

Agrifood Traceability

Introduction

The agri-food **certifications** consist of checks carried out on a sample basis by third parties or self-declarations by the producers; consequently, counterfeits, frauds and scams are common practices today, as there is no way to check production processes on time throughout the supply chain.

Agri-food **traceability** today is limited to the indication on a label of the final processing location of the product. "Where" is not the same as "what it contains" or "how it was made".

The quality of the products has always been delegated to the subjective perception of the consumer; the availability of a history of *environmental*, *hygienic-sanitary*, *nutritional*, *organoleptic-sensorial* information associated with each product would make possible objective evaluations.



Areas of intervention

To trace the entire life cycle of an agri-food product, multiple information can be collected at each step along the supply chain: starting from field cultivation, through harvesting, processing and packaging, ending with distribution.

The traceability of the production process can be applied to the most disparate sectors: wine, olive oil and dairy just to name a few.



Target

Profiling the parameters that affect the process of product transformation (chemical-physical, geological, agronomic, organoleptic, biological, meteorological, energetic, ...)

Sustain the various phases of the transformation process with a digital information flow to support decisions

Make the data collected accessible to final consumers so that they can express objective quality assessments.



Method

Data acquisition through installation of sensors specific to the context (weather stations, ground probes, electricity, gas and water meters, ...)

Digitization of the knowledge base for the specific sector on which a system of suggestions, best practices and alarms is activated based on the correlations of the values identified by the sensors.



Result

A constant flow of information allows to have more control over the production process

Suggestions, best practices and alarms provide valuable help in dealing with potential problems, allowing timely and in some circumstances preventive intervention

A detailed *identity card* is obtained with the whole history of the product: a traceability much deeper than the current concept, too often limited to the consideration of almost exclusively logistical aspects.



Activities

- 1. Analysis of the supply chain process, identification of the areas and parameters to be profiled, dimensioning of the data acquisition system
- 2. Knowledge base building, parameter correlation rules, suggestions, best practices and alarms
- 3. Installation of the data acquisition system
- 4. Sustaining the traditional production cycle with digitized information support
- 5. Publication of information associated with the finished product.



Flow

Parameters Acquisition

Measuring

Sensing and acquisition of quality parameters and influencing factors through a distributed sensors' network.

Collecting/Exporting

Physical/Chemical/Biological

Environmental/Climatic

Energy Consumption

Data Logging

Analysis

Definition of ranges and thresholds for the acquired parameters in order to react to variations of the actual field/vineyards conditions (real-time monitoring).

Reporting

Data Presentation ertification

Analysis and consolidation of correlated data in order to achieve pervineyard quality certification and global traceability through an independent certification body or authority.

New Carbon Footprint Certification Label Issuing



Benefits

- Products traceability at the origin and consequent consumers protection
- Disincentive to the alteration of the production chain
- Qualitative assessments based on measurable and comparable indicators
- Support for third-party quality certifications (Zero Emission, TUV, DNV, ...)
- Stimulate fair competition among producers
- Environmental, economic and social sustainability thanks to the reduction and optimization of the resources used
- Ethical commitment of producers in Corporate Social Responsibility actions through eco-marketing.



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