Authentic Food

Fast methods for authentication of organic plant-based foods

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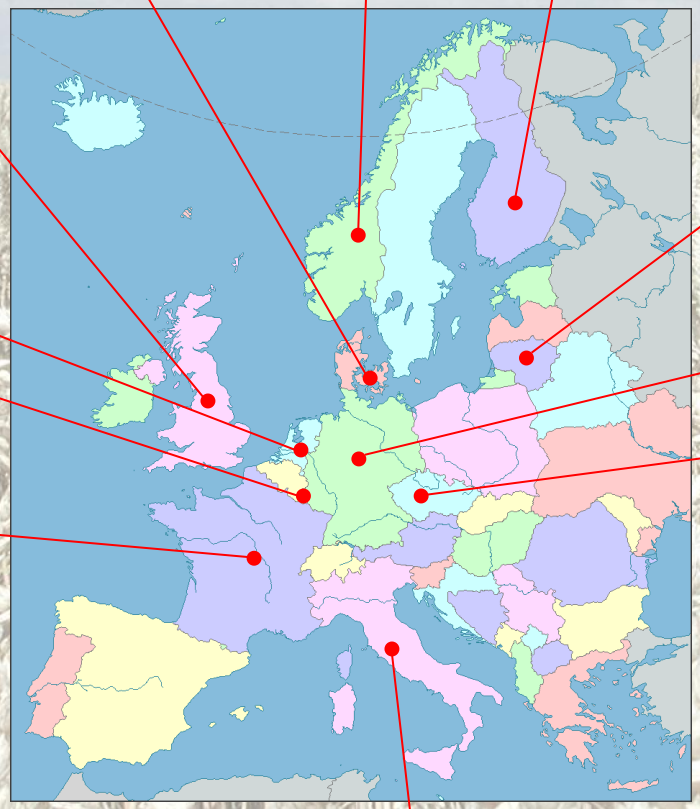
Project partners



FP7 ERA-NET project
16 partners
11 European countries
Project leader: Søren Husted
Period: 2011-2015

