

THE PURPEST PROJECT



NEWS

PurPest summer activities:

- PurPest meeting & Field Visits in Portugal
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- Purpest Publication

**Welcome to the
October edition of
our newsletter.**



Over the past few months, our project has been active across Europe with workshops, conferences, field visits, and technical developments. Here are the highlights!

PurPest Meeting & Field Visits in Portugal

The PurPest Project Annual meeting took place in Portugal from June 11–13, 2025, bringing together around 40 participants from more than 12 countries, including researchers, stakeholders, and project partners, for a comprehensive program of technical sessions, field visits, and collaborative discussions on odour-based pest detection technology.



The meeting began at the University of Évora, where participants attended sessions on the latest research findings, project dissemination activities, and upcoming objectives. The presentations highlighted the development of innovative detection technologies, challenges during plant import and difficulties to monitor pest incursions, and best practices for controlling quarantine pests, emphasizing PurPest's commitment to combining scientific rigor with practical solutions.



PurPest Meeting & Field Visits in Portugal

On the second day, participants embarked on a field visit to the pine forests of Tróia, severely affected by pine wilt disease, caused by the pinewood nematode (*Bursaphelenchus xylophilus*). The visit offered a rare opportunity to observe symptomatic trees first-hand and discuss the ecological and economic impacts of this destructive pest. Researchers and stakeholders exchanged insights on detection methods, monitoring strategies, and mitigation measures, highlighting the urgent need for coordinated action across Europe and the importance of developing rapid sensor-based detection systems currently under development by the PurPest consortium.



Following a scenic ferry crossing of the Sado River, the group toured PALSER, a certified wood and pallet treatment facility in Palmela. Operating in compliance with ISPM-15 standards, the facility demonstrates sustainable approaches to preventing the cross-border spread of pests via untreated wood packaging, linking laboratory research to real-world applications.

The meeting concluded at INIAV in Oeiras, where Work Package 6 – Dissemination, Communication and Exploitation presented recent strategies for stakeholder engagement, knowledge sharing, and public outreach.

Closing remarks were delivered by project coordinator Dr. Andrea Ficke (NIBIO, Norway).

Overall, the event reinforced scientific collaboration, institutional partnerships, and cross-border knowledge exchange, highlighting PurPest's pivotal role in protecting Europe's forests through innovation, applied research, and sustainable pest management solutions. It showcased the synergy between field observations, laboratory research, and practical interventions, demonstrating how the project contributes to the broader European effort to combat quarantine pests effectively.



Recent Highlights

PurPest at Scientific Meetings & Visits

Over the past months, the PurPest project has been actively presented across Europe and beyond, showcasing innovations in early pest detection and sustainable crop protection:

June 2025: PurPest research featured at key events including the E-NICHE Annual Meeting (Évora, Portugal), the "Dialog Grün" forum (ETH Zürich, Switzerland), and the International Meeting on Chemical Sensors (Freiburg, Germany). Highlights included advances in **VOC-based diagnostics**, portable sensor technologies, and low-cost micro-GC devices for rapid pest detection.



July 2025: At the EBSA Conference (Rome, Italy), partners presented on nanotechnology-based photonic sensors, while INIAV hosted the Korea Forest Service delegation, sharing lessons from 25 years of pinewood nematode management. PurPest was also presented at the Plant Interaction Meetings (Oeiras, Portugal), emphasizing early nematode detection.

August 2025: Activities included new trials with VOC collectors at University of Padua, presentations at the EAAE Congress on fall armyworm migration, and at the Plant Health Nordic-Baltic Meeting on reliable plant inspection sensors.








September 2025: PurPest was showcased at the European Researchers' Night, engaging the public with interactive science activities, and at the FORSAID Annual Workshop (Carcavelos, Portugal), strengthening collaboration in sustainable agroforestry. Partners also contributed to the Maritime Pine Health Workshop (Alcácer do Sal, Portugal).

Across all these events, PurPest reinforced its commitment to sustainable, site-specific pest management, advancing research while connecting with scientific, industry, and public communities.

Communication

Analysis of Ergothioneine Using Surface-Enhanced Raman Scattering: Detection in Mushrooms

Federico Puliga ^{1,*}, Veronica Zuffi ^{1,†}, Alessandra Zambonelli ¹, Pavol Miškovský ², Ornella Francioso ¹
and Santiago Sanchez-Cortes ³

A new PurPest-supported article published in Chemosensors demonstrates the power of **Surface-Enhanced Raman Scattering (SERS)** to detect ergothioneine, a valuable antioxidant naturally found in mushrooms. With contributions from Pavol Miškovský of SAFTRA Photonics and other partners, the study shows that SERS enables **rapid, non-destructive, in situ detection** of bioactive compounds even in complex biological matrices.

This breakthrough aligns with PurPest's mission to foster **sustainable and innovative agricultural technologies**, highlighting how advanced sensing tools can improve quality control and authentication of natural products.

Puliga, F.; Zuffi, V.; Zambonelli, A.; Miškovský, P.; Francioso, O.; Sanchez-Cortes, S. 2025. Analysis of Ergothioneine Using Surface-Enhanced Raman Scattering: Detection in Mushrooms. Chemosensors 2025, 13, 213. <https://doi.org/10.3390/chemosensors13060213>

Looking Ahead

We continue to strengthen European collaborations in plant health, focusing on sensors, rapid diagnostic methods, and volatile-based early detection. Upcoming events include participation in the **International Forestry Quarantine Research Group** meeting and ongoing lab work evaluating VOC emissions for sensor prototype development.

Thank you for following PurPest!

Together, we advance early detection and sustainable plant health protection.

– The PurPest Team!

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