

Data Management Plan

Author-formatted document posted on 06/04/2026

Published in a RIO article collection by decision of the collection editors.

DOI: <https://doi.org/10.3897/arphapreprints.e194245>

PollinERA Deliverable - D7.1 Data Management Plan

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D7.1 Data Management Plan

30/09/2024

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Funded by
the European Union

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Prepared under contract from the European Commission

Grant agreement No. 101135005

EU Horizon Europe Research and Innovation Action

Project acronym:	PollinERA
Project full title:	Understanding pesticide-Pollinator interactions to support EU Environmental Risk Assessment and policy
Project duration:	01.01.2024 – 31.12.2027 (48 months)
Project coordinator:	Prof. Christopher John Topping, Aarhus University (AU)
Call:	HORIZON-CL6-2023-BIODIV-01-1
Deliverable title:	Data Management Plan (DMP)
Deliverable n°:	D7.1
WP responsible:	WP7
Type of the deliverable:	Report
Dissemination level:	PU – Public
Lead beneficiary:	BeeLife European Beekeeping Coordination (BEBC)
Due date of deliverable:	M9
Actual submission date:	30.09.2024

Deliverable status:

Version	Status	Date	Author(s)
1.0	Draft	01.09.2024	Michael Rubinigg BEBC
1.1	Review	11.09.2024	Teodor Metodiev PENSOFT
1.2	Review	23.09.2024	Luna Kondrup Marcussen AU
1.3	Final	30.09.2024	Michael Rubinigg BEBC

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1 Introduction

1.1 Preface

This Data Management Plan (DMP), prepared as part of the deliverables of the EC REA (Grant Agreement 10135005) funded project “Understanding pesticide-pollinator interactions to support EU environmental risk assessment and policy” (PollinERA), represents a plan for data management agreed upon by the PollinERA consortium. This plan is in line with the policies of the consortium partner’s organisations, as defined by the organisation’s data management policies, and with the requirements of the sponsor, as defined in the Horizon Europe research and innovation funding programme.

The Data Management Plan (DMP) aims to ensure that data produced within the scope of this project is acquired, processed, stored, and archived systematically and transparently and that it complies with regulatory and formal requirements, in particular with the general principles of data security (GDPR), the Open Science policy of Horizon Europe, and the Data Governance Framework of the EU Pollinator Hub [1]. It includes the necessary policies and standards for data types and formats, metadata content, data curation, data accessibility and sharing, as well as long-term data preservation. In addition, the DMP aims to harmonise PollinERA's data management strategy with the project WildPosh (“Pan-European assessment, monitoring, and mitigation of chemical stressors on the health of wild pollinators”), funded under the same call (HORIZON-CL6-2023-BIODIV-01-1) as the PollinERA project. WildPosh is a multi-actor, transdisciplinary project focused on enhancing the evaluation of pesticide risks to wild pollinators and promoting the sustainable health of pollinators and pollination services across Europe. Given similar objectives, research methodologies, and stakeholder engagement of PollinERA and WildPosh, aligning their DMPs will facilitate data integration and optimize the use of resources across both projects.

In relation to the management of research data, the Open Science policy requires researchers to ensure early and open sharing of research data, to provide immediate and unrestricted open access to research outputs (including data, models, algorithms, software, protocols) and to ensure verifiability and reproducibility of research outputs, practicing responsible research output management (including data, and other outputs) in line with the FAIR (Findable, Accessible, Interoperable, and Reusable) principles [2, 3]. The EU Pollinator Hub (EUPH), a platform commissioned by the European Food Safety Authority (EFSA) and currently developed and operated by the PollinERA consortium member BeeLife European Beekeeping Coordination, has been designed to facilitate sharing of research data in compliance with the Open Science policy and will be used as primary data repository by the PollinERA consortium.