		Acronym	Organisation	Country	Contact person
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4	Partner	FERA	Food & Environment Research Agency	United Kingdom	Doctor Simon Kelly
5	Partner	Food DTU	Technical University of Denmark	Denmark	Professor Doctor Erik Huusfeldt Larsen
6	Partner	EAF	Eurofins Analytics France	France	Director Michele Lees
7	Partner	ICT	Institute of Chemical Technology, Prague	Czech	Professor Doctor Jana Hajslova
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9	Partner	GL centre	University of Luxembourg, G. Lippmann Centre	Luxembourg	Doctor Cedric Guignard
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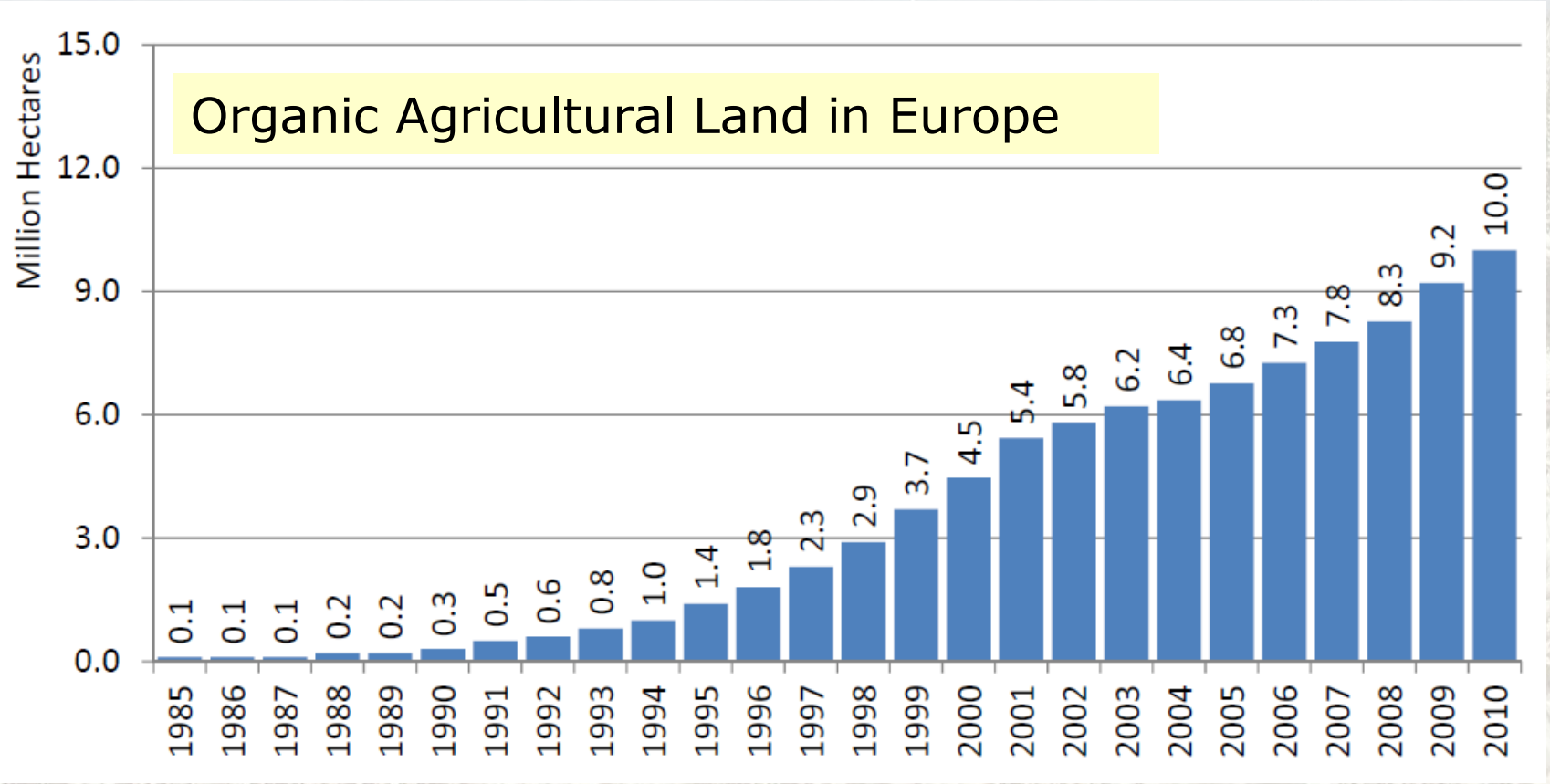
12	Partner	ECOCERT SA	ECOCERT SA	France	Doctor Pierre Ott
13	Partner	UHEL	University of Helsinki, Ruralia Institute	Finland	Senior Planning Officer, M.Sc. Marjo Särkka-Tirkkonen
14	Partner	LIAE	Lithuanian Institute of Agrarian Economics	Lithuania	Head of division Virgilijus Skulskis
15	Partner	BIOS	BIOS	Italy	President Vittorino Crivello
16	Partner	DVFA	Danish Veterinary and Food Administration	Denmark	Head of section Erik Andersen

Context

- **Organic food products: an ever-increasing market**



Source: www.fibl.org

- **Credibility of organic products: still subject to debate**

How to ensure the authenticity of organic products?

