Authentication of Organic Meat by Lipid Profiling

Rita Boerrigter-Eenling and Martin Alewijn, Rikilt Institute of Food Safety, part of Wageningen University, department Authenticity and Nutrients
Wageningen, the Netherlands

Food authentication has been become more important over the years, and is a valuable tool to protect more exclusive and more expensive foods from ist conventional an cheaper counterparts. One issue, for example, is the question if we, can objectively distinguish between conventional and organic food. Currently, this is almost exclusively confirmed with paper trailing and administrative verification assessments, but additional tot hat, an objective (product-based) method would be preferred.

Traditional analytical strategies for guaranteeing quality and uncovering adulteration have relied on quantitative determination of a marker compounds. Since it is unlikely to find a unique marker that allows discrimination between organic and conventional produced foods, selective fingerprinting (profiling) combined with chemometrics is a more promising approach. In this study, we describe a method aimed at objectively discriminating organically and conventionally produced meats. We collected authentic samples at individual farms over the Netherlands, and subjected the meat samples to lipid profiling techniques. The lipid profiles were combined with chemometrics and this was used to distinguish between organically and conventionally produced meat.