

Effect of Marination Technique and Holding Time on Physicochemical and Sensory Attributes of Marinated Pork Chops

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This study was conducted to evaluate the effect of holding time on physicochemical and sensory attributes of marinated pork chops. The experimental design was 3 x 3 factorial arrangement of treatments evaluating three marination techniques (unmarinated control, injection and immersion) and three holding times (4, 8 and 12-h). A total of 63 pork chop samples (40 ± 5 g) obtained from a female fattener pig (12-months old; live weight, 88 kg) were marinated and allocated randomly into treatment combinations. Uncooked and cooked pork chops were analysed for physicochemical and sensory attributes, respectively. An interaction between ($P < 0.05$) the marination technique and the holding time was observed only for pH, cooking yield, marinade loss, hardness, redness and yellowness. Injection marination improved ($P < 0.05$) the marinade uptake than immersion. Holding 8-h after injection marination improved pH of meat ($P < 0.05$). Cooking loss was affected ($P < 0.01$) by the technique of marination. Holding pork chops for 8-h after injection and immersion marination ($P > 0.05$) resulted the highest cooking yield. Meat held for 12-h after immersion marination (4.64%) and unmarinated control (4.45%) held for 12-h resulted the highest ($P < 0.05$) marinade loss. Treatments when held at 8-h reported the highest tenderness. Meat subjected to immersion and injection marination and held for 4 and 8-h increased ($P < 0.05$) the redness (a^*). Unmarinated control poorly developed the yellowness ($P > 0.05$) over three holding times. Injection marination resulted the highest scores for flavour, marinade penetration and overall acceptability when held for 8-h. Holding pork chops for 8-h after injection marination maximized cooking yield, tenderness, redness, yellowness while minimizing marinade loss. The panelists preferred mostly the meat marinated using injection method held for 8-h. Direct application of marinade into meat during injection process have resulted meat quality to improve. In conclusion, the injection method with 8-h holding time best contributes to the development of physicochemical and sensory attributes of pork chops.

Keywords: Holding time, Immersion, Injection, Marination, Pork chops