This document is part of WP7. As provided for in the Grant Agreement, a first revision will be produced in month 36 and a final version in month 48 of the project. It is accompanied by the Data Management Protocol, an open protocol about the DMP delivered, which was completed in month 6. The protocol establishes the data governance framework for the PollinERA project and will be updated as needed throughout the project's duration.

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1.2 Summary

Section 2 (*Data Summary*) contains a description of the data to be generated and re-used during the PollinERA project (type, format, size, origin, purpose), its relation to the objectives of the project and its usefulness outside the project.

Section 3 (*FAIR Data*) contains information on the implementation of FAIR principles on data and metadata generated in the PollinERA project.

Section 4 (*Other research outputs*) contains information on the management of other research outputs that will be generated or re-used throughout the PollinERA projects, in particular software, models and protocols in line with FAIR principles.

Section 5 (*Allocation of resources*) provides estimates on the costs and their coverage for making data or other research outputs FAIR in the PollinERA project, describes responsibilities and accountabilities within the PollinERA project and regulates long term preservation of data.

Section 6 (*Data security*) summarises the provisions for data security including data recovery as well as secure storage/archiving and transfer of sensitive data.

Section 7 (*Ethics*) addresses potential ethics or legal issues that can have an impact on data sharing.

Section 8 (*Other issues*) contains a list of other national departmental procedures for data management.

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1.3 List of abbreviations

ALMaSS	Animal, Landscape and Man Simulation System
API	Application Programming Interface
CC0 1.0	Creative Commons 1.0 Universal licence
CC-BY 4.0	Creative Commons Attribution 4.0 International licence
CSL	Citation Style Language
CSV	Comma-Separated Values
DM	Data Management
DMP	Data Management Plan
DPO	Data Protection Officer
EC	European Commission
EFSA	European Food Safety Authority
ERA	Environmental Risk Assessment
EU	European Union
EUPH	EU Pollinator Hub
FAIR	Findable, Accessible, Interoperable, Reusable
GDPR	Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)
HTTPS	Hypertext Transfer Protocol Secure
IACS	Integrated Administration and Control System
INC-PAS	Polish Academy of Sciences, Institute of Nature Conservation
ISO	International Organization for Standardization
JSON	JavaScript Object Notation
LPIS	Land Parcel Identification System
MD	Markdown
NUTS	Nomenclature of Territorial Units for Statistics
OSI	Open-Source Initiative
PollinERA	Understanding pesticide-Pollinator interactions to support EU Environmental Risk Assessment and policy
PollSPEAR	Pollinator species at risk
PPCoMS	Pesticide and pollinator co-monitoring scheme
PPDB	Pesticide Property Database
QSAR	Quantitative Structure-Activity Relationship
RAID	Redundant Array of Inexpensive Disks
REA	European Research Executive Agency
RDF	Resource Description Framework
SI	International System of Units
SLU	Swedish University of Agricultural Sciences
SMILES	Simplified Molecular Input Line Entry System
SO	Specific Objective
SOP	Standard Operating Procedure
TKTD	Toxicokinetic-Toxicodynamic
TWC _{mix}	Toxicity Weighed Concentration of a pesticide mixture

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UID	Unique Identifier
UJAG	Jagiellonian University
ULUND	Lund University
UNIBO	Bologna University
UPN	User Principal Name
URL	Uniform Resource Locator
VEGA	Virtual models for property Evaluation of chemicals within a Global Architecture
WI	Work Instruction
WildPosh	Pan-European Assessment, Monitoring, and Mitigation of Chemical Stressors on the Health of Wild Pollinators
WP	Work Package
XML	Extensible Markup Language

1.4 Related documents

1.4.1 PollinERA consortium

- PollinERA Grant Agreement. 2023-11-17.
- PollinERA Consortium Agreement. 2024-02-02. Final version.
- M30 An open protocol about the DMP delivered, in its current version.

