

Properties Changes of Chicken Breast during Sous-Vide Cooking and Acceptance for Elderly

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<https://doi.org/10.12982/CMUJNS.2019.0012>

Received: July 16, 2018

Revised: October 24, 2018

Accepted: November 1, 2018

ABSTRACT

The sous-vide process has been used in cooking to maintain nutrients and improve texture of meat. This improvement in nutrients and softening of the texture could be advantageous for the elderly. The objective of this research was to study effects of sous-vide cooking on the properties and changes of chicken breast fillet and their sensory acceptance by the elderly. Chicken breast fillets were vacuum packed and cooked at 60°C for different times from 1 to 8 h comparing the effects with a common way of cooking as a control (100°C for 30 min). Sous-vide cooked chicken had significantly ($P<0.05$) higher yield percentage, water holding capacity (WHC) and redness and lower hardness, chewiness and lightness than the control. With increased sous-vide cooking time the yield percentage, WHC, redness and hardness significantly ($P<0.05$) decreased, while lightness and chewiness significantly increased ($P<0.05$). Sous-vide cooking for 3, 4 and 5 h resulted in the lowest hardness, which was in the range of 40.05-60.01 N and lowest chewiness in the range of 11.24-16.88, but the highest springiness in the range of 0.03-0.04. A sensory evaluation panel of 50 people of 60-70 years old tested samples of the sous-vide breast chicken after cooking for 3, 4 or 5 h. Their evaluation showed that cooking for 4 h had the highest acceptance score compared with other times.

Keywords: Chicken, Chicken breast, Elderly, Sous-vide, Tenderness