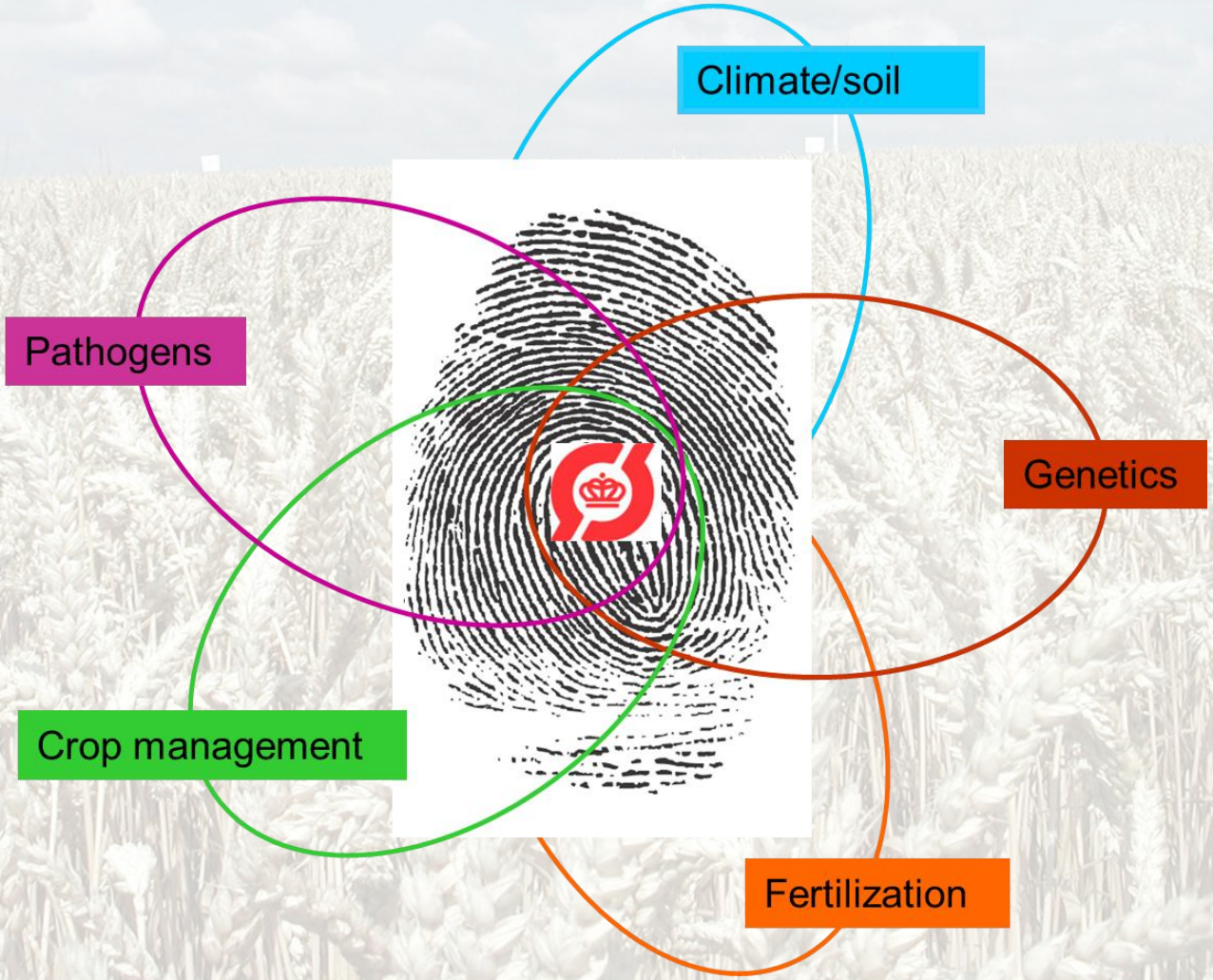
- Regular control of the growing practices
- Traceability of products along storage and processing
- Control of pesticides in processed products: not discriminating

Thus, to assess the authenticity of foods labelled as "organic", there is a need for robust, accurate and validated analytical control methods

Research objectives of the Authentic Food project

- To develop and test a portfolio of analytical techniques for the authentication of organic plant foods
  - *Ionomics*
  - *Stable isotopes*
  - *Metabolomics*
  - *Pesticide screening*
- To evaluate the techniques in corporation with European inspection and certification bodies
  - *Ecocert - France*
  - *BIOS - Italy*
  - *DVFA - Denmark*

