

From seed to fork: digital technologies for tomato production traceability and sustainability

Riferimenti

Tipo di progetto

Gruppo Operativo

Acronimo

TOMATRACK

Tematica

Filiere agroalimentari

Information

Time frame

2019 - 2022

Durata

36 months

Partners (no.)

13

Regione

Sicilia

Comparto

Orticoltura

Localizzazione

ITG18 - Ragusa

Costo totale

€500.000,00

Fonte di finanziamento principale

Programma di sviluppo rurale

Programma di sviluppo rurale

2014IT06RDRP021: Italy - Rural Development

Programme (Regional) - Sicilia

Parole chiave

Soil management / functionality

Water management

Plant production and horticulture

Sito web

<http://www.tomatrack.eu>

Project status

ongoing



Objectives

"Introduce an advanced and innovative technologies to support farmers and advisers in minimizing inputs in tomato cultivation (open field and greenhouse) and develop an ICT tool that allows farmers to register all agronomic practices and support decisions by combining data from sensors, cultural parameters and provisional models.

Guarantee the complete traceability of the tomato production chain, from the plant nursery to the transformed products, following all the development phases, harvest and processing.

Supplementing farm income by re-using agricultural production waste.

Activities

Development and implementation of ICT solutions to manage crop operations, and of a decision support system connected to sensors in farms to rationalize irrigation, fertilization and crop protection. Optimization of agronomic practices with field tests to reduce use of chemical inputs based on agroecology principles. Design of an information system for the complete traceability of the product, from seed to the product on the table. Recovery of the by-products of the supply chain, with the construction of a greenhouse, a bio-shredder and a biomass boiler and use of a mini cold crusher for the extraction of oil from tomato seeds.

Context

International competition implies the presence of competitors characterized by low production costs with a consequent reduction in profit margins for local producers. Companies need to increase production efficiency and product quality with a sustainable use of resources, while maintaining profit margins.

Climate change requires continuous adaptation to the timing of each operation. Farmers and service technicians need real-time support to adapt

company procedures to EU regulations drawn up in order to achieve mitigation and adaptation to climate change.

Adoption of new ICT technologies in the agricultural sector has become a mandatory step. Their use in Europe, however, particularly in the south, is still much lower than in North America and Australia. What is meant by Agrifood 4.0 or Smart Agrifood is a vision of the agricultural and agri-food supply chain based on the full adoption of digital technologies, with the aim of increasing the competitiveness of the entire sector. Digital innovation in the agri-food sector must concern the different links that make up the supply chain.

Partenariato

Role	Azienda	Address	Telephone	E-mail
Leader	AZIENDA AGRICOLA CAUSARANO FRANCESCO	Via Valdo 77 97018 Scicli RG Italy		peppecausarano@gmail.com
Partner	FlorGuarino, SOCIETA' AGRICOLA SEMPLICE di Francesco, Ignazio & Pasquale Guarino	c.da Arizza snc 97018 Scicli RG Italy	0932 1838734	info@florguarino.it
Partner	SOCIETA' AGRICOLA SEMPLICE PIANO CONTI DI GALANTI CARMELO E DI BENEDETTO LUCIA	c.da Piano Conti 97018 Scicli RG Italy	0932-1733004	info@pianoconti.it
Partner	Società Agricola Marianelli ss	c.da Torrepalombo snc 97018 Scicli RG Italy	0932 843309	
Partner	Ficili Guglielmo	via Ardigò, 11 97018 Scicli RG Italy		
Partner	Fidone Vincenzo	c.so Umberto I, 77 97018 Scicli RG Italy		direzione@italplant.eu

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Role	Azienda	Address	Telephone	E-mail
Partner	Azienda Agricola Pietro Virderi	Via Lentini, 27 97018 Scicli RG Italy		pvirderi@yahoo.it
Partner	Azienda Agricola Napoleone Alessandro	C.da Riola 97018 Scicli RG Italy		
Partner	Azienda Agricola Savarino Elis	Via Colombo, 149 97018 Scicli RG Italy		
Partner	SUNTIME S.R.L.	Via Tommaseo, 13 97018 Scicli RG Italy		suntimesrl@gmail.com
Partner	Agricolus s.r.l	Via Settevalli 320 06121 Perugia PG Italy	075 9975503	discover@agricolus.com
Partner	ZEPHYR s.r.l.	Via C. Cattaneo, 106 56125 Pisa PI Italy		
Partner	Scuola Superiore Sant'Anna di Pisa	Piazza Martiri della Libertà, 33 56127 Pisa PI Italy	050 883521	alberto.mantino@santannapisa.it

Pratiche abstract

Description

For the purposes of traceability, real cornerstone of the market given the growing attention of consumers towards product quality, TOMATRACK intends to introduce process innovation with the use of Agricolus® cloud ecosystem, an application solution for precision agriculture tested on tobacco, corn, vine and olive tree. Agricolus® will be equipped with specific functions for tomato cultivation and forecast models based on agrometeorological data, to support defense, irrigation and fertilization. The innovation tool will be created with close cooperation between Agricolus and Scuola Superiore Sant'Anna, and continuously aligned with the needs and indications of the farms involved, through a process of co-design and calibration on territory.

Forecast models, placed in a real context, thanks to the monitoring of the crop and environmental parameters, will support the decision-making process of farmers and technicians in the implementation of agricultural practices that safeguard the environment and profit. Agricolus tomato will make it possible to trace the entire production cycle starting from the nursery: phenology, cultivation operations and the inputs used (water, fertilizers and phytosanitary treatments). The aim is to obtain

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a tomato grown with sustainable practices, assisted by innovative technology, reducing the environmental impact and aiming for high quality standards.

As part of TOMATRACK, Combilux will also be built, an innovative greenhouse which, in combination with a shredder and a boiler, will allow biomass to be used, obtaining a process innovation to be included in the intercompany context.

Description

Enhancement of by-products and waste from tomato production by creating a product innovation with the extraction of seed oil through a mini cold crusher, obtaining a high-value product for the cosmetic industry that can be used to obtain biologically substances active, especially lycopene, to be used as natural dyes and antioxidants in the production of skin care products. The resulting will be a product that can be spent on the market by enhancing the waste resulting from the production of tomatoes.

Link utili

Titolo/Descrizione	Url	Tipologia
Sito web del progetto	http://www.tomatrack.eu	Sito web
Video del progetto	https://www.youtube.com/watch?v=KBhq2qMjgDo	Link ad altri siti che ospitano informazioni del progetto
