PERFORMANCE OF BEEF SILVERSIDES (SEMITENDINOSUS MUSCLE) PROCESSED BY COOK CHILL SYSTEM

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Cook chill is a food processing system, that when correctly applied retains the food’s sensory characteristics and reduces water loss, increasing the yield when compared to conventional production systems. This study aims at optimizing the yield of beef silverside processed by cook chill system in a combi-oven steamer, using response surface methodology. Cooking conditions followed a central composite design; a total of 17 data points with three independent variables were evaluated at the following levels: temperature from 90 to 200°C; cooking time after reaching 80°C in the thermal center, from 0 to 30 min; and steam injection scale from 50 to 100%. The samples were then cooled and stored at 5°C. Cooking yields ranged between 57.60% and 78.50% and were thus higher than the yield obtained in the conventional system, which was 53.31%. The response surface data indicates that the efficiency is maximized with lower cooking times - values higher than 70% are obtained for a cooking times shorter than 7.5 minutes. According to the literature, collagen begins to be degraded at 80 °C, increasing the tenderness of the meat until it increases the potential for loss of moisture and the hardening of myofibrils occurs, reducing the yield as the cooking time increases. Intermediate temperatures and steam injections (130 °C and 75%, respectively) also favor yield optimization. On cooling, an average yield of 95.50% was found, causing little change in the overall yield of the processed product.