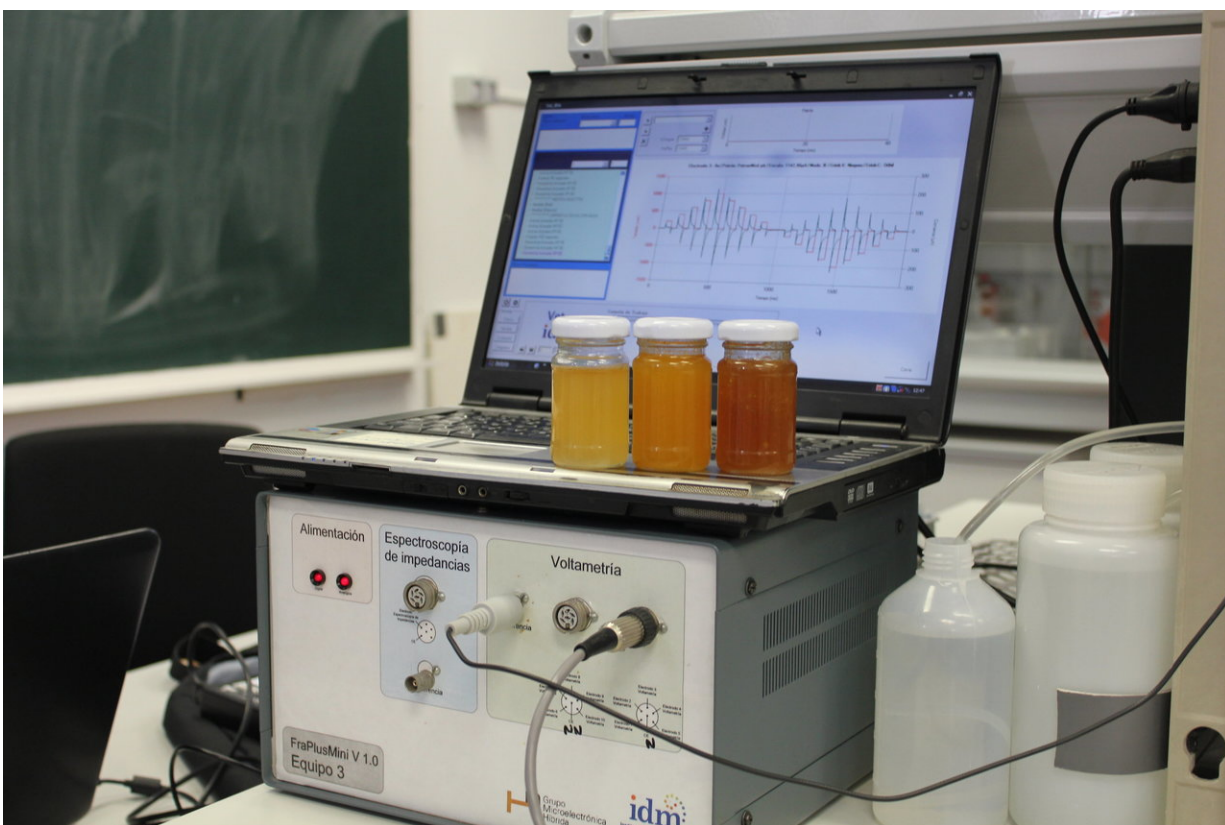


Electronic tongue allows for the fast, cheap detection of adulterated honey

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Honey samples. Credit: Asociación RUVID

Researchers of Valencia's Polytechnic University (UPV) have developed an electronic "tongue" able to distinguish adulterated honeys in an easy, fast and cheap way.

According to the researchers, in under an hour, the device can determine whether a sample has been adulterated; standard analysis methods can go on for several days.

As the UPV researchers explain, the honey is typically adulterated with syrups or sugar molasses. "This leads to noticeable losses for the honeybee sector. Moreover, this [scam](#) breaches Union legislation and leads to a significant loss of confidence by the consumer," adds Lara Sobrino, researcher at the Developmental Food Engineering Institute of the UPV.

Therefore, the electronic voltammetric [tongue](#) is a quick, easy and affordable solution compared to devices used currently to detect scams. Thanks to the combination of the technique and statistical analysis of the data, the [electronic tongue](#) is able to detect fraudulent markers differentiating pure honey from honey adulterated with dietary syrups, as well as approximately establishing the level of adulteration.

"Our work offers a pioneering analytical [technique](#) to find out quickly and reliably the honey's authenticity. This will make it possible to fight against unfair competition and guarantee the quality of the honey for the consumer," says Juan Soto, researcher at the Molecular Recognition and Technological Development Institute of the UPV.

The [device](#) developed by UPV researchers therefore makes it possible to discover possible scams in honeys that are sold on the market. "If there is the suspicion that a [honey](#) could be adulterated, our system detects the symptoms reliably. The final step consists of carrying out a more precise analysis by way of magnetic resonance techniques, as well as others. The tongue screens the samples; those where fraudulent symptoms are detected should then be confirmed with other identification techniques," adds Juan Soto.

More information: Lara Sobrino-Gregorio et al. Monitoring honey adulteration with sugar syrups using an automatic pulse voltammetric electronic tongue, *Food Control* (2018). DOI: 10.1016/j.foodcont.2018.04.003

Provided by Asociacion RUVID

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