1.4.2 EU Pollinator Hub

- [SOP 003 DR instructions](#) [4]
- [SOP 004 Organisation chart](#) [5]
- [SOP 006 Dataset preparation](#) [6]
- [SOP 007 Dataset preparation](#) [7]
- [SOP 008 Data cleansing](#) [8]
- [SOP 010 Data governance](#) [1]
- [SOP 012 Data standardisation](#) [9]
- [SOP 015 Peer reviewing](#) [10]
- [SOP 017 Dataset integration](#) [11]
- [SOP 024 Obsolescence of links](#) [12]

1.4.3 European Union

- [Open Science](#) [2]
- [Open Science in Horizon Europe](#) [3]
- [Open Research Europe Policies](#) [13]
- [Open Data, Software and Code Guidelines](#) [14]
- [The general data protection regulation](#) [15]

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1.5 Business glossary

AENEAS. The ongoing project “Advancing ERA of non-target arthropods for PPPs” funded by the European Food Safety Authority (EFSA).

BeeXML. Working standard for collection and management of bee and beekeeper data.

Data archiving. Long-term storage of data in a repository during and after the end of the project, which guarantees utilisation in accordance with *FAIR principles*.

Data backup. Storage of a copy of data, which allows the recovery of the original data by the owner if the original data is lost or damaged.

Data Manager. The person responsible for the development implementation of the Data Management Plan (DMP), as defined in task 7.d (Data Management Plan) of the PollinERA project.

Data Stakeholder. Any person who uses, influences or is affected by data within the PollinERA consortium. This includes upstream producers, gatherers and acquirers of data, downstream consumers of data and persons who manage, convert or store data.

FAIR Principles. Principles published in 2016 under the title ‘The FAIR Guiding Principles for scientific data management and stewardship’ in the journal *Scientific Data* [12]. The authors intended to provide guidelines to improve the Findability, Accessibility, Interoperability, and Reuse of digital assets.

Granting authority. The European Research Executive Agency (REA) under the powers delegated by the European Commission.

IPol-ERA. The project “Development of roadmap for advancing the environmental risk assessment of chemical pesticides for insect pollinators”, finalised in 2023 funded by the European Food Safety Authority (EFSA, OC/EFSA/ED/2021/01-LOT1).

Open Data Policy. Policy of the granting authority, relating to all data underlying the results of research articles, together with any information needed to replicate, validate, and/or reuse the results/studies and analysis of the data (including details of software, instrument or other tool used to process results and, where relevant, the raw data), which is generated by individuals (including permanent and non-permanent staff members, students, contractors) working for the PollinERA consortium within the scope of the project.

Participants. Following the definition of the Grant Agreement, Participants are entities participating in the action as beneficiaries (Table 1), affiliated entities, associated partners, third parties giving in-kind contributions, subcontractors or recipients of financial support to third parties.

Personal data. Data that meet the definition in Article 4 (1) of Regulation (EU) 2016/679: “any information relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person”.

PollinERA. The project “Understanding pesticide-pollinator interactions to support EU Environmental risk assessment and policy” sponsored by EC REA (Grant Agreement 10135005) under the call Biodiversity and ecosystem services (HORIZON-CL6-2023-BIODIV-01-1).

PollinERA consortium. All Participants of the project PollinERA.

PoshBee. The project “Pan-European assessment, monitoring and migration of stressors on the health of bees”, finalised in 2023 funded by the EU Horizon 2020 research and innovation programme (Grant Agreement 773921).

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SharePoint. The common repository for files used by the PollinERA consortium linked in the SharePoint site (“HE PollinERA”) of the PollinERA Microsoft Teams application.

WildPosh. The project “Pan-European Assessment, Monitoring, and Mitigation of Chemical Stressors on the Health of Wild Pollinators” (Grant Agreement 101135238), sponsored by EC REA under the same call as PollinERA.

WildPosh consortium. All Participants of the project WildPosh.

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2 Data Summary

This section contains a description of the data to be generated and re-used during the PollinERA project (type, format, size, origin, purpose), its relation to the objectives of the project and its usefulness outside the project.

