

AUTHENTICATION OF SPICES AND HERBS

Carsten Fauhl-Hassek^{1*}, Janet Riedl², Bettina Horn³, Susanne Esslinger⁴

^{1, 2, 3, 4} Federal Institute for Risk Assessment, Berlin, Germany

* Corresponding author - E-mail: carsten.fauhl-hassek@bfr.bund.de, Phone: +49 30 18412 3393

Spices and herbs are on the first places in current attempts assessing the extent of food fraud for different matrices. As spices and herbs are typically expensive commodities, fraudulent practices promise high economic profit. An increasing consumption in production areas such as Asia contributes to the vulnerability of this commodity against fraud. Research on the supply chain of spices and herbs is conducted for example in the EU project SPICED - Securing the spices and herbs commodity chains (FP 7-Project, grant agreement no. 312631), that will be finished in 2016. The basic ideas and results of this research project will be presented. One major aim was the development of new analytical approaches for authentication of condiments particularly in view of the detection of exogenous materials. The classical analytical method for the identification of adulterants - microscopy - is very powerful but requires a tremendous training and continuous practices including the detection and learning of new adulterants. Probably due to the required high level of specialization microscopic practice appears to be less common in industry and also food surveillance. Therefore, new techniques such as non-targeted analysis (food fingerprinting) are under development and are up-coming in future. Some results on paprika authentication using Fourier transform infrared (FTIR) and Nuclear magnetic resonance spectroscopy (NMR) and further general challenges of non-targeted chemical analysis will be discussed and presented.

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