

Preliminary studies of geochemical tools to traceability of Sicilian honey

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Today is increasing the attention of consumers for the origin of food and high reputation of products with a distinct geographical identity. Food traceability is an important issue in food safety and quality control, with impacts on food security, its quantity and overall availability.

Furthermore, the possibility of tracing the origin of foodstuff is assuming an increasingly important role at the legislative level, as a tool that may allow to prove on product authenticity and to control adulteration

So, establish systems to trace food or feed products through specified stages of production, processing and distribution play a key role also to ensure food safety.

For these reason, in the last years, a various of analytical techniques have been tested to found ways to establish the geographical origin of different kinds of food and many works reported that the combination of different analytical methods associated a multifactorial analysis of the data seems to be the most promising system to establish univocal traceability systems.

Despite, the honey is a well appreciated natural product in the world and the detection of potential fraud could be favored through tools linking the chemistry composition of this production to producing area. A relatively small number of investigations regarding traceability of honey can be found in the scientific literature.

Therefore, in these contest the development of fingerprinting techniques based on the determination of the specific markers of provenance analyzed whit chemometric approach represents an interesting area of research.

Recent works have been demonstrated the potentiality of the study of the distribution patterns of rare earth as a promising analytical method for traceability of food products due coherent and predictable chemical behaviour of these compounds.

Also, have been demonstrated that their distribution in soil keeps unaltered in plants growing on that soil and eventually in agricultural products obtained from those plants and through the normalization of the REEs distribution, it is possible to appreciate their relative enrichments in soil-plant- agro food products

The aim of the research is to observe if the REEs normalized pattern of honey is kept unaltered respect the soils of production to establish a correlation between geographic area and honey product.

In this first study the REE approach, give very intriguing results in the geographical traceability of honey samples. The results have been supported by statistical treatment. A larger study is in progress to optimize the analytical methodology and to extend the research to a major number of sample for a better geographical characterization.