2.1 Objectives of the project

PollinERA aims to reverse pollinator population declines and reduce the harmful impacts of pesticides. It addresses the call through four objectives:

- Filling ecotoxicological data gaps to enable realistic prediction of the source and routes of exposure and impact of pesticides on pollinators and their sensitivity to individual pesticides and mixtures.
- Developing and testing a co-monitoring scheme for pesticides and pollinators across European cropping systems and landscapes, developing risk indicators and mixture exposure information.
- Developing models for predicting pesticide toxicological effects on pollinators for chemicals and organisms, environmental fate, toxicokinetic/toxicodynamic, and population models.
- Developing a population-level systems-based approach to risk and policy assessment considering multiple stressors and long-term spatiotemporal dynamics at the landscape scale and generating an open database for pollinator/pesticide data and tools.

2.2 Data pipeline

As required in the Data Management Protocol, a complete list of data, including a detailed description (type, format, purpose, origin, size) of the data generated or re-used during the course of the project is maintained in the Data Catalogue, a document which is an integral part of the DMP and accessible to all participants in the folder *07. Data management plan* of the SharePoint.

In addition to data collected as part of the PollinERA research program, data from literature and data from other research projects (e.g. WildPosh) will be obtained by the Data Stakeholders. The total amount of data collected and archived during the project cannot be quantified at present with sufficient accuracy but is expected to be in the range of 4-5 TB.

2.2.1 Data collection

For the development of toxicological testing protocols (ecotoxicological data), as defined in Specific Objective (SO) 1 in the Grant Agreement, in addition to data acquired during the PollinERA project, data will be obtained from literature and finalised projects (e.g. IPol-ERA, PoshBee), in which some of the Participants were involved. Data acquired during the project includes:

- Analyses of pollinator relevant matrices (pollen, nectar, water, plant, soil) in Italy (UNIBO), Poland (UJAG, INC-PAS) and Sweden (ULUND) and screening of pesticide concentrations (SLU);
- Screening of pollinator species for sensitivity to pesticides and specific biological traits of collected pollinator species (UJAG, INC-PAS, UNIBO, ULUND);

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- Interactive effects of pesticides on different pollinator species and their live stages;
- Laboratory tests on mortality, fecundity, development time, phototactic behaviour and respiration rates upon sublethal and chronic exposure of pollinator species to single and combined pesticide treatments.

Data collected as part of SO1 will be archived on the EUPH.

For the development of pesticide and pollinator co-monitoring schemes (PPCoMS), as defined in SO2 in the Grant Agreement, the following data will be collected and generated:

- Occurrence (species, abundance) and pesticide residue analyses of plant and pollinator species on monitoring sites (UNIBO, UJAG, INC-PAS, ULUND), the location of which are obtained from ALMaSS landscape simulation;
- Pesticide risk indicators for pollinators (TWC_{mix}, PollSPEAR).

2.2.2 Re-use of data

Data obtained from the development of toxicological testing protocols, as defined in SO1 in the Grant Agreement, will be used by various participants. Ecotoxicological data such as the frequency and magnitude of exposure as well as interactive and sublethal effects of pesticides applied in mixtures or foraged concurrently in the landscape on pollinators will be used in the development of the ERA framework (SO4). Data on pesticide residue levels in pollinator relevant matrices and combined and sublethal effects of pesticides on selected pollinators will be used in pesticide risk indicator development for pollinators (SO2), toxicokinetic-toxicodynamic (TKTD) modelling (SO3) and ALMaSS modelling (SO4).

Data obtained from the development of PPCoMS prototypes and protocols, as defined in SO2 in the Grant Agreement, will be used for the development of toxicological testing protocols (SO1), for the ERA framework (SO4) and for agent-based population modelling (SO3). For the development of pollinator pesticide risk indicators (SO2), data from literature will be complemented with pollinator exposure, sensitivity and trait information from the development of toxicological testing protocols (SO1), and from *in silico* models (SO3). Data for site selection will be obtained from an ALMaSS landscape simulation (SO4).

