

FOOD AUTHENTICATION: CHALLENGES IN OFFICIAL CONTROL

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Modern analytical methods for verifying the authenticity as an integral component of food safety - Examples and developments from the proof of authenticity within food control.

Due to precautionary aspects in consumer protection, methods are required in food and feed control which enable the verification of their declarations and specifications, i.e., a proof of authenticity, based on a chemical/physical analyses of the respective item. In particular the increasing globalization of the food and also feed market requires reliable strategies to investigate the identity of goods with the aim of uncovering adulterated products, which repeatedly cause health risks to the consumer (e.g., the addition of melamine to milk products and feed materials). On the one hand changes/manipulations in relation to the authenticity of a food item (type, origin, production etc.), and on the other hand the identification of modifications which are critical for consumers' health (e.g., mixtures, additives), are of interest. Besides the classical analytical methods, measurements of stable isotopes but also the so-called profiling and fingerprinting -techniques have important roles. The adaptation from research into routine applications takes actually place in some instances for the later techniques (e.g. NMR). Fingerprinting approaches offer enormous potential also in official control due to their typical abilities as high-through put and screening technique. Some examples will be presented and their possibilities and limits discussed. Particular emphasis will be put on open questions in view of the court-proof application such as exchangeability of data, validation and standardisation options.

Keywords: *food authenticity, profiling and fingerprinting techniques, exchangeability of data, validation and standardisation options*