



HIGHER

Interreg Europe

Biodiversity, research and entrepreneurship: *Case studies from Central Macedonia*

Region of Central Macedonia

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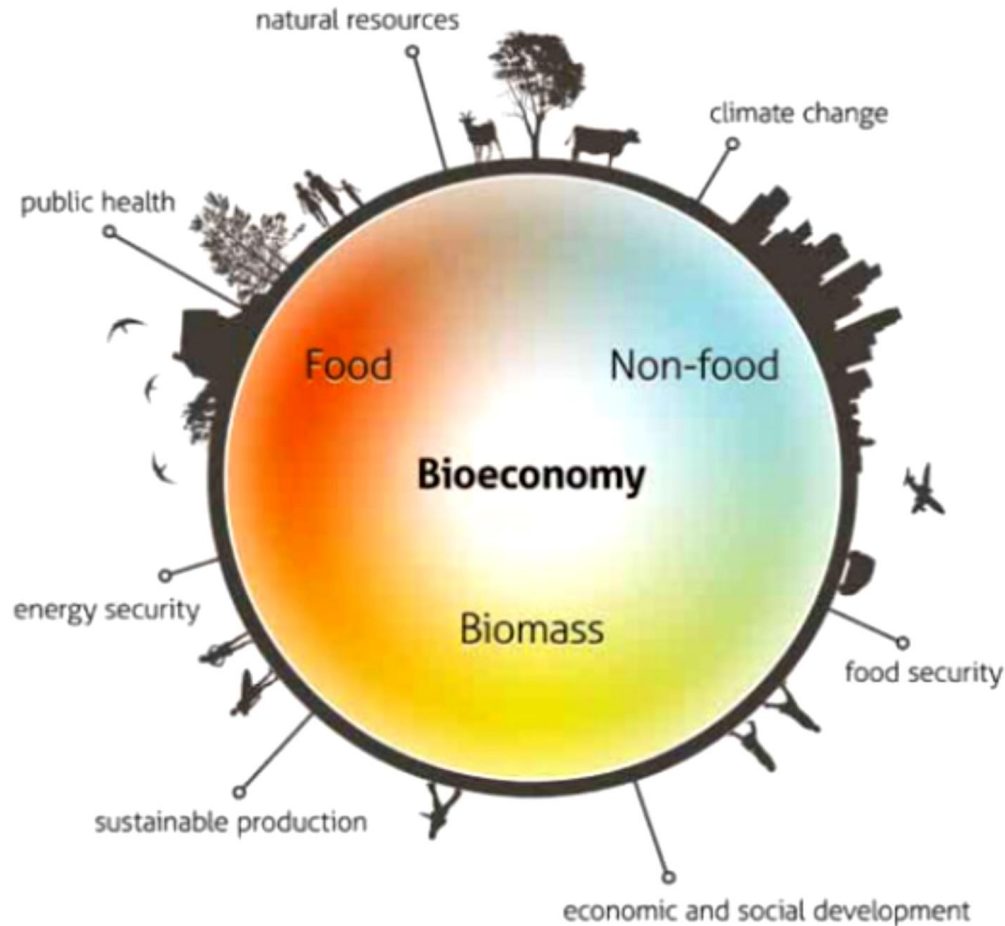
**Interreg
Europe** 
European Union | European Regional Development Fund



