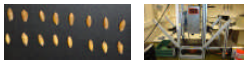


WORK PACKAGE 10: Industrial Integration

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Provide the European food industry with practical tools for avoiding safety and security risks, monitoring entire food sourcing chains, testing on the field both rapid/cost effective screening technologies and targeted/non-targeted confirmatory methods.

- Rapid screening **high-throughput NIR technologies**:
- Quantification of common **wheat** in durum wheat
- Quantification of impurities/contaminants in wheat
- Assessment of **portable instruments** for fraud detection on **semolina or flour**.
- Food Integrity **Information Hub**: Regional, National and EU key interlocutors in **food organizations /associations and industries**



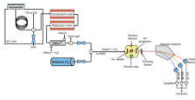
- Recognition of **DNA based methods** for **standardisation bodies** (e.g. authentication of **PDO Idiazabal cheese / tuna canned products**)
- **SNP discovery** for **geographical origin** identification
- **Tailor made methods** for authentication of food ingredients (**seafood, meat, juices etc...**)

- **Global directory of certificates of organic operators**
[http:// www.bioc.info](http://www.bioc.info)
- **Reference database of isotopic ratios** (18O/16O, D/H, 13C/12C, 15N/14N and 34S/32S)
- **Consumer traceability information system** "Bio mit Gesicht"
- **Consumer survey in China**: interviews and choice experiments to identify Chinese consumer expectations of food integrity



Exploring:

- **profiling/untargeted** methods for adulteration or authentication of **botanical origin**
 - **rapid screening** – combined datasets & **chemometrics** for mixtures and origin
- For **honey, dairy, fruit juices**



- Starting the recognition by **standardisation bodies** of:
- **isotopic limits** for the authenticity of **tomato sauce** and **citrus juices**
 - isotopic and trace element methods for the authenticity of **PDO hard cheeses**
 - isotopic analysis for **Aceto Balsamico Modena** authenticity



- Providing FoodIntegrity input to the latest **GFSI's** discussions on combatting Food Fraud
- **Linking up to WP 2's FoodIntegrity Knowledge Base** and its inventory of available analytical methods to address Food Fraud



- Authentication of **meat products** by **portable vibrational spectroscopic solutions**
- Authentication of **olive oils** by **NIR spectroscopy**
- **Risk and vulnerability assessment** of the food chain



- Novel methods for **authenticity testing of organic** plant products
- Identify the possibilities for **reducing the complexity** of present analytical methods
- Evaluation of rapid methods for **multi-elemental analysis**

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Spectroscopic and mass spectrometric analysis of herbs:

- Authenticity of **oregano**
- Development of **chemometric models**
- Discovery and identification of **biomarkers** unique to adulterants



- Identification of **variatal composition** in olive oils
- Identification of **allergens in complex foods**
- Identification of **tomato cultivars in processed foods**
- Identification of **animal species in dairy / processed meat**



- **Omics technologies** in relation to e.g. **honey, meat, oil and wine** authenticity
- Leading **global network of food authenticity experts**
- **Web based resources** for food fraud alerts and management



- **Industry Perspective Matrix Food Chains Analytical Techniques**
- **Industry Relevant Case Histories Collection**
- **Industry Markers for Quality-Authenticity**
- **Coordinator of FI project Industrial Integration Section**



Challenges & Issues

- Emerging economies
- Demand for premium foods
- Rising prices and scarcity of raw ingredients
- Increased risk of adulteration of ingredients & food
- Demand of information from consumers
- Need to discriminate among: *food/raw materials origins* (e.g. *PDO, PGI,...*), *production methods* (e.g. *organic vs traditional*), *food processing, etc.*



WP10 Overall Objectives

- Monitor what happens from raw materials to finished products
- Contribute to assess state of the art in detecting food frauds, understanding consumer concerns
- Check the effectiveness of validated/harmonised methods, transnational databases & reference materials
- Focus on reducing methods complexity to render them more effective for stakeholders
- Explore the potentialities of high throughput non-targeted screening methods
- Test rapid&cost effective screening technologies

Tool boxes

- ✓ Methods & technologies validated from the industry side
- ✓ Guidelines to match between foods description and real products
- ✓ Guidelines to evaluate compliance with defined food/raw materials standards & certifications
- ✓ Environmental& social implications