Scientific idea: the "organic fingerprint"



	Organic	Conventional
Pesticides	No	Yes
Synthetic fertilizers	No	Yes
Organic fertilizers	Yes	Yes
Fertilizer amount	Lower or similar	Higher or similar
Crop rotations	Longer	Shorter
Yields	Lower or similar	Higher or similar
Product price	Higher	Lower

Hypotheses

The following main hypotheses (h) will be tested:

h1. Organic plant samples can be authenticated at the field and farm levels under conditions where bias is introduced by differences caused by *e.g.* farming practices, geographical location, plant cultivar and growth season.

h2. Authentication of the organic origin is maintained in processed cereal and vegetable samples when data from suitable analytical methods are applied and combined.

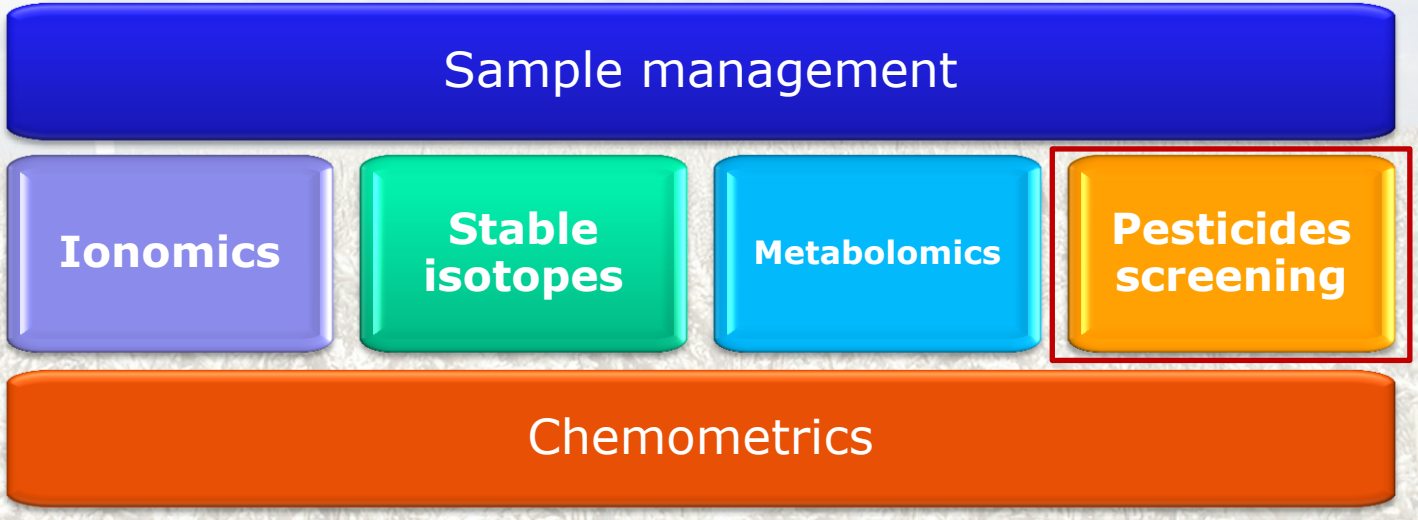
h3. The validated methods can be implemented by relevant stakeholders such as inspection and certification bodies.

Methods

- **Biological cases**

  - Conventional and organic food products grown under controlled conditions
  - Raw and processed products
  - Tomato, wheat, tomato sauce, durum wheat, pasta
  - Several years, varieties and locations (Italy, Denmark)
  - Total: nearly 300 samples

Analytical strategy



Expected results and challenges

- Provide ”proof-of-concept”
- Identify bottlenecks in implementation
- If successful: prepare for official CEN/AOAC validation
- Main challenge: Elimination of geographical and environmental chemical imprints

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- All the Authentic Food partners!

http://www.coreorganic2.org