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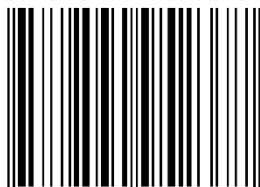
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Discrimination between Mangalica pigs and commercial hybrids through bulk and compound specific isotopic analysis

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Mangalica pigs are a Hungarian curly-haired swine breed characterized by a fatty meat and a relatively low reproductive performance. Due to this factor and to the request for higher meat/fat ratio products Mangalica pigs almost disappeared in the nineteen seventies [1]. This swine breed escaped from extinction thanks to their new economic exploitation and to the growing interest to breed endangered animals. Nowadays, features such as adaptivity to extensive housing conditions, stress and disease resistance, motherliness and high-quality meat are requested. Even if fatty, Mangalica pigs' meat meet all these requirements [1].

Based on the growing interest in this breed of pigs, the aim of this study was to provide a tool for the discrimination between Mangalica pork and other types of meat. A set of 37 pigs has been considered: 13 Mangalica pigs (M), 12 commercial hybrids bred outdoors (CA), and 12 commercial hybrids raised indoors (CC). For the first time, carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) isotopic ratios have been analysed in the defatted meat ($\delta^{13}\text{C}_{\text{PROT}}$, $\delta^{15}\text{N}_{\text{PROT}}$) and in the bulk fat ($\delta^{13}\text{C}_{\text{FAT}}$) of Mangalica pigs. Furthermore, a compound specific isotopic analysis of six fatty acids (including C14:0, C16:0, C16:1, C18:0, C18:1 and C18:2) in the *longissimus lumborum* fat was carried out.

The results show that $\delta^{13}\text{C}_{\text{PROT}}$, $\delta^{13}\text{C}_{\text{FAT}}$ and $\delta^{15}\text{N}_{\text{PROT}}$ are discriminating parameters, while the $\delta^{13}\text{C}$ values of the single fatty acids do not give additional supportive information.

References

[1] I. Egerszegi, J. Rátky, L. Solti, K-P. Brüssow, *Archives Animal Breeding*, **2003**, 46, 245.