

JG/ZK

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F.E.E.D.M. – Honey Metagenomic DNA Analysis (MDA) fact-check

Background:

Since end of September 2024, the EPBA (European Professional Beekeeping Association) has publicly stated that 80% of honey on the German, 62.5 % of the Finnish, 96 % of the UK and 100 % of the Austrian honey market is adulterated (fake). These statements are substantiated by the so-called Honey Metagenomic DNA Analysis (MDA) of the CELVIA CC AS laboratory in Estonia.

✘ The analytical method using MDA is not accredited (ISO 17025) - in contrast to the authenticity analyses usually used for honey.

✘ The CELVIA CC AS medical laboratory is not accredited for honey analysis (ISO 17025) - unlike the established industry laboratories.

✘ The MDA method has not been officially validated regarding the reliability of the results and has not yet been independently tested for its robustness and accuracy. The results and in particular the suitability of MDA for proving the authenticity of honey have not been compared with other laboratories in comparative analyses. Both are mandatory requirements for accreditation.

✘ The database and the interpretation of the results of the method using MDA are also not known, thus being not accredited and validated. Why have various technical questions from renowned institutions (for example the Bee Institute in Celle, the University of Hohenheim, the State Institute of Apiculture or the German consumer organisation Stiftung Warentest) still not been answered by the CELVIA CC laboratory?

✘ The results are interpreted using an AI-based comparison with the database with the disclaimer that the “non-authentic” result is only compared with the CELVIA CC laboratory database. The legal validity of the resulting interpretation “non-authentic” must be critically questioned.

✘ There is a lack of detailed information on which data sets were used to compare the DNA profiles of the honeys on the German market for authenticity. Apparently, according to the scientific publication on which the comparison is based, only a total of 266 Estonian honeys are available in the CELVIA CC laboratory database. The main supplier countries for honey on the European market are Ukraine, China, Argentina and Mexico.

✘ During a technical presentation by the CELVIA CC laboratory in November 2024, it became clear that the MDA already reaches its limits with honeys that deviate from Estonian botany (acacia honey) or regionally deviating areas (“Estonian island”). It was noted that these deviated from the data in the CELVIA CC database and were therefore interpreted as “non-authentic” and “borderline case”. However, it could not be proven that the honeys in question were indeed adulterated.

✘ According to the CELVIA CC laboratory, a mandatory method control by so-called spiking experiments – i.e. deliberately mixing authentic honeys with syrup for analytical testing – did not take place.

✘ A microscopic pollen analysis commonly used for example in Germany was not carried out. The pollen in honey contains the largest proportion of DNA. Pollen analysis is usually used as an important reference tool in the identification of the botanical and geographical origins of honey.

✘ The MDA method is not known to the European Joint Research Center (JRC), which has already started a project – commissioned by the European Commission – for the harmonisation of authenticity analyses for honey, and MDA is not used.

✘ The European Commission's last honey action "From the Hives" from 2023 found 46% of all samples to be suspicious of being adulterated using standard market analysis methods (methods used by JRC: LC-IRMS, NMR, HRMS, HPAEC-PAD). The EPBA used the same methods in its analysis of 30 honeys from the German market.¹ According to the EPBA, the results were consistently unremarkable. Based on this fact, the completely contradictory results of the MDA method can be questioned.

✘ In its statement, the renowned German Beekeepers' Association (DIB) points out the lack of information on the procedure and validation of the MDA. It also disputes the EPBA's statement that the MDA is already being used in New Zealand.

✘ Consumers must not be misled. Public statements based on the results of a non-accredited, non-validated and non-industry-standard analysis method must be avoided in order to protect consumers.

✔ In cooperation with recognised German and European industry laboratories, F.E.E.D.M. has been working for years on optimising all standard analytical methods for honey authenticity in order to achieve almost 100% security against adulteration.

✔ Thanks to the companies' continuous analyses at all stages of the supply chain, only comprehensively tested honeys reach European supermarket shelves.

✔ F.E.E.D.M. does not rule out new analytical approaches based on DNA analysis in the future. On the contrary, all renowned industry laboratories are already working on DNA analysis in the honey sector, which in the opinion of the industry laboratories is not yet at the practical stage. There is already a consensus that DNA analysis of honey such as MDA alone is not sufficient to confirm honey authenticity.

✔ The members of F.E.E.D.M., as customers of European and international beekeepers, ensure through their work and commitment that the European honey requirements will continue to be secured in the future through honey varieties from beekeepers all over the world and that consumers receive high-quality and genuine honey.

¹ <https://cleanupthehoneymarket.com/>

EUROPEAN
FEDERATION
OF HONEY
PACKERS AND
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FÉDÉRATION
EUROPÉENNE DES
EMBALLEURS ET
DISTRIBUTEURS DE
MIEL

F.E.E.D.M.

Jeanette Gonnermann
General Secretary

About F.E.E.D.M.

F.E.E.D.M. represents the interests of the European honey packers and distributors. Honey is a very valuable natural product and is one of the most traditional foods in our nutrition. Beekeeping has become an important and emotional part of society in various countries. This craft contributes to the preservation of biodiversity and improves yields in fruit and vegetable cultivation. Accordingly, the services provided by beekeepers go beyond the production of honey and thus represent an integral part of environmental conservation and an important step towards achieving global sustainability goals. Furthermore, the import of honey contributes to securing the income of small and large beekeeping enterprises in the exporting countries. However, the priority of F.E.E.D.M. is to defend and promote honey as a pure and natural product, to support good apiculture practices and to aiming at improving the quality standards of the product.

The members of F.E.E.D.M., being from 21 countries, commit themselves to the integrity and quality of the products, which are subject to their business. We represent about 80 % of the entire European honey import market. F.E.E.D.M. has been campaigning for harmonised requirements and workable solutions for many years.