Support the “Local Brand Name” in Agriculture

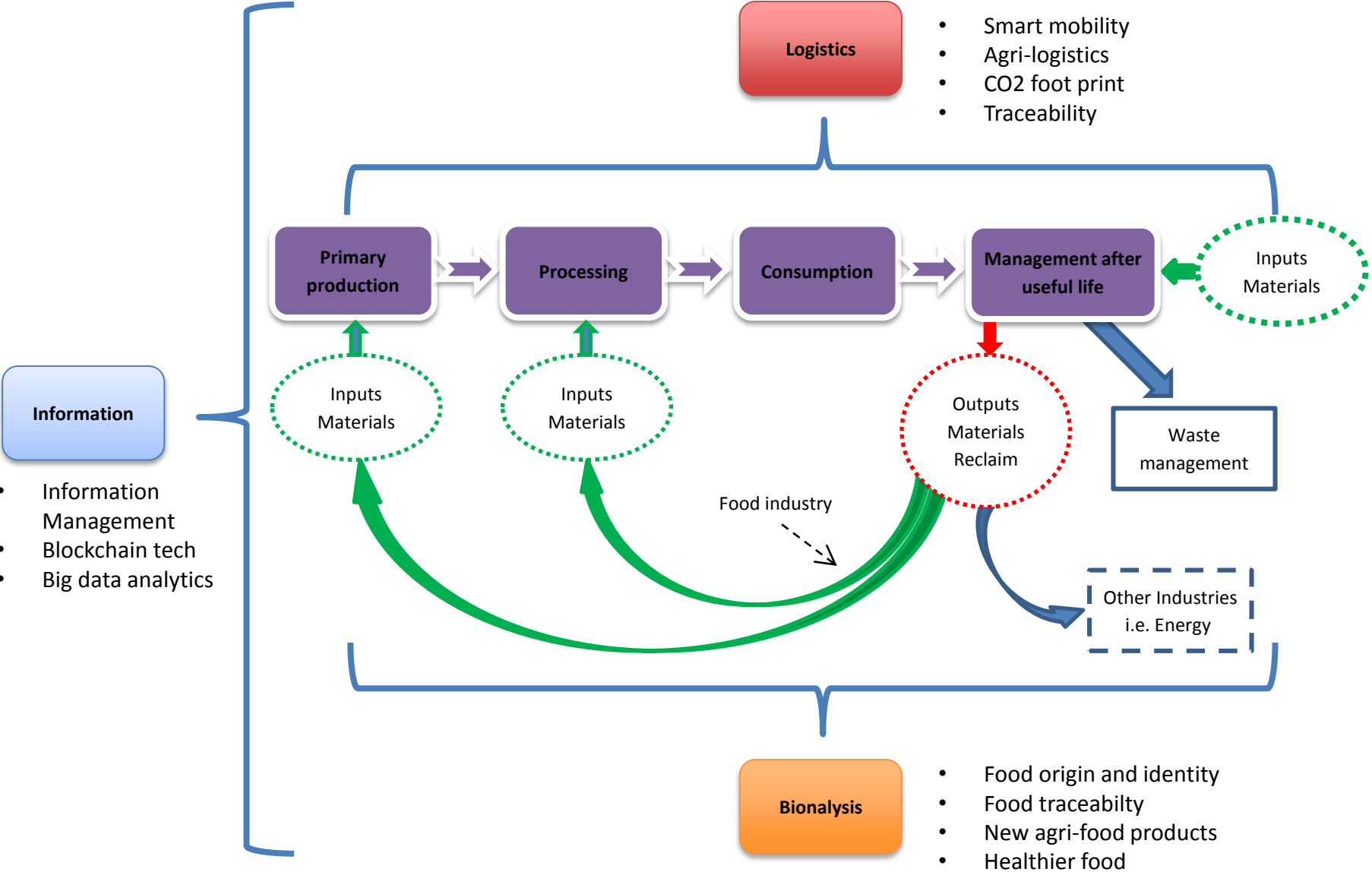
- Assist companies, co-operatives, farmers in monitoring quality attributes in the production and processing of agricultural products
- Incorporate technologies (i.e. marker assisted-breeding) to develop elite plant genotype varieties
- Utilize the rich indigenous biodiversity to support sustainable utilization of valuable resources

Bioeconomy and Food Systems



- 1 NO POVERTY
- 2 ZERO HUNGER
- 3 GOOD HEALTH AND WELL-BEING
- 7 AFFORDABLE AND CLEAN ENERGY
- 8 DECENT WORK AND ECONOMIC GROWTH
- 13 CLIMATE ACTION
- 14 LIFE BELOW WATER
- 15 LIFE ON LAND

Food systems



Logistics

- Smart mobility
- Agri-logistics
- CO2 foot print
- Traceability

Information

- Information Management
- Blockchain tech
- Big data analytics

Bionalysis

- Food origin and identity
- Food traceability
- New agri-food products
- Healthier food

2
ZERO
HUNGER



3
GOOD HEALTH
AND WELL-BEING



7
AFFORDABLE AND
CLEAN ENERGY



13
CLIMATE
ACTION



15
LIFE
ON LAND



Food Systems

Securing global nutrition

Ensuring sustainable agricultural production

Producing healthy and safe foods

Using renewable resources for industry

Developing biomass-based energy carriers

Biodiversity

- "biological diversity," refers to the variety and variability of life on Earth based on genetic differences
- "biodiversity of agro-ecosystems", refers to the variety of ecosystem diversity, that is the variety of species and ecological functions and processes, both their kind and number, that occur in different physical settings
- "biodiversity of culture", refers on the historical process of accumulation of human stock, heritage, leading to the capability to use and manipulate the product biodiversity and a sustainable respect of the ecosystem biodiversity

6300 plant taxa (species and subspecies)

~ 1000 endemic taxa

- Identification, authentication and exploitation of Greek biodiversity: a major objective!
- Incorporation of technological innovations and development of new products

Protecting Food Specialities in the EU

Europe has many different regions and the conditions for agricultural production vary. The different regions have specific production methods and culinary traditions. European, global consumers and food trade are showing an increasing interest in the qualities of these foods. The EU plays a major role in enhancing and safeguarding in many ways these high quality attributes and, for this reason, has developed three quality logos: PDO, TSG and PGI.



