Analysis of lard's aroma by an electronic nose for rapid Halal authentication.

ABSTRACT

An electronic nose was successfully used to detect and discriminate lard from other types of animal body fats and samples containing lard. The results are presented in the form of VaporPrint™, the image of the polar plot of the odor amplitudes from the surface acoustic wave (SAW) detector frequency. In the VaporPrint™, the radial angles representing the sensor provides individual fingerprints of the aroma of different animal body fats. Principal component analysis (PCA) was used to interpret the data and it provided a good grouping of samples, with 61% of the variation accounted for by PC 1 and 29% accounted for by PC 2. All of the lard-containing samples formed a separate group from the samples that were free from lard. This method can be developed into a rapid method for detecting the presence of lard in food samples for Halal authentication.

Keyword: Adulteration; Electronic nose; Halal authentication; Lard; Principal component analysis (PCA).