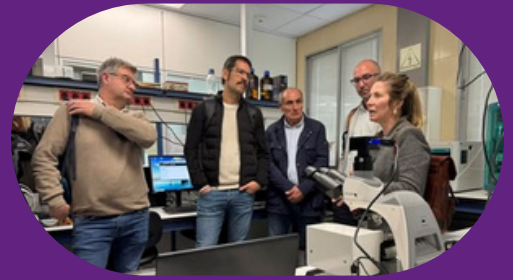


INNOBUYER IMPACT STORIES: OPEN CALL FOR EIC SOLVERS

AI-powered honey fraud screening technology for the Food and Agriculture Arbitration Laboratory of Spain.

InnoBuyer onboarded duos composed of a EIC Solver (SME previously or currently funded by the EIC) and a Challenger (public institution) to co-create a solution for an unmet innovation need (the Challenge) working together over a 10-month period. Following successful pilots, challengers received support from Innobuyer and experts to design simplified ToR. Each project was backed by €65,000 in financial support—€10,000 for the challenger and €55,000 for the solver.



HONEYAI

THE NEED

The InnoBuyer programme addressed a key challenge in the food quality and authenticity control sector, particularly in the verification of honey origin and purity.

Currently, **honey authenticity** is determined through manual microscopic pollen analysis (melissopalynology) — an official but **slow, costly, and highly specialised process** that depends on a few expert analysts across Europe. This limitation causes delays in official controls, limited testing capacity, and increased vulnerability to fraud, especially for imported honeys or complex blends.

The Laboratorio Arbitral Agroalimentario (LAA), the Spanish national reference laboratory for Honey and other food products, represents the type of public institution most affected by these bottlenecks.

Beyond the LAA, the problem impacts beekeepers, honey packers, regulatory authorities, and ultimately consumers, who rely on accurate and transparent certification of honey origin. By addressing this need, the InnoBuyer challenge sought to modernize and automate authenticity testing using digital microscopy and AI — reducing dependency on human experts while maintaining the scientific rigor and traceability required by official laboratories.



THE SOLUTION

Through the InnoBuyer programme, Microfy Systems and the Laboratorio Arbitral Agroalimentario (LAA) co-developed and validated **an advanced version of Honey.AI, an automated microscopy and AI-based system for honey authenticity control.**

The main objective was to evaluate the system as a screening technique capable of identifying potential botanical or geographical mislabelling in honey samples, complementing the laboratory's existing analytical procedures.

The project focused on adapting the AI models to the LAA's own sample preparation protocol and training them with a curated dataset of honeys from reliable Spanish and international sources.

These models were designed to recognise region-specific pollen spectra and detect inconsistencies between the observed pollen composition and the declared label.

In parallel, LAA technicians participated in usability and precision validation, testing the workflow and comparing results with traditional manual microscopy. The collaboration resulted in improvements to the user interface, automatic image-quality filters, and traceability of digital reports.

By the end of the project, 50 honey samples had been analysed using the system, achieving high agreement with expert results and demonstrating that Honey.AI can effectively support laboratories in rapid, traceable, and standardised screening for honey fraud.

IMPACT

The pilot between Microfy Systems and the Laboratorio Arbitral Agroalimentario (LAA) demonstrated the successful deployment of a fully autonomous microscopy and AI-based system for honey authenticity screening.

Instead of relying on human observation, the instrument now performs the entire analysis automatically — from image capture and pollen detection to classification and digital report generation — without requiring continuous supervision by an analyst.

During the project, **50 honey samples were analysed under real laboratory conditions**. The results showed a high level of agreement with expert manual microscopy, validating the system as a screening method for potential botanical and geographical mislabelling in honey.

This autonomy allows laboratories to **run analyses in parallel with other tasks, effectively multiplying analytical capacity while freeing expert staff for verification and regulatory work**. The pilot also involved a trained LAA technicians, whose feedback guided improvements in usability, interface design, and result traceability.

At project completion, the LAA rated the collaboration as “excellent progress” and confirmed its intention to **acquire the system for continued operational use** — a milestone marking the first autonomous AI microscope adopted by a European national honey control laboratory.



FOR MICROFY, THE INNOBUYER PROGRAMME HAS BEEN ONE OF THE MOST VALUABLE LEARNING EXPERIENCES IN OUR JOURNEY FROM RESEARCH TO MARKET. IT ALLOWED US TO WORK DIRECTLY WITH A PUBLIC REFERENCE LABORATORY, TO UNDERSTAND THEIR REAL NEEDS, OPERATIONAL LIMITS, AND DECISION-MAKING PROCESSES.

THIS COLLABORATION HELPED US TO ADAPT OUR PRODUCT DEVELOPMENT TO INSTITUTIONAL WORKFLOWS, DATA PROTECTION REQUIREMENTS, AND THE PRACTICAL REALITIES OF PUBLIC INNOVATION PROCUREMENT.

THROUGH THE CO-DESIGN SESSIONS WITH THE LAA, WE LEARNED HOW TO MAKE OUR TECHNOLOGY MORE USABLE AND ROBUST IN A REAL TESTING ENVIRONMENT — IMPROVING CALIBRATION, USER INTERFACE, AND AUTOMATION RELIABILITY. THE PROCESS ALSO HELPED US REFINE OUR BUSINESS MODEL FOR PUBLIC-SECTOR CLIENTS, ALIGNING OUR PRICING, SERVICE LEVELS, AND MAINTENANCE STRATEGY WITH WHAT LABORATORIES ACTUALLY REQUIRE.

PARTICIPATING IN INNOBUYER CONFIRMED THAT OPEN INNOVATION BETWEEN STARTUPS AND PUBLIC INSTITUTIONS WORKS: IT ACCELERATES TECHNOLOGICAL VALIDATION, BUILDS TRUST, AND DEMONSTRATES IMPACT BEYOND PILOTS. FOR US, IT WAS NOT ONLY A TECHNICAL SUCCESS BUT ALSO A PROFESSIONAL MILESTONE — WE LEARNED HOW TO SPEAK THE LANGUAGE OF PUBLIC SCIENCE AND REGULATION, WHICH WILL GUIDE HOW MICROFY SCALES FUTURE COLLABORATIONS ACROSS EUROPE

