

A - Informazioni generali

CIP

NOSDQS

Codice Interno Proposta

Proponente

CACCIOLA, Santa Olga - DI3A

Stato

Inviata

Ambito

INTERNAZIONAL

Scadenza Interna

Acronimo

RESISTAI

Titolo

AI-driven actionable insights for evidence-based crop protection agai

Descrizione

ResistAI delivers an AI-powered, multi-layer Early Warning System (EWSS) for pesticide resistance and pest dynamics, integrating phenotypic, molecular, metagenomic, imaging, and climate data with ICT, biotech, and biocontrol tools for timely, data-driven decision-making. Early detection combines CRISPR-based diagnostics, RNAi-Seq for sRNA discovery, microbiome-guided biocontrol, multiplex optical biosensors, and an AI-driven resistance profiling tool enabling mechanism-independent detection. ICT components include AI-enabled smart traps, autonomous UGVs/UAVs for monitoring and precision spraying, mobile apps for in-field diagnosis, and Earth Observation for hotspot mapping and climate-risk modelling. These data streams feed the EWSS for predictive analytics and adaptive decision support. Biocontrol integrates ckRNAi-based and microbial solutions with agroecological practices (e.g., biodiversity deployment, crop diversification) to reduce selection pressure and enhance system resilience. The EWSS delivers actionable outputs across scales: at farm level (real-time risk scores, spray recommendations, alerts), regional level (hotspot mapping and spread forecasting), and national level (IPRM protocols and policy inputs). Solutions are validated across multi-site demonstrations in Greece, Spain and Egypt (open-field, greenhouse, vineyards, and post-harvest systems), assessing performance and user acceptance. ResistAI also evaluates agroecological rotations to reduce resistance pressure and generates best practices to inform protocols and policies. Replication is supported through simulations, while foresight analysis and long-term monitoring enable adaptive, evidence-based management for scalable, sustainable crop protection.

Bando Di Riferimento

HORIZON-CL6-2026-02 (Call 02 - :

B - Durata e macro parametri finanziari

Ente Finanziatore

Horizon Europe

Durata Mesi

42

Durata complessiva in mesi del progetto.

Costo Complessivo

€5.998.628

Costo complessivo del progetto.

Finanziamento Atteso

€5.998.628

Quota di finanziamento che si prevede di ottenere dal soggetto finanziatore

Finanziamento Atteso Unict

€400.000

Quota del finanziamento atteso che spetterebbe all'Università di Catania.

C - (opzionale) Partenariato

Partenariato



In caso di partenariato

Capofila

CERTH

Partner

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Indicare uno o più partner.

D - Componenti del gruppo di ricerca*

Ruolo	Ssd	Struttura	Nominativo	Monte Ore	Note
RESP_SCIENTIFICO	AGRI-05/B	DI3A	CACCIOLA, Santa Olga	400	
COMPONENTE	AGRI-05/B	DI3A	GUSELLA, GIORGIO	200	
COMPONENTE	AGRI-05/A	DI3A	MASSIMINO COCUZZA, GIUSEPPE EROS	250	
COMPONENTE	AGRI-05/B	DI3A	PANE, Antonella	400	
COMPONENTE	AGRI-05/B	DI3A	VITALE, ALESSANDRO	200	

* **Solo** Corpo docente UNICT. È possibile indicare altri eventuali componenti nelle note o nella descrizione.

F - Note

Note

Responsabile Amministrativo Dott. Roberto Faedda

