

HISTOLOGICAL ANALYSIS FOR QUALITY EVALUATION OF CURED MEAT SAUSAGES

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Abstract. The aim of this study was to evaluate the quality of cured meat sausages of two Lithuanian producers.

Histological analysis of meat products enables assessment of animal tissue content and can give information on the quality of the used raw material and the quality of the processing steps. The cured meat sausage samples were collected at retail within a one month period. These sausages consisted of extra and first category quality sausages. Sections of these sausages were stained with Calleja methods and examined histologically for the presence of various animal tissue types. To quantify the amount of individual tissues, an image analysis software was used.

The histological evaluation of the cured meat sausage samples demonstrated presence of skeletal muscles, adipose tissue, connective tissues, and blood vessels. Glandular and nerve tissues were found only in 3 and 2 samples, respectively. No cartilage and bone tissues were found in any of the examined samples. The amount of skeletal muscles, adipose and connective tissues differed between the sausage samples of the two producers. The much higher amount of skeletal muscles ($P < 0.05$) was found in sausages of extra quality in comparison to the first category sausages of producer. However the amount of adipose tissues was higher ($P < 0.05$) in the first category sausages, respectively. For collagen tissues, these differences were significant between first quality category sausage samples of two producers ($P < 0.05$).

In conclusion, automated image analysis is able to quantitatively evaluate tissue contents of meat products, however it is recommended to verify such results by an alternative methods.

Keywords: Cured Meat Sausages, Quality, Animal Tissues, Histology