PROTECTED DESIGNATION OF ORIGIN (PDO)

A PDO gives status to a food product which is produced entirely within a defined geographical area using recognised skills and ingredients from the region and which is linked to its geographical origin. PDOs include many cheeses (e.g. Parmigiano Reggiano, Feta, Queso Manchego), meat products (such as Prosciutto San Daniele), olive oil (Kalamata, Montoro-Adamuz, Umbria), fruits and vegetables and many wines.



TRADITIONAL SPECIALITY GUARANTEED (TSG)

A TSG emphasises a product's traditional make-up or traditional production method. It is therefore not linked to a geographical region (Jamón Serrano is an example).



PROTECTED GEOGRAPHICAL INDICATION (PGI)

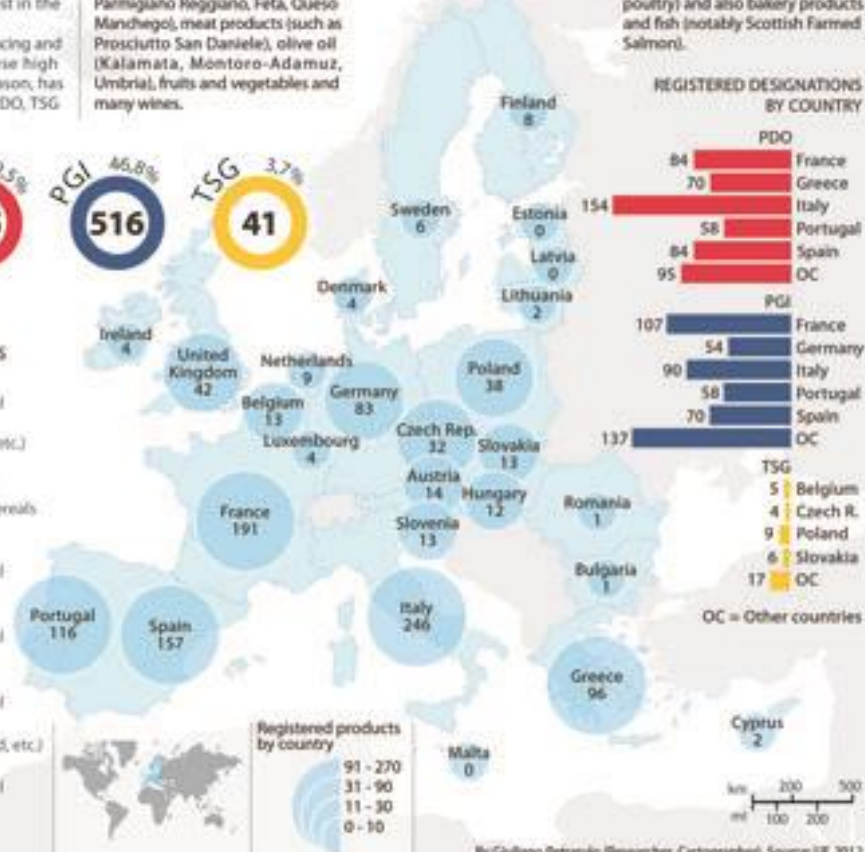
A PGI denotes a food linked by its quality and reputation to a region in which at least one stage of production took place. PGIs include beers (Münchener Bier, Ceskobudejovické Pivo), meat (Scotch Beef, many types of French poultry) and also bakery products and fish (notably Scottish Farmed Salmon).

