

HONIG VERBAND

Factsheet

DNA ANALYSIS OF HONEY



1 Honey is a **NATURAL PRODUCT** whose composition is influenced by numerous factors (region, season, weather, plant diversity, harvest time, processing). Blends of honey from different sources can also result in complex profiles. For authenticity testing, this means that reference databases must be as representative as possible and that methods must be carefully scientifically tested.

2 Information on the geographic **ORIGIN** of honey promotes transparency and traceability, but does not replace analytical authenticity testing. Various established and validated testing methods are available for this purpose, which are used individually or in combination depending on the specific issue at hand.



3 Possible **FORMS OF FALSIFICATION** include the unauthorized addition of foreign sugars (syrups made from sugar cane, sugar beets, corn, or rice), false claims regarding geographic or botanical origin, as well as misrepresentation of organic labeling.

4 Because falsification can take many different forms, there is no single method that can detect every conceivable form of adulteration on its own and conclusively. In practice, these **METHODS** are often combined to arrive at a reliable overall result.

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5 DNA-based analytical methods can effectively complement **AUTHENTICITY TESTING** of honey. However, to arrive at reliable conclusions, it is essential to determine whether a method has been sufficiently tested for its intended purpose and whether it provides reliable results.

6 **NEXT GENERATION SEQUENCING (NGS)**, a DNA-based method, can provide information about plant-derived and other biological components in a honey sample. Scientists at the European Commission's Joint Research Centre have classified NGS-based methods in 2026 as promising for honey authenticity testing, but they explain that further independent testing and interlaboratory comparisons are necessary (see published assessment). For widespread application in honey authentication, the scientists also see a need for further validation, method comparisons, and suitable reference databases.

7 **ACCREDITATION** according to ISO/IEC 17025 confirms the competence and impartiality of a laboratory for the methods listed within its scope of accreditation. However, it does not constitute a validation of the method itself, but rather assesses whether the laboratory can apply the respective method properly. Accreditation does not automatically mean that every method used is harmonized across laboratories, internationally standardized, or recognized for a specific official control purpose.

8 What matters is whether a method has been scientifically and sufficiently tested - independently, across laboratories, and for all intended applications. **METHOD VALIDATION** means verifying whether an analytical procedure is reliably suitable for a specific research question. A method is considered validated if it delivers accurate, repeatable, traceable, and robust results.

! Honey authentication requires scientifically validated and standardized methods. DNA-based methods can complement current honey authentication procedures. However, for reliable application, further research, validation, and standardization are required.



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