

OUT WITH THE OLD, IN WITH THE NEW: NOVEL APPROACHES IN ALLERGEN DETECTION USING MALDI-TOF-TOF AND MASS SPECTROMETRY

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Allergens have been on the menu of regulators and consumer groups for several years now. While the jurisdictions differ in some of the regulated allergens, most have the 8 major allergens referred to in Codex Alimentarius (General Standard for the labelling of pre-packaged foods (Codex STAN 1-1985, section 4.2.1.4).

Ensuring the correct labelling of food products containing food allergens is essential for those affected by food allergies.

And while this mainly documentation based, the ultimate proof of absence of allergens is done by analysis.

Here, conventional technologies like ELISA and PCR have shown to be applicable for a number of matrices. Work by numerous experts in the field however has shown that these technologies are not infallible. This is especially evident when it comes to processed matrices containing egg and milk.

Most recently, the adulteration of ground cumin with peanut has shocked the food industry as well as regulators. Consequently, spices have come under close scrutiny. Regulators in North America and Europe took a closer look and found a number of incidences where paprika and spice mixes were allegedly contaminated or adulterated with almond.

While the economic benefit of such adulteration is questionable, it was discovered that the suspected almond was actually an Indian cherry (*Prunus mahaleb*). Interestingly, like the discovery that egg and milk often go undetected by ELISA and PCR in processed products, this discovery was made using mass spectrometry. In a recent statement by ANSSA, the French Food Safety authority, mass spectrometry was identified as reference method for allergen analysis.

And yet, there has not been any collaborative trial of MS methods, and the subgroup of the European standardisation Committee (CEN) working group dealing with MS for food allergens is dormant.

In the light of previous and recent finding on the fallibility of conventional tests for allergens, would it be prudent to review all existing conventional methods and establish reference standards for allergens using MS methods, following the scheme: out with the old – in with the new?

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