1102
REGISTERED PRODUCTS
on July 31st 2012

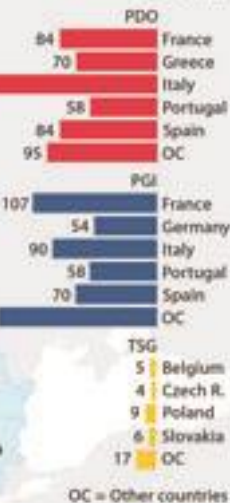


PRODUCTS REGISTERED PER CLASS

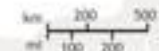
- 116** 10.5% of total
Oils and fats (butter, margarine, oil, etc.)
- 297** 27% of total
Fruit, vegetables and cereals (fresh or processed)
- 200** 18.1% of total
Cheeses
- 127** 11.5% of total
Fresh meat
- 126** 11.4% of total
Meat products (cooked, salted, smoked, etc.)
- 236** 21.5% of total
Other foods



REGISTERED DESIGNATIONS BY COUNTRY



OC = Other countries



By Gallano Petrusio (Researcher, Cartographer). Source: UE 2012

The case of Mountain Tea

Social Need: To replace the cultivation of tobacco and guarantee income

Area: The Pomaks villages in Rodopi mountainous area



“Στη γη μας στα βουνά της Ξάνθης
η γιαγιά μου καλλιεργούσε καπνό.
Εγώ μαζεύω, δεμαπάζω και αποξηραίνω
τσάι του βουνού. Παλιά ήταν το φάρμακό
μας, τώρα είναι το εισόδημά μας.”

Νουριέ Χασάν, παραγωγός, Κένταυρος Ξάνθης



1
NO
POVERTY



Annual turnover: 2 mln € approx. 40 families, 3 SMEs

SDSN member
<http://inab.certh.gr>

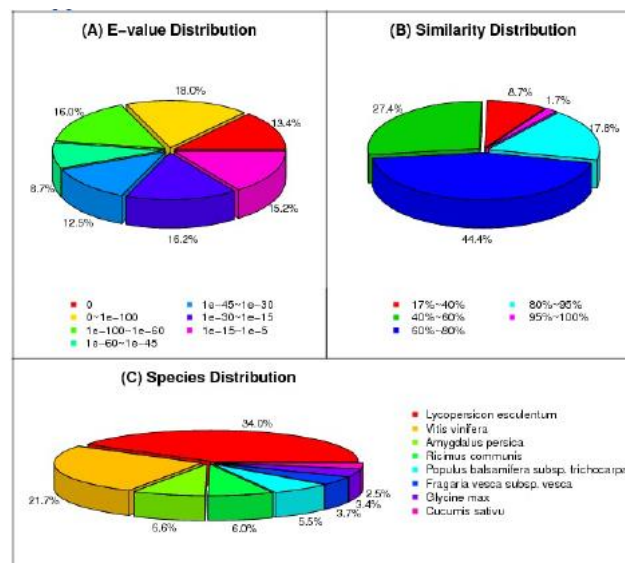
Understanding what makes *Sideritis scardica* (Mountain tea) unique and provide genetic material of higher performance

Output statistics of sequencing

Samples	Total Raw Reads	Total Clean Reads	Total Clean Nucleotides (nt)	Q20 percentage	N percentage	GC percentage
<i>Sideritis_scardica</i>	49,947,880	44,300,316	4,430,031,600	96.98%	0.00%	46.08%

Statistics of annotation results

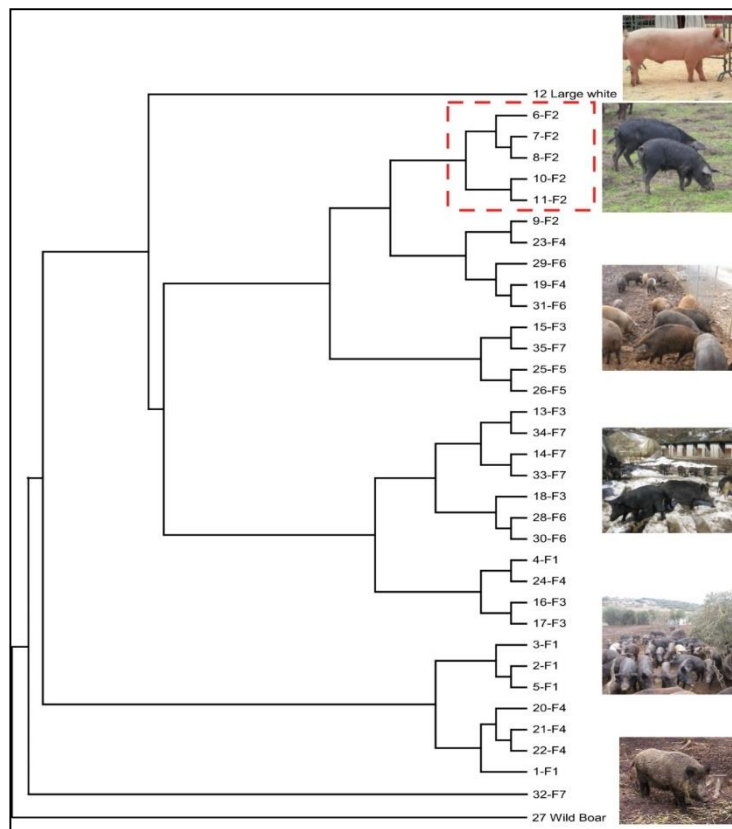
Sequence File	NR	NT	Swiss-Prot	KEGG	COG	GO	ALL
<i>Sideritis_scardica</i> -Unigene.fa	39,403	30,557	26,249	23,354	14,929	30,536	40,536



