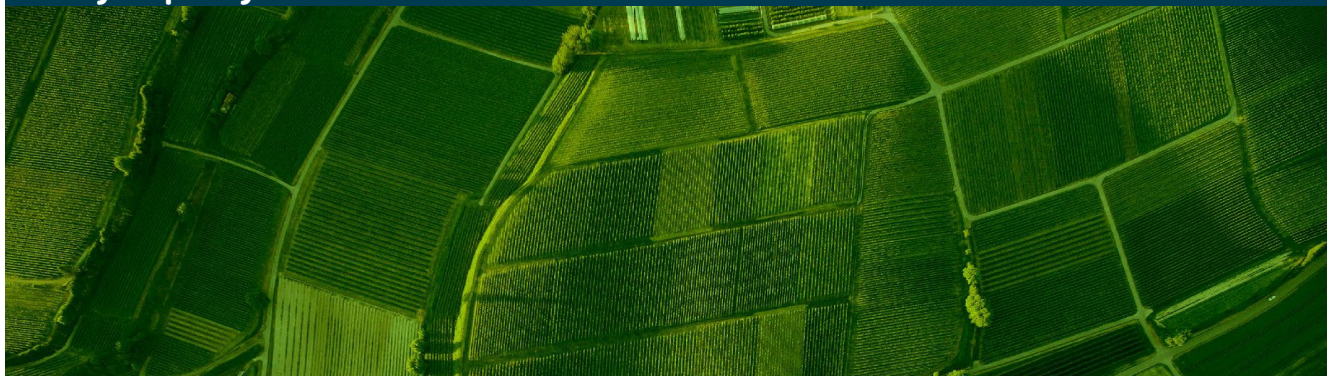


## Practice Abstract No 7

### Untargeted methods to combat food frauds: Coop Italy's laboratory to guarantee food safety & quality to consumers



#### Description

For the last 40 years, Coop Italia has had an internal food analysis laboratory whose main interests, especially in recent years, have been food authenticity and fraud prevention of Coop products. The laboratory's activity is divided into routine analysis and new food analysis development. Laboratory includes three areas: biology, chemistry and sensory; the latter is a useful tool for assessing perceived quality of Coop products. In the last years, the molecular biology area has acquired two new instruments: a Digital PCR and a Next Gen Sequencer to improve and optimize DNA analysis, for example the application of the DNA barcoding technique, which can identify animal and plant species, in complex food products. Furthermore, the chemistry area has been equipped with Heracles II, a dual-column FAST gas chromatograph and FlavourSpec, an Ion Mobility Spectrometer (IMS) Gas Chromatograph. Both instruments are able to trace the global profile of volatile organic compounds in products. This analytical approach surpasses the limitations of 'target analyses'. An 'untargeted analysis' is able to profile a food as a whole (i.e. 'fingerprinting') by visualizing more than one family of molecules at the same time. The result can be compared to a product identification barcode. Any 'alteration' of the code indicates an anomaly in the product to be further investigated. These technologies could be applied in several food matrices like honey, coffee, wine, pet food, cheese, spices and extra virgin olive oil. In this latter matrix these untargeted analyses are very useful for the identification of the geographical origin. The laboratory, for its activities, has numerous collaborations with national and international research Institutes and Universities.

#### Author(s)

Giulia Tarsitano  
*European Community of  
Consumer Co-operatives  
(Eurocoop)*

#### Stakeholders

Retail, academia, research

#### Country/Region

Italy

#### Keywords

Food analysis, food authenticity, fraud prevention, Next Gen Sequencer



*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000852.*

## Additional Information (context, links, etc.)

<https://www.eurocoop.coop/>

### About CO-FRESH

The CO-FRESH project aims to provide techniques, tools and insights on how to make agri-food value chains more environmentally sustainable, socio-economically balanced and economically competitive. The project pilots several agri-food value chain innovations to see how they, in combination, can improve environmental and socio-economic sustainability.

### Visit us!



<https://co-fresh.eu/>



[COFRESH-H2020](#)



[CO-FRESH](#)

### CO-FRESH Partners



### Disclaimer

This practice abstract reflects only the author's view. The CO-FRESH project is not responsible for any use that may be made of the information it contains.



*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000852.*