Development of Cost Effective Jerky from Spent Hen Meat and Maize (*Zea mays*) Flour

L.D.T.N. Gunawardana, I.P.A.U.N.K. Illippangama and D.D. Jayasena

Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka

Jerky is a favorite, semi-dried and shelf stable meat based snack food in the world with high nutritive value. This study was conducted to develop jerky from spent hen meat by addition of maize flour (MF) for reducing the cost of production. Ground meat was mixed with ingredients, reformed into strips, and dried in an oven (85°C, 1½ h). Six treatments of spent hen meat jerky (SHJ) were prepared by changing the salt-pepper combination with and without bee honey. A sensory evaluation was conducted to select the best recipe and it was taken as the control. Four treatments were then prepared by replacing spent hen meat with MF at 3%, 6%, 9%, and 12% (w/w). Two best recipes were then selected from a sensory evaluation and they were vacuum packed and stored under the room temperature. The control sample and the two selected samples were tested for drying yield, meat quality traits, TBARS value, and microbial quality. First sensory evaluation showed that the highest overall acceptability was recorded for 1.5% (w/w) salt and 0.5% (w/w) black pepper combination without bee honey ($p<0.05$). According to the second sensory evaluation, SHJ with 3% and 6% (w/w) MF showed better overall acceptability ($p<0.05$). The drying yields of three treatments were comparable ($p>0.05$). The initial lightness and yellowness values of three SHJ were significantly different ($p<0.05$) and the redness value was comparable ($p>0.05$). SHJ with MF showed a higher ash content and lower pH, moisture, crude fat and crude protein contents than the control sample ($p<0.05$). SHJ with 6% (w/w) MF had the lowest fat content with the highest ash content ($p<0.05$). TBARS values for all treatments increased with 28-day storage period, but within the accepted limits; SHJ with MF showed lower TBARS values than the control sample ($p<0.05$). *Salmonella* and *Escherichia coli* were not detected in any sample. SHJ with 6% (w/w) MF had the lowest cost of production. These results suggested that, a cost effective jerky with better sensory and keeping qualities can be produced using spent hen meat with 6% (w/w) MF.

Keywords: Semi-dried, Keeping qualities, Sensory, TBARS