The case of the Greek Black Pig

Social Need: To find a new animal with higher added value, connected with the local history and tradition

Area: Mountainous area of Olympus, Karpensisi and Viotia



Annual turnover: 3 mln € approx. 8 families, 3 SMEs

Genetic selection of animals, DNA traceability of the final product



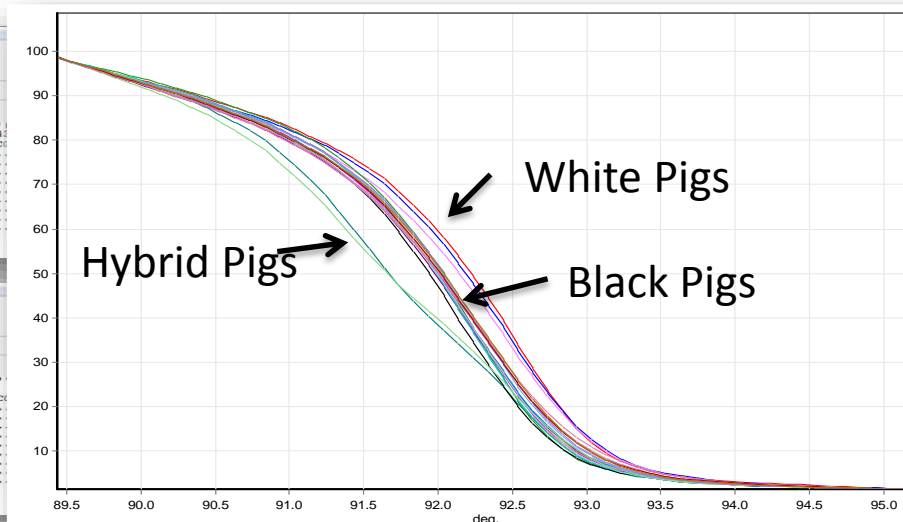
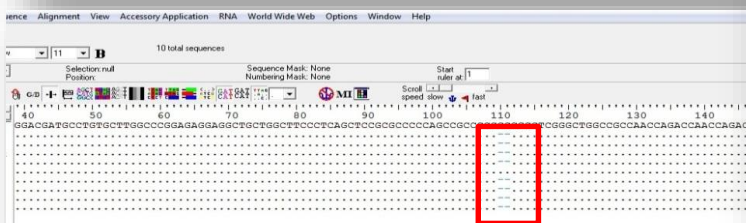
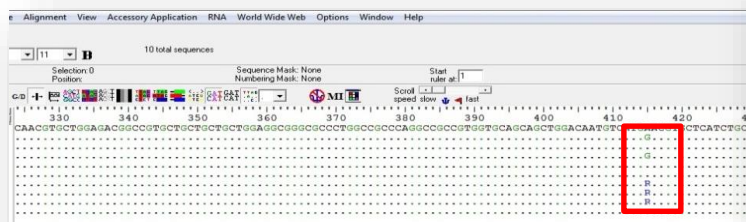
San Daniele

