

Multivariate Authentication of Infant Formulae by their Fat Composition

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This poster deals with the investigation whether the composition of the fat fraction of different infant formulas gives information on the identity of the product as a whole. It is studied whether the formulas for different age groups differ from each other, and if compositions targeted for allergic groups do get the same nutritional value as the regular group. Therefore, the composition of the fatty fraction of 40 different infant formulas was analyzed, as the fatty fraction is the major nutritional component of infant formulae. Both triglyceride composition and fatty acid (as FAME) composition were determined by a robust GC/FID analytical method. The occurrence of classes within the group of 40 infant formulae was determined by multivariate statistical methods (SIMCA and PLS-DA). The results showed that the composition of the fatty fraction was not tailored towards any of the target groups (age, allergy groups), but was clearly dependent on the producer. It implies that different producers have their own fat-base for their formulas, which they apply generally to their formulas. Nutritional differences, based on the fat fraction, are therefore more readily found between producers (brand) than between types of formula of the same brand. Consequently, these differences allow successful authentication of formula brands by their fat composition.