

Press Release No 2.

COST Action FruitCREWS Addresses Urgent Concerns Amidst Growing Climate Challenges

Climate change is undeniably reshaping our world, and its impact is increasingly felt in regions across the globe. The rise in temperatures and prolonged periods of drought are becoming more frequent occurrences, posing severe challenges to various sectors of society. As a result, the demand for water resources is intensifying, and this heightened competition for water, spanning industries and civil usage, diminishing its availability for agriculture.

Tree crops are at risk because of a complex scenario that affects their water supply and irrigation methods. Additionally, it's worth noting that several key agricultural productions, such as apple, olives, citrus fruits, and grapevines, are predominantly cultivated in the Mediterranean Basin - an area particularly vulnerable to the adverse effects of climate change. The Mediterranean region is warming faster than the rest of the world and will need more irrigation in the next few decades.

Furthermore, European fruit-growing areas are struggling with erratic weather conditions, which is making farming more complex. Fruit trees require a high amount of resource inputs in terms of water, labour, and fertilisers to reach economic yields and satisfactory quality standards.

Introducing FruitCREWS COST Action



These challenges are tackled with the COST Action [Fruit tree Crop REsponses to Water deficit and decision support Systems applications \(FruitCREWS\)](#). [This Action](#) is committed to investigate innovative solutions to ensure the resilience of tree crops and sustainable agriculture in the face of an ever-changing climate.

Launched in autumn 2022, this interdisciplinary network gathers more than 200 members from 45 countries across the globe. Researchers, scientists, sensor and model developers are focusing on the responses of fruit tree crops to drought stress across diverse environments and harnessing technologies for real-time monitoring of plant water status and precision irrigation scheduling. FruitCREWS intends to fortify fruit tree crops against the risks of climate variability while promoting sustainable water management practices.

Quote from the Chair

“FruitCREWS represents a joint international effort to provide growers with strategies and tools to face the more and more frequent risk of drought stress. We believe that joining forces at international level is the only way to effectively face this challenge”

Says Prof Brunella Morandi, the Action Chair



FruitCREWS' First Annual Meeting Cultivates Sustainable Water Management in Fruit Production – Bologna – Italy

Supporting Orchards

Equipping orchards with the tools to monitor abiotic stresses is a paramount undertaking to ensure quality fruit production in Europe.

Fruit trees, like grapevines and olive trees, are grown on 11 million hectares in the EU and contribute 13% to the economy (EUROSTAT data). In the past years, we have also seen that even Northern European apple and pear orchards suffer from prolonged dry spells and sustainable irrigation solutions are an upcoming topic to the farmers. Fruits also hold a pivotal role in safeguarding the health of European consumers by warding off "social diseases" and are instrumental in preserving and stewarding essential lands in European society. Consequently, this sector is strategically important for Europe and requires constant attention and support.



Professor Cenk Küçükyumuk during a Short Term Scientific Mission (STSM) in the Fruit Tree Ecophysiology Lab led by prof. Pasquale Losciale at Department of Soil, Plant and Food Science University of Bari Aldo Moro, Italy.

COST Action FruitCREWS is dedicated to empowering orchards to address these challenges and ensure the future of European agriculture. The network is committed to discovering practical solutions for monitoring plant water status in real-time, enabling growers to schedule irrigation through the utilisation of cutting-edge technologies. Within specialised working groups, the action aims to plan strategies that can be activated when specific drought stress conditions are predicted, including:

- Identifying cost-effective and user-friendly sensor tools for measuring tree functionality in different water stress conditions .
- Evaluating existing models for quantifying plant water requirements during drought conditions.
- Developing efficient irrigation strategies tailored to various crops and environmental conditions.
- Enhancing existing decision support systems based on the knowledge generated and promoting their adoption among stakeholders.

The primary aim of this COST Action is to acquire insights into how fruit tree crops react to drought stress under varying environmental conditions. The pursuit of identifying efficient tools for real-time monitoring of plant water status serves as a cornerstone for the fruit industry's journey toward a more sustainable and prosperous future.

These research outcomes hold the potential to revolutionise sustainable irrigation management practices within European orchards. Through collaborative efforts with researchers, small and medium-sized enterprises (SMEs), service providers, water authorities, and fruit producers, the network aspires to disseminate and share their

discoveries. Their overarching goal is to raise awareness regarding water scarcity issues among a diverse array of stakeholders.

Additional Information

View the [Action website](#)

View the [Network website](#)

[FruitCrews First Annual Meeting in Italy](#)

[Agricultural production - orchards](#)

Starting Date: October 2022
Duration: Duration: 48 months

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<https://cost-fruitcrews.eu/>

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