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

**CGW Abeysekara1\*, RK Mutucumarana1, P Kakunamullage2**

*1Department of Livestock Production, Faculty of Agricultural Sciences, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka.*

*2Bairaha Farms PLC, Kandalanda, Urapola, Sri Lanka.*

*\*chathunigimhani1@gmail.com*

The study described herein investigated the effect of the 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 at 4 ℃ (4 h, 8 h and 12 h) combinations. Meat samples marinated using a commercial marinade mixture were analysed for marinade uptake, pH, cooking yield, cooking loss, hardness, and external and internal colourimetric parameters (Lightness: L\*, Redness: a\* and Yellowness: b\*). A sensory evaluation was carried out using 30 untrained panellists. Injection marination (P<0.05) resulted in the highest marinade uptake. Meat held for 8 h after tumble marination resulted in 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 4 h resulted in the highest (P<0.05) cooking loss. Increasing holding time from 4 h to 8 h yielded a similar cooking loss in tumble-marinated meat. Holding tumble marinated meat for 12 h and immersion marinated meat for 4 h resulted in 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 for 12 h 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 12 h after immersion marination attracts panellists the most.

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