveness, chewiness and elasticity, and two neurons in the output layer, corresponding to the Accepted (scores 6 to 9) and Rejected classes (1 to 5). An ANN consisting of 8-3-3-2 neurons showed excellent performance in classification of the two acceptance categories, presenting a high classification rate of cheesecurds in the Accepted (99%) and Rejected categories (97%) for data validation, as well as a low validation error (0.1022). Thus, it appears that the ANN presented great potential for modeling sensory acceptance in function of the instrumental measurements of the product, with advantages such as accuracy, speed, excellent capacity for generalization and simplicity, which makes it a promising alternative for industrial applications.

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