

101074452 - LIFE21-CCA-ES-HYDROSTICK

Advancing Water Management in Agriculture with LIFE HYDROSTICK

Introduction: Water Scarcity in a Changing World

Water scarcity is one of the defining challenges of the 21st century, with agriculture at the epicenter of the crisis. Irrigation accounts for approximately 70% of global freshwater withdrawals, and inefficient practices exacerbate this demand. As climate change intensifies, the need for innovative water management solutions has never been more urgent. LIFE HYDROSTICK, a groundbreaking project under the EU LIFE Programme, offers a transformative approach to water and nutrient management in agriculture.

The Role of IoT in Water-Smart Agriculture

LIFE HYDROSTICK harnesses the power of the Internet of Things (IoT) to provide detailed, real-time insights into soil conditions. This wireless sentinel system combines advanced sensors and data analytics to measure:

- Soil texture and water percolation, critical for understanding drainage and water retention.
- Salt concentration, which impacts plant growth and soil health.
- pH and nutrient availability, essential indicators of soil fertility.

By integrating these measurements into a centralized platform, LIFE HYDROSTICK enables precise control over irrigation and fertigation practices. The system is not only user-friendly but also scalable, offering tailored solutions for different crops and climatic conditions.

"This project has received funding from the European Union's LIFE Programme under grant agreement No. 101074452."

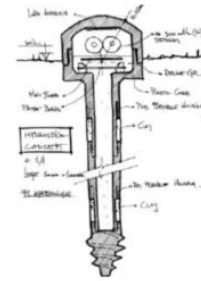
"This publication reflects only the author's view, and the European Climate, Infrastructure and Environment Executive Agency (CINEA) is not responsible for any use that may be made of the information it contains."



Co-funded by
the European Union



European
Commission



HYDROSTICK

Pilot Trials: A Regional Perspective

The project's field trials in Navarra and Extremadura provide a unique opportunity to validate the technology in diverse agricultural settings:

1. Navarra: Known for its temperate climate and variety of crops, this region presents ideal conditions for testing the system's adaptability.
2. Extremadura: With its arid environment and high irrigation demand, Extremadura tests the system's resilience in challenging conditions.

The trials will assess key performance indicators, including water savings, crop yield improvements, and fertilizer efficiency, to demonstrate the technology's impact.

Sustainability at the Core

LIFE HYDROSTICK is guided by a strong commitment to sustainability. The project sets ambitious environmental Key Performance Indicators (KPIs), aiming to:

- Reduce the water footprint of agriculture by optimizing irrigation practices.
- Minimize the environmental impacts of excess fertilizers, such as eutrophication and soil degradation.
- Enhance the long-term health and productivity of soils, a critical resource for future generations.

Replication and Future Impact

A critical component of the project is its focus on replicability. The team is working to design strategies that facilitate the adoption of LIFE HYDROSTICK across Europe and beyond. This includes creating detailed user manuals, conducting training sessions, and fostering collaborations with other EU projects.

Conclusion: Transforming Agriculture for the Future

LIFE HYDROSTICK represents a paradigm shift in how we manage water and nutrients in agriculture. By combining advanced technology with a commitment to sustainability, the project paves the way for a more resilient, efficient, and environmentally friendly agricultural sector. As the trials progress, the insights gained will shape the future of precision farming, ensuring that agriculture thrives even in the face of mounting challenges.

"This project has received funding from the European Union's LIFE Programme under grant agreement No. 101074452."

"This publication reflects only the author's view, and the European Climate, Infrastructure and Environment Executive Agency (CINEA) is not responsible for any use that may be made of the information it contains."