

# **Influence of the Kind Frying Oil on the Odour of Fried Potato Snacks during Storage**

Ewa Górnicka<sup>1</sup>, Marek Szoltyś<sup>2</sup>, Agnieszka Kita<sup>1</sup>

Wrocław University of Environmental and Life Sciences,

<sup>1</sup> Department of Food Storage and Technology, <sup>2</sup> Department of Animal Products Technology and Quality Management, Wrocław, Poland

The aim of this work was to determine influence different kinds of frying oil on the content of volatile compounds and odour of fried potato snacks in the course of their storage.

The material under study was potato snacks fried in rapeseed oil (RO), in rapeseed oil with 400 ppm addition of polyphenol extract (RO+400), in high-oleic rapeseed oil (HORO), in high-oleic rapeseed oil with 400 ppm addition of polyphenol extract (HORO+400), as well as in high-oleic sunflower oil (HOSO). Ready snacks packed in aluminium foil were storage for five months under standard conditions. In fresh and after fifth month of storage, the samples were analyzed for content of volatile compounds by the solid-phase microextraction technique connected with gas chromatography coupled to mass spectrometry (SPME/GC/MS), as well as for organoleptic properties (odour).

It has been stated that kind of frying oil influenced properties of fried snacks during storage. Volatile compounds as though hydrocarbons, ketones, aldehydes and alcohols were observed in the all analysed snacks. The lowest portion of hydrocarbons was exhibited in fresh snacks fried in RO. The biggest content of aldehydes and ketones was observed in fresh snacks fried in HOSO. Between aldehydes and ketones in all fresh samples dominated 2,4-heptadienal and 2-nonanon. The content of hydrocarbons decreased and the level of aldehydes and ketones increased during storage for five months. Storage deteriorated the organoleptic properties of all snacks; only snacks fried in HOSO exhibited good quality at the end of the process.