

Context

FARM5.0 is supported by the **FARMTOPIA** open call, through which aims to integrate advanced AI and IoT technologies into kiwi farming to optimize irrigation scheduling and pest risk management.

By combining real-time sensor data with weather intelligence and predictive analytics, **FARM5.0** helps farmers plan water use more precisely and act earlier against pest outbreaks.



Democratizing Digital Farming for All

HORIZON-CL6-2022-FARM2FORK-02-04
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YTHION OÜ

An Estonia-based SME specializing in digital solutions. With expertise in IoT, AI analytics, and software integration, it develops cost-effective, scalable platforms for small and medium sized companies. YTHION's mission is to provide intelligent, sustainable, and user-friendly tools that boost productivity and resource efficiency.

MORAITI Farm

It is a kiwi farm specializing in sustainable cultivation. Serving as an end-user and testing ground for the **FARM5.0's** innovative solution, it provides its expertise and local knowledge to collaborate with YTHION OÜ aiming at boosting yields, cutting resource use, and promoting eco-friendly production.

Contact us

<https://farm50.eu/contact-us>

FARM5.0

*A digital assistant
and
lightweight digital twin platform
for
kiwi farming*





Timeline

The **FARM5.0** subproject started July 1st, 2025 and runs for 12 months, structured into the following key phases:

- ◆ **Months 1-3 | Co-creation :** Farmer needs and KPI definition, use-case specification, and initial system configuration .
- ◆ **Months 4-10 | Deploy & test:** IoT and ADS deployment on the pilot farm, data collection and monitoring, and iterative tuning of the models and recommendations.
- ◆ **Months 11-12 | Validate & assess:** Final validation in scenarios, impact assessment, and preparation of lessons learned and dissemination outputs.
- ◆ **Months 1-12 | Project mgmt.:** Ongoing coordination, reporting, and stakeholder alignment .

What is **FARM5.0**?

FARM5.0 is an intelligent ADS for kiwi farming that merges real-time sensing with a lightweight digital twin and predictive analytics. Farmers can receive alerts, explore “what-if” scenarios, and ask a digital assistant to draft irrigation plans or interpret pest risk, using simple natural language.

Why FARM5.0 Matters

- ◆ AI-supported irrigation planning improves water efficiency & reduces unnecessary watering.
- ◆ Early pest-risk forecasting helps farmers act in time and reduce avoidable crop losses.
- ◆ Explainable recommendations (XAI) increase trust by showing why an action is suggested.
- ◆ Low-cost IoT and interoperable components support scalable, sustainable adoption across farms.

Core Objectives

- Provide predictive decision support for irrigation needs and pest-risk windows in kiwi cultivation.
- Deploy a modular ADS integrating IoT sensing, a lightweight digital twin, and AI models with explainability.
- Enable farmer-friendly interaction via an LLM-based assistant and actionable alerts.
- Validate the solution on the pilot farm and prepare replication and long-term operation.

