Physicochemical characteristics of ostrich meat (struthio camelus) as influenced by its muscle type

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Objective: This study was conducted to evaluate the muscle type of 12 ostrich birds (12 months old, 100-110 kg weight) that were slaughtered to obtain the meat samples from a commercial slaughterhouse.

Materials and methods: Meat quality parameters like pH, color, Warner Bratzler shear force (WBSF) value, fatty acid, and sensory analysis were conducted on 2 muscles (M.iliofibularis, M.gastrocnemius).Shortening was prevented by controlling muscles pH reaching time for M. Gastrocnemius(3 hours 57 minutes) and M. Iliofibularis (34 Minutes). The pH and color of the samples were measured at 1, 4, and 6 h of slaughtering. WBSF values taken after 24 h post-slaughter. For fatty acid analysis, the extracted fat was methylated as FAME to be analyzed by Gas chromatography (GS). Sensory analysis was conducted by cooking the samples and serving them to the expert panelists.

Results:

pH

There was a significant ($p<.05$) difference between the 2 muscles.

Color

There were significant ($p<0.05$) differences at 1 and 4 hours.

WBSF

WBSF values for the M.iliofibulariswere significantly ($p<0.05$) less than M.gastrocnemius.

Fatty acids

The fatty acid profiling on both muscles has shown a significant ($p<.05$) difference. M.iliofibularisshowed higher Crude fat, SFA, MUFA, and N-3 (ALA) contents than M.gastrocnemius. M.gastrocnemiusshows higher PUFA, EPA, DPA, DHA, and N-6 (LA) contents than M.iliofibularis.

Sensory

The statistically no significant ($p>0.05$) differences were found in most of the sensory attributes except swallowingand overall acceptability.

Conclusion: Both muscles have unique characteristics to each other. Ostrich meat contains healthy fats and could be considered an alternative source of healthy red meat, as it contains lesser contents of SFA (Saturated fatty acids) and higher protein contents than turkey and bovine.Gastrocnemius contains higher amounts of PUFA, EPA, DPA, DHA, and N-6 (LA) and all of these are healthy unsaturated fatty acids that are heart-friendly. EPA, DPA, DHA are omega 3 fatty acids that play important role in the human body regarding heart health, reduces obesity, reduces inflammation, and reduces bad cholesterol in the body.

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