

# **Volatile Aroma Compounds as Markers for the Sensorial Quality of Virgin Rapeseed Oil**

Ludger Brühl, Anja Bonte, Bertrand Matthäus, Max Rubner-Institute  
Detmold, Germany

One of the most important parameters for the quality of virgin rapeseed oil is the pleasant characteristic aroma, which could be described as seed-like with a nutty after taste. Negative sensory attributes like rancid, fusty or musty should not be perceivable. For producers it is a demanding task to carefully select the seed batches for the production of virgin rapeseed oil, as only the best seed qualities are suitable for this purpose. Bad harvest and storage conditions immediately lead to degradation of the sensory properties of the oil. Only a panel group consisting of at least 3 to 5 trained panelists gives reliable and objective results for the selection of proper raw materials. Therefor sensory evaluation is a crucial step, but very costly and time-consuming and the search for alternative analytical methods for the assessment of the sensorial quality of virgin rapeseed oil is an important goal.

The presentation shows some examples how the measurement of the volatile aroma compounds can be used to assess the quality of virgin rapeseed oil giving some valuable information about the production chain or the history of the oil. Purge and trap concentration of the volatile compounds with coupled gas chromatographic determination by different detection (FID, MS and olfactometry) enables the identification of relevant marker substances for the selection of good seed qualities. A profiling of a representative set of samples was carried out and the data obtained were further evaluated by statistical means like PCA. First results of this classification system are shown in order to present the ability and limits to differentiate the samples according to their sensory evaluation.