21-Partner SENTRY Consortium Unites to Build Europe's Next-Generation Plant Health System Under Horizon Europe

Europe's agricultural framework faces unprecedented pressures — from rising temperatures driven by climate change that are accelerating the spread of devastating plant diseases, threatening food security, causing staggering post-harvest waste, and driving an unsustainable reliance on chemical pesticides.

In a decisive response to these interconnected environmental challenges, the **SENTRY project** (*A Precision Agriculture Solution for Plant Pathogen Surveillance and Risk Assessment*) officially launches its 48-month initiative on **June 1, 2026**. Backed by a €6 million grant from the **European Union's Horizon Europe framework** (Grant Agreement No. 101288591), SENTRY unites **21 academic, research and industry partners across seven countries** to transition European agriculture from reactive crisis management to proactive and responsive, data-driven plant health care.

The Technological Leap: AI, Sensing, and Physical Sanitation

SENTRY is a **Horizon Europe-funded research and innovation project developing next-generation solutions for plant pathogen surveillance and risk assessment**. By combining real-time molecular diagnostics, artificial intelligence, environmental sensing, and participatory monitoring, SENTRY aims to help farmers detect plant disease threats earlier, utilise methods to reduce pesticide use, and strengthen climate resilience across agricultural systems.

SENTRY will design, test and deploy a digital platform to predict and contain plant disease outbreaks before they escalate. The architecture integrates autonomous airborne molecular diagnostics and real-time environmental sensing — combined with AI-powered digital twin modelling of disease risk. This will allow food producers at all levels to virtually simulate disease risks, outbreak pathways and evaluate potential interventions before applying them in the physical world.

Crucially, the project pairs these digital capabilities with **advanced, eco-friendly phytosanitary measures that will be rigorously tested in six pilot studies across Europe**. Technologies such as nanobubble water systems, UV-C sanitation, biocontrol agents and cold plasma, and antimicrobial packaging will be tested to protect crops from the field all the way to the supermarket shelf — ensuring **safer food systems** while aggressively driving down chemical pesticide use in alignment with the EU Green Deal and Farm to Fork Strategy.

A Powerful Cross-Border Consortium

The strength of SENTRY lies in its **diverse, multi-actor composition**, seamlessly blending academic excellence, deep technological innovation, and real-world agricultural experience.

The consortium is coordinated by **Stremble Ventures Ltd** (Cyprus) and comprises **21 distinguished organizations**, including Academic & Research Institutions, Technology Pioneers & Developers, Agricultural, Agrifood & Post-Harvest Leaders:

> Institute of Chemical and Biological Technology ITQB of **Nova University Lisbon** (Portugal); Department of Agricultural Sciences, Biotechnology and Food Science of the **Cyprus University of Technology** (Cyprus); School of Chemical Engineering - Laboratory of Process Analysis & Design of the **National Technical University of Athens** (Greece); Jheronimus Academy of Data Science/Department of Mathematics and Computer Science - JADS of **Eindhoven University of Technology** (Netherlands); **InnovPlantProtect** (Portugal); **CER Groupe** (Belgium); **European Sensor Systems** (Greece); **Agroapps** (Greece); **Ubitech** (Greece); **Waboost** (Slovenia); **Castros Iluminações Festivas S.A.** (Portugal); **Matglow** (Portugal); **AMP Scientific Ltd** (Cyprus); **RochaCenter** (Portugal); **Cyprus Phassouri Plantations Company** (Cyprus); **Green Point** (Slovenia); **KGZS - Chamber of Agriculture and Forestry of Slovenia** (Slovenia); **Outro Chão** (Portugal); **Brightlands Campus Greenport Venlo** (Netherlands); and **Onoblo** (Italy).

By bridging the gap between research and practice, SENTRY guarantees that its technological developments translate into **real-world solutions** leading to a **reduction of pesticide usage**, **lower production losses due to diseases** and an **extension of fresh produce shelf-life of 2-3 days.** All tools will be certified against **international standards such as ISPM-14**, ensuring they are readily accessible and easily adopted by local farming communities. SENTRY places human oversight at its core, utilizing **trusted AI ethics and highly accessible, multilingual digital tools** to guarantee that farmers of all backgrounds can participate in community-driven crop protection.

> **Athos Antoniades, CEO at Stremble Ventures Ltd (Project Coordinator), noted:** "*SENTRY represents a major step forward for European agriculture. By combining innovative technologies with predictive digital tools, we are moving from reactive disease control to a proactive, evidence-driven system. This will help farmers reduce costs, improve yields, and deliver safer, more sustainable food to consumers across Europe.*"

The SENTRY consortium will gather for its **official Kick-Off Meeting** in **Limassol, Cyprus**, from **June 23–25, 2026**, marking the formal beginning of a new era for European agricultural resilience. As part of this opening summit, the project will also host a **public "Healthy Harvest" Open Event on June 24th** to share its precision agriculture vision directly with local stakeholders and the wider community.

About SENTRY

- **Project Duration:** 48 Months (starting June 1, 2026)
- **Total Budget:** approx. €6 Million
- **Grant Agreement No:** 101288591

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