Warm Shortening in Broiler Chicken

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A study was conducted to elucidate the effects of different storage conditions [room (30±5°C) and chiller (5±2°C)] on tenderness of broiler chickens. The effect were assessed by subjective method (taste panel study by 9 point score card) and objective method (Wanner-Bratzler Shear Force Value). The study revealed that there was a significant (P<0.01) decrease in Shear Force Value (WBSFV) and increase in taste panel scores for tenderness upto 2 h postmortem after which the WBSFV increased and taste panel scores for tenderness decreased up to 6 h postmortem in chicken stored at room temperature. At chiller temperature, the WBSFV decreased and taste panel scores for tenderness increased significantly (P<0.01) up to 6.0 h of storage. The results of the study revealed that the rigor onset was within 0.5 to 1 h postmortem and the resolution of rigor was completed within 2 to 4 h at both room and chiller stored broiler chicken. Although there was resolution of rigor within 2 to 4 h in chicken stored at room temperature, the meat was tough due to “warm shortening” of the myofibrils. It can be concluded that broiler chicken should be stored in chiller temperature after slaughter and can be consumed after 2-4 h chiller storage.