~ 20 Euros/Kg



Pata Negra Bellota

~ 150 Euros/Kg

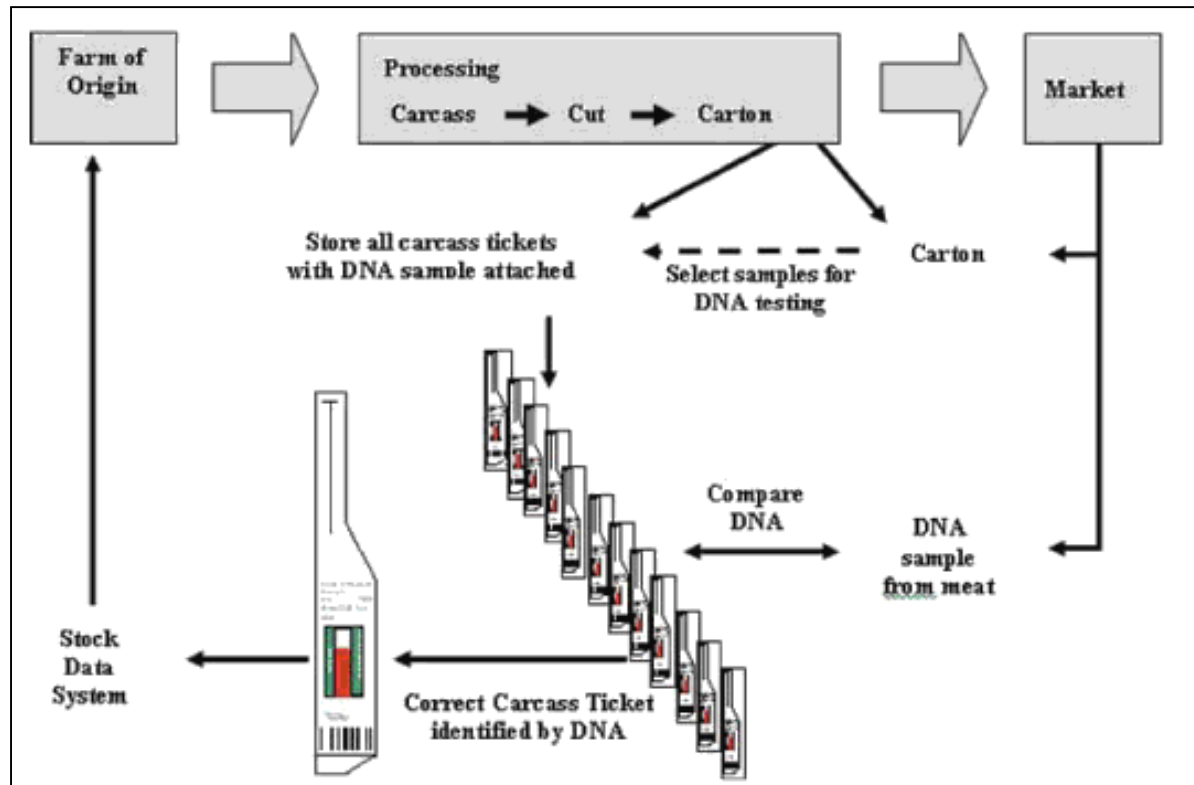


Greek Black Pig sausages
From 8 to 25 Euros/Kg

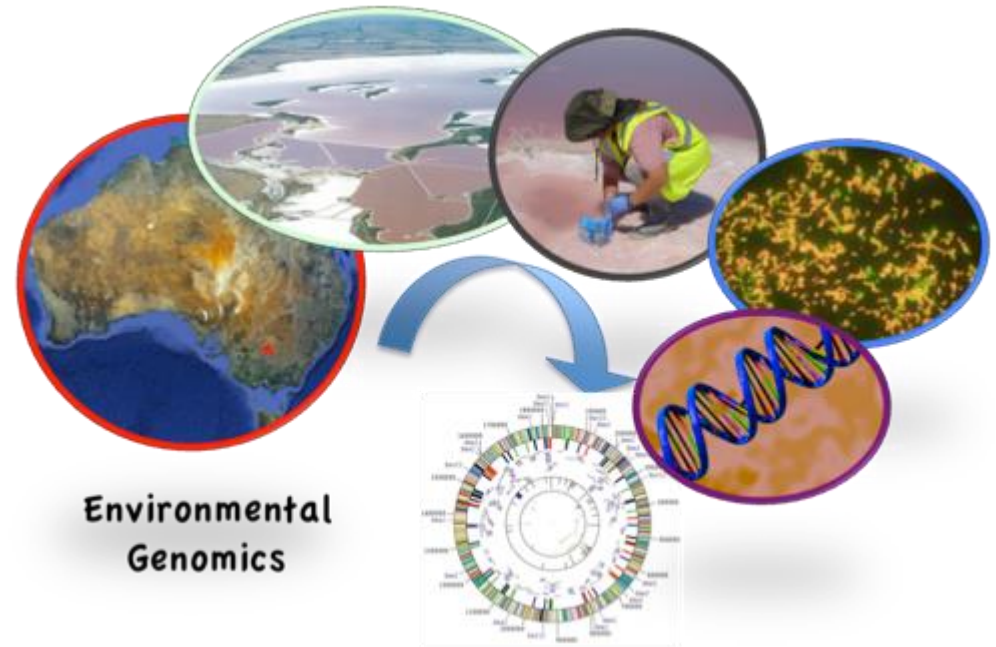


Greek Black Pig salami
From 18 to 45 Euros/Kg
100 Euros/Kg on shelf

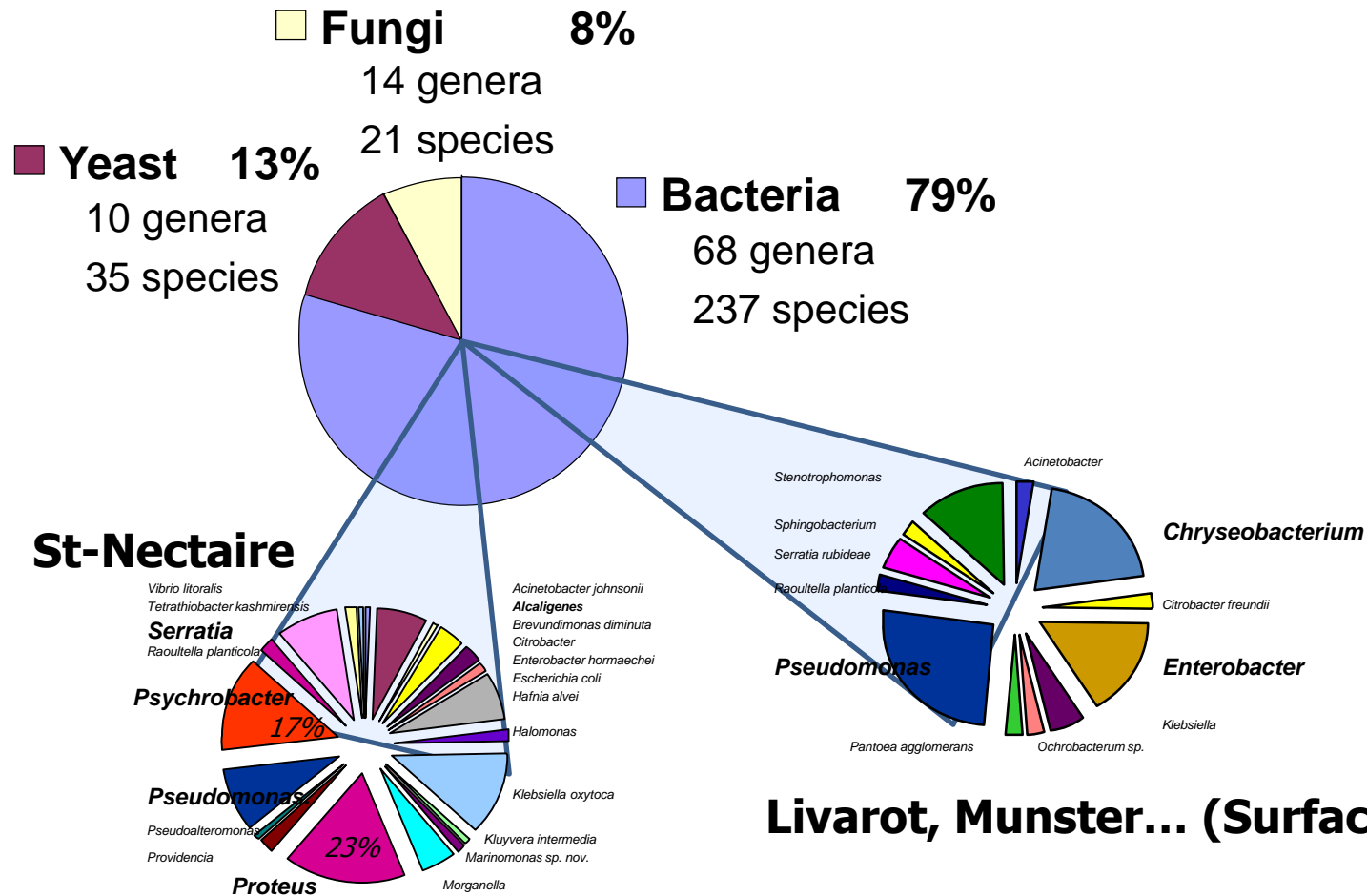
DNA Traceability of the value chain



The case of the dairy products

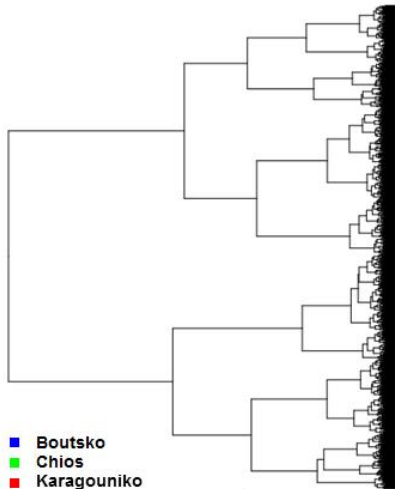
