

# The impact of heat treatment methods on the physical properties and cooking yield of selected muscles from Limousine breed cattle

Jarosław Wyrwisz 1 \*\*, Andrzej Pótorak 1 , Ewa Poławska 2 , Mariusz Pierzchała 2 , Artur Jóźwik 2 , Magdalena Zalewska 1 , Robert Zaremba 1 , Agnieszka Wierzbicka

Faculty of Human Nutrition and Consumer Sciences, Warsaw University of Life Sciences - SGGW, Department of Functional Food and Commodities, Chair of Engineering in Nutrition, Nowoursynowska 159c, Warsaw 02-776, Poland

### Abstract :

The aim of this study was to analyse the impact of heat treatment methods (frying – FR, grilling – GR, roasting – RO 180°C, roasting – RO ?T) on certain physical properties and the cooking yield of selected muscles of cattle. Used were samples of five muscles from 40 beef carcasses:

m. longissimus

lumborum

(LL),

m. semimembranosus

(SEM),

m. semitendinosus

(SET),

m. psoas major

(PSM) and

m. triceps brachii

(TRI). Instrumental texture parameter measurements were performed using

universal testing machine (Instron 5965) equipped with Warner-Bratzler attachment. Instrumental

measurement of colour components was performed using Minolta CR-400 chromameter in the

L\*a\*b\* system. Cooking yield of the applied thermal processes was determined by weighting

method and by thermal shrinkage measurement using computer image analysis.

The greatest tenderness characterized the GR samples, especially of PSM, LL, and TRI muscle.

Products roasted with the use of ?T program occurred significantly ( $P < 0.001$ ) darker and less red,

### Key Word :

beef / colour / cooking yield / shrinkage / texture

