Effect of Marination Method and Holding Time on Physicochemical and Sensory Characteristics of Breast Meat from Spent Laying Hens

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The study described herein investigated the effect of marination method and holding time on the physicochemical and sensory attributes of spent hen breast meat. A total of 60, 90-weeks old Shaver Brown spent hen breast meat samples (average weight ± SD, 20 ± 5 g each) were used. The experimental design was 4 x 3 factorial with four marination methods (unmarinated control, tumbling, injection and immersion) and three holding times (4h, 8h and 12h) combinations. Meat samples marinated using a commercial marinade mixture were analysed for marinade uptake, pH, cooking yield, cooking loss, hardness, external and internal colorimetric parameters (Lightness: L\*, Redness: a\* and Yellowness: b\*). A sensory evaluation was carried out using 30- untrained panelists. Injection marination (P<0.05) resulted the highest marinade uptake. Meat held for 8h after tumble marination resulted the optimal and the highest pH. No method x holding time interaction (P>0.05) was observed for cooking yield. Marinated meat when held for 4h resulted the highest (P<0.05) cooking loss. Increasing holding time from 4h to 8h yielded a similar cooking loss in tumble marinated meat. Holding tumble marinated meat for 12h and immersion marinated meat for 4h resulted soft textured meat (P<0.05). No method x holding time interactions were observed for external and internal L\* values of uncooked meat. Holding meat for12h after immersion marination reported the highest scores for aroma, colour and overall acceptability. By considering all positive two way interactions of the physicochemical parameters tested, the present study concluded that, holding meat at 4 ℃ for 8-h after immersion marination is the best in developing breast meat quality of spent hens. Spent hen breast meat when held at 4℃ for 12h after immersion marination attracts panelists the most.

**Keywords:** *immersion, injection, marination, spent hens, tumbling*