



# Standardisation of non-targeted methods - new initiatives of the official authorities in Germany

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## Introduction

As coordination office for § 64 LFGB (German Food and Feed Act), the unit "General affairs and method standardisation" at the Federal Office of Consumer Protection and Food Safety (BVL) has among other things the statutory obligation to keep up-to-date the Official Collection of Methods of Sampling and Analysis (ASU) in Germany. In this context, the potential of modern non-targeted methods is being considered, e.g. for species identification and for checks on the geographic origin or method of production.

In order to meet the requirements of the official authorities responsible for food surveillance in Germany and Europe, these methods must be validated and standardised. Furthermore, they must be conveyed to the Comité Européen de Normalisation (CEN). Therefore, the BVL is constituting new working groups consisting of experts from the field of non-targeted methods<sup>1, 2, 3</sup>.

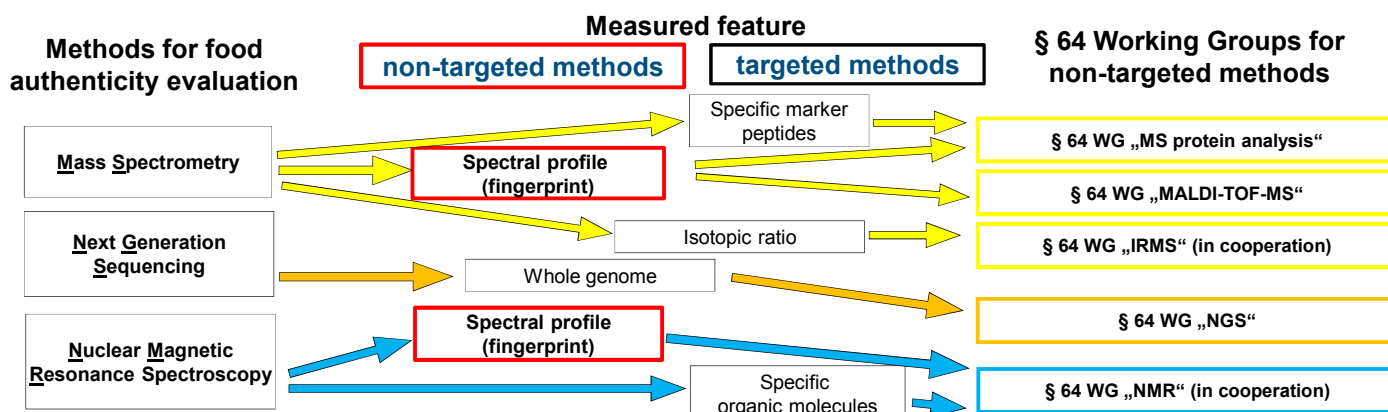
## Cooperation with CEN

CEN decided (**BT N 11281: 2018-12-05**) to create a new CEN/TC 460 with the following preliminary title: CEN/TC 460 "Food Authenticity". The first meeting of the DIN working group NA 057-08-02 AA "Food authenticity" was **2019-02-28** and the first meeting of the CEN/TC 460 will be **2019-06-14** in Berlin.

The methods standardised and validated in the § 64 working groups will then be introduced into this TC.

## § 64 WGs for method validation and standardisation

For several years, food authenticity has already been a subject in § 64 WGs „Species differentiation“ (03/1997), „Food allergens“ (04/1999) and „GMO detection“ (1997). In 2018 and 2019, the WGs „MS protein analysis“, „MALDI-TOF-MS“ and „NGS“ were founded that will also address this topic. Additionally, the coordination office at BVL will cooperate with two existing German stakeholder panels ("IRMS" and "NMR") for interlaboratory method validation.

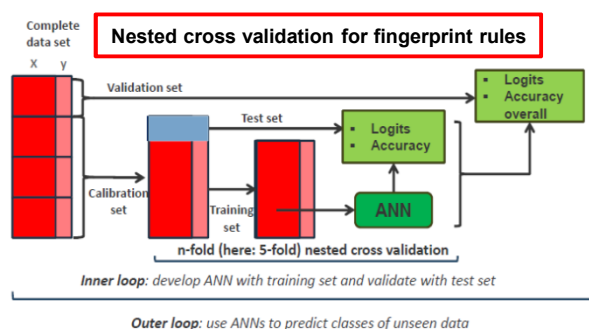


## Data analysis for non-targeted methods

For assessing the validity of non-targeted methods, the following aspects must be addressed:

- (1) whether the decision rule displays the same discriminatory power when applied to other data (than that used to establish it);
- (2) whether the decision rule is reliable for the entire population falling under the classification method's scope;
- (3) whether the decision rule's discriminatory power remains unchanged under different testing conditions.

In relation to the first aspect, the nested cross validation procedure allows a very efficient use of the data particularly in the case that data are available for only a low number of samples<sup>4</sup>.



## Acknowledgements

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## References

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- [2] Becker *et al.* (2018) Erstes Treffen der § 64 LFGB Arbeitsgruppe „Massenspektrometrische Proteinanalytik“, J Consum Prot Food Saf; DOI 10.1007/s00003-018-1170-0
- [3] Stoyke *et al.* (2019) German government official methods board points the way forward: Launch of a new working group for mass spectrometry for protein analysis to detect food fraud and food allergens, J AOAC Int; DOI 10.5740/jaoacint.19-0056
- [4] Uhlig *et al.* (2019) Valid machine learning algorithms for multiparameter methods, Accreditation and Quality Assurance, DOI 10.1007/s00769-019-01384-w