WildPosh

Introducing WildPosh

Pan-European assessment, monitoring, and mitigation of chemical stressors on the health of wild pollinators

Context

WildPosh

Background

Wild fauna and flora are facing variable and challenging environmental disturbances. One of the animal groups that is most impacted by these disturbances are pollinators. Pollinators face multiple threats, but the spread of anthropogenic chemicals (i.e. pesticides) form a major potential driver of these threats.

Aim

WildPosh is a multi-actor, transdisciplinary project whose overarching mission is to significantly improve the evaluation of the risk to wild pollinators of pesticide exposure and enhance the sustainable health of pollinators and pollination services in Europe.

Duration

48 months: January 2024 – December 2027

Plan

41 Deliverables & **14** Milestones

Consortium

WildPosh

17 partners across
10 countries

UMONS
University of Mons

Coordinator

WildPosh

Objectives and actions

WildPosh

OBJECTIVE

Determine the real-world agrochemical exposure profile of wild pollinators at landscape level, within and among sites

ACTION

Provide the first pan-European quantification of the exposure hazard of pesticides to representative wild pollinators while characterising their populations

WildPosh

OBJECTIVE

Characterise causal relationships between pesticides and pollinator health

ACTION

Use integrated and controlled laboratory and semi-field experiments, determining how major categories of pesticide alone and in mixtures affect pollinator health

WildPosh

OBJECTIVE

ACTION

Build open database on pollinator traits/distribution and chemicals to define exposure and toxicity scenario

Develop databases on ecological traits and the spatial distribution of pollinators in relation to their potential exposure to pesticide, and on pesticide use and their toxicity

WildPosh

OBJECTIVE

ACTION

Propose new tools for risk assessment on wild pollinators

Propose integrated systems-based risk assessment tools for wild pollinators

WildPosh

OBJECTIVE

ACTION

Drive policy and practice

Use innovation to meet the need for monitoring tools, novel screening protocols, and practice- and policy-relevant research outputs to local, national, European, and global stakeholders

WildPosh

Work Packages

WildPosh

WP1

A monitoring scheme to determine sources and routes of pesticide exposure in environmental compartments/ matrices

Determine optimal sampling methods and proxies for pesticide contamination in environmental compartments/matrices

Quantify pesticide contamination across matrices/compartments collected across the monitoring scheme

Establish a site network to quantify sources and exposure routes of pesticides in agri-ecosystems

Devise and test a monitoring scheme for establishing the level of contamination of pollen/nectar/water/plant matrices/soil that can support future benchmarking

WildPosh

WP2

Effects of exposure to single pesticides single exposure and their mixtures on wild pollinators as novel models in laboratory and semi-field experiments

Evaluate the variability among wild insect pollinators of Europe in their sensitivity to pesticides

Define the extent to which semi-field sensitivity mirrors lab sensitivity to pesticide in wild pollinators

Develop OECD protocols for testing wild insect pollinators in pesticide risk assessment

WildPosh

WP3

Omics of pesticide responses in pollinators

To elaborate MALDI-MS molecular fingerprints (MFPs) of fat bodies and haemolymph to understand the consequences of pesticides exposures on juvenile and adult wild pollinators

To assess the overall stress response to pesticides on the peptidome/proteome dysregulation by off-gel bottom-up proteomics and molecular mass imaging

Define diagnostic transcriptional signatures that can be used to predict sensitivity to pesticide exposure of pollinators in the field

To decode the molecular machinery underlying the response of pollinators to pesticides

WildPosh

WP4

Data curation and in silico modelling for risk assessment

Compile a comprehensive trait database which will include traits reflecting sensitivity and exposure risk of European pollinators to pesticides and other stressors

Compile distributional and occurrence information on European pollinators at national and continental levels

To identify and collate data on pesticide exposure and effects, as well as on other stressors able to amplify the adverse effects on model species

To improve the existing in silico prediction methodologies for toxicity endpoints relevant to pollinators (e.g., QSAR models)

To build an open-source curated database which will include information on pollinator traits and distribution, on pesticides, and on other stressors for model species

WildPosh

WP5

Integrated systems-based risk assessment

Critically review current approaches of risk assessment and provide strategies for improvement integrating lethal and sublethal effects of single and multiple pesticides including interactions

Develop landscape models integrating pesticide exposure and hazard to inform predictive pollinator population and community risk models

Develop environmental scenarios for pesticide risk and mitigation models

Develop an integrated open-access tool for a systems-based risk assessment

WildPosh

WP6

Integrated systems-based risk assessment

Identify effective response options to reduce pesticide risks to wild pollinators

Synthesise WildPosh project findings and external knowledge

Develop good practice guides for practitioners to mitigate the impacts of pesticides on wild pollinators

Engage in science-policy dialogues to inform national and international policy on the development of mitigation measures

WildPosh

WP7

Communication, knowledge exchange and impact

Raise awareness of the project through a recognisable project branding and website

Develop a Communication Plan (CP) and Plan for the Exploitation and Dissemination of Results (PEDR) to ensure the impact and long-term legacy of the project's results

Maximise WildPosh's outreach to relevant stakeholders of the quadruple helix model

Establish collaboration paths and synergies with land to sea ecosystems and biodiversity actors

WildPosh

WP8

Project Management and Scientific Coordination

Organise internal management structures, ensure scientific reporting and quality control of deliverables, coordinate financial management and reporting to the European Commission, and manage all contractual documents within the consortium and with the European Commission.

WP9

Ethics requirements

Ensure compliance with the 'ethics requirements' set out in this work package

WildPosh

Sister project

PollinERA and **WildPosh** share the ambition of providing a better understanding of the exposure routes and toxicological and ecological impacts of chemical pollution on terrestrial biodiversity and ecosystems.

The two projects will unfold in close collaboration to maximise impact and ensure the sustainability of results. Some collaboration mechanisms include joint communication activities and events, a joint data management strategy and activity alignment to solidify the quality of final outputs.

Thank you!

wildposh.eu

@WildPoshProject   @wildposh-eu   wildposhproject

WildPosh