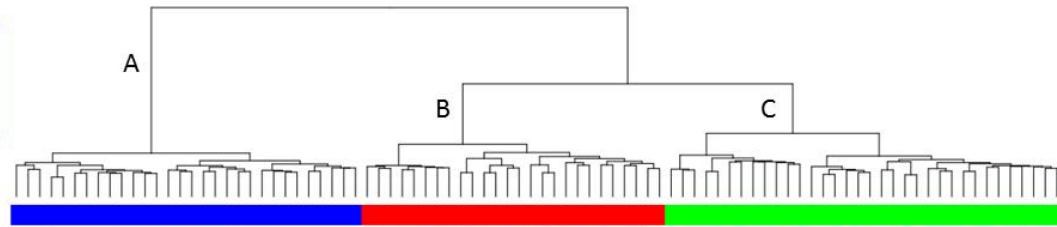
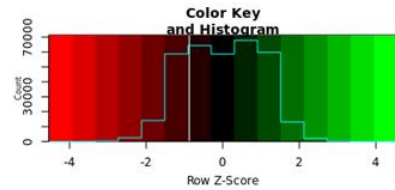


Microbial diversity of traditional fermented dairy products

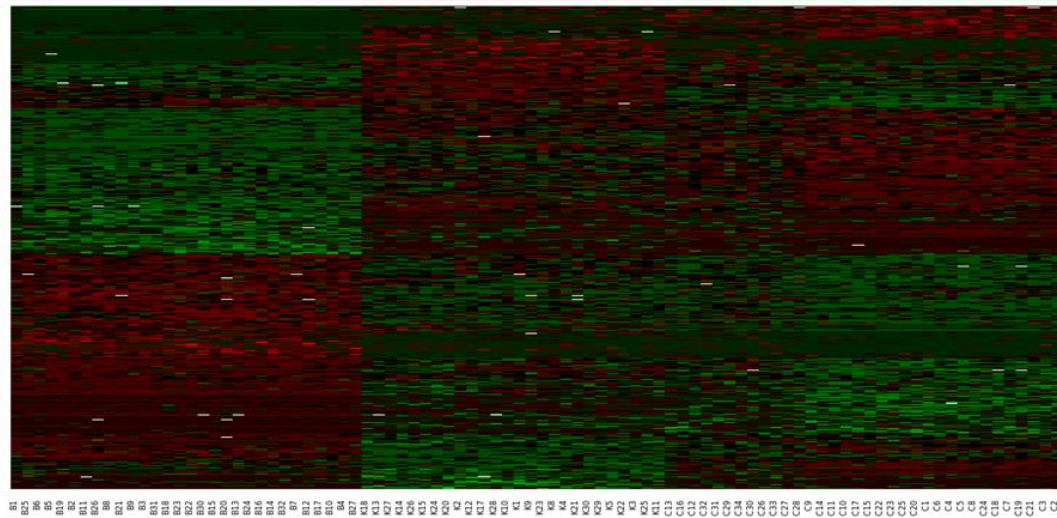


Ref: MC Montel, ANR GRAMME 2008-2010

Greek sheep breeds

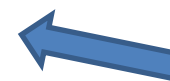
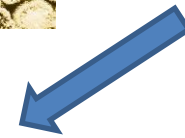
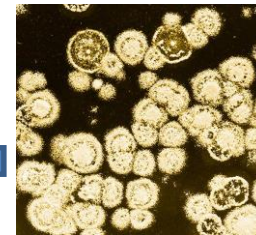


Empty spots: no signal detected



Greek Feta Cheese from autochthonous breeds and Greek starters

- + Only Sheep and Goat milk from **autochthonous breeds**
- + Max goat milk to 30%
- It is prohibited to manufacture Feta Cheese from other type of milk.



Annual turnover: 600 mln € approx., 200.000 workers,
500 Dairy Industries



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European Union
European Regional
Development Fund

Thank you

A. Argiriou

