AI Robotic Trap for real-time whitefly and black aphid monitoring

agriculture; smartfarming; AI; modular; trap; pests; alert; aphid; whiteflies

Italy

The EU-funded PestNu project will deliver Artificial Intelligence (AI) robotic traps for real-time pest monitoring in open-fields and greenhouses. The trap uses AI-based image processing algorithms (developed by CERTH) for the identification of whiteflies and black aphids, along with self-adaptive forecasting and prediction models that are capable of predicting pest attacks (developed by AGROROBOTICA). The trap, exploiting a 5G antenna and a GPS module, can rapidly send an alarm in the case of an insect attack providing the optimised plan for crop protection to the Decision Support System under cybersecurity. Finally, the trap is optimally designed (by AGROROBOTICA) to attack easily the targeted insects using 3D printing (developed by CERTH).

Pest infestations cause an average of 35% pre-harvesting losses and insects account for roughly 50% of these losses by reducing productivity and affecting crop yields. Furthermore, pests can also pose health risks to both farmworkers and consumers when pesticides are used to control them. By accurately identifying and monitoring pests with the PestNu AI Robotic Trap, farmers can adopt more targeted and effective pest management strategies that reduce the use of harmful chemicals and enhance the safety of agricultural practices.

solar-powered robotic AI trap
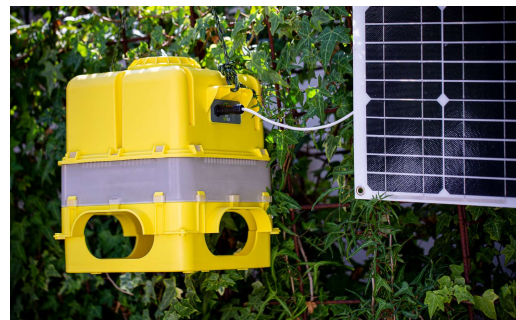
Solar panel with long life battery included, GPS, temperature, humidity and barometric pressure

AI central case for the recognition of harmful insects

Sexual, chromotropic and food lures able to attract insects

PestNu AI Robotic Trap main components

Practice abstract n.1

Valerio Goglia (Agrorobotica), Nikolaos Giakoumoglou (CERTH)

Valerio Goglia (valerio.goglia@agrorobotica.it)