P 476

OPTIMIZATION OF DIFFERENT TEMPERATURE–TIME COMBINATIONS ON PHYSICOCHEMICAL AND SENSORY FEATURES OF SOUS-VIDE COOKED TURKEY CUTLET SAMPLES

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Sous vide is a French word means ''under vacuum'' and describes a cooking method which the food cooked in a heat-stable vacuum package, in a circulating water oven under the precisely controlled time and temperature. Sous vide cooking can be used in many areas such as commercial caterers, hotels and restaurants, transport systems, schools and fast food restaurants. Despite of the several advantages exhibited by this type of products like convenience and improved eating quality, if proper temperature and time combination is not provided physicochemical and sensory quality of product can be affected. In this study, turkey cutlet samples used as material and response surface methodology was used to optimize the effect of cooking temperature (CT: 65-70-75°C) and cooking time (Ct: 20-40-60 min.) on physicochemical and sensory characteristics of samples. The effect of these factors was evaluated on cooking loss, cooking yield, pH, water activity, protein, oil, moisture, ash, TBA, peroxide value, acidity, colour parameters, texture profile values and sensory analyze values on sous vide cooked turkey cutlets. Design expert (version 9.0.3) software was used to analyze the experimental data. A two-factor and a central composite design consisting of 13 experimental runs were employed including 5 replicates at the center point. Each analyze was applied on three samples and mean values were used as data. A quadratic polynomial model was used for predicting the response. Significant model parameters ($p < 0,001$) were used for the optimization and present results recommend the use of CT of 65°C and Ct of 27.79 min.

Keywords: Sous vide, Optimization, Response Surface Methodology, Turkey Cutlets

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