The *in silico* quantitative structure-activity relationship (QSAR) models, as defined in SO3 in the Grant Agreement, will (re-)use existing toxicity data, structural alerts and physico-chemical properties of compounds (*e.g.* SMILES data), data on toxicological properties of pesticides (PPDB, OpenFoodTox), relevant parameters (*e.g.* overall structural chemical similarity, presence of relevant molecular groups, physico-chemical and toxicological similarity) from similar, non-target chemical compounds as well as data from predictive models (*e.g.* VEGA) in addition to TK inputs from data obtained from the development of toxicological testing protocols (SO1). Data obtained from the QSAR models will be used in the ERA framework (SO4).

The terrestrial TKTD models, as defined in SO3 in the Grant Agreement, will re-use information from the AENEAS project and data obtained from the development of toxicological testing protocols (SO1). Data obtained from TKTD model will be used in the ERA framework (SO4).

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The agent-based population models for key non-bee pollinator groups, as defined in SO3 in the Grant Agreement, will use data on background exposures to pesticides and other stressors from data obtained in the development of PPCoMS (SO2).

The ERA framework, as defined in SO4 in the Grant Agreement uses data from detailed topographic databases, IACS/LPIS data, agricultural register of crops cultivated in reference parcels and anonymised information on parcel owners, in addition to data from all other participants: data from environmental and analysis collected for the development of the PPCoMS (SO2), data from existing models for environmental degradation products obtained from Janus software available from VEGA Hub (SO3) and from data on cumulative assessment groups of chemical compounds (SO3).

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3 FAIR Data

This section contains information on the implementation of FAIR principles on data and metadata generated in the PollinERA project. The EU Pollinator Hub (EUPH), a platform commissioned by the European Food Safety Authority (EFSA) and currently operated by the PollinERA consortium member BeeLife European Beekeeping Coordination, has been designed to allow archiving of data in compliance with FAIR principles. FAIR principles will be implemented according to the Data Governance Framework of the EU Pollinator Hub, as described in the [publicly accessible](#) EU Pollinator Hub SOP 010 (*Data governance*) [1].

3.1 Making data findable, including provisions for metadata

Data and Metadata will be archived on the EU Pollinator Hub (EUPH), where publicly available datasets and their constituents (tables and columns) as well as structured metadata files are by default assigned a globally unique and persistent identifier (UID). Global uniqueness and persistence are ensured by combining the URL of the EU Pollinator Hub (<https://app.pollinatorhub.eu/dataset-discovery/>) – which by default is globally unique – followed by a unique identifier generated by the system. This URL resolves to the dataset and all its constituents (table, column descriptor) through the freely accessible and standardised hypertext transfer protocol secure (HTTPS).

During the upload process of a dataset to the EU Pollinator Hub collects both structured and unstructured metadata, some of which aims to facilitate the discovery of datasets (see section 3.1.1).

3.1.1 Structured Metadata

Structured metadata comprises the following information.

- a. Structured metadata currently used for data discovery on the EU Pollinator Hub
 - (I) A free name of a dataset containing no more than 30 characters.
 - (II) A free title of a dataset containing no more than 256 characters.
 - (III) A free description of datasets containing no more than 100 words.
 - (IV) The licence under which the data is published (either at the level of the dataset or at the level of the tables contained in the dataset).
 - (V) A – theoretically – unlimited amount of freely selectable keywords describing the dataset.
 - (VI) The calendar years covered by the data in the dataset.
 - (VII) The regions (currently countries) covered by the data in the dataset.
 - (VIII) The publishing data of the dataset.
 - (IX) A version number (release and revision) of the dataset.
- b. Structured metadata currently not used for data discovery on the EU Pollinator Hub
 - (I) A featured image of describing the dataset.
 - (II) A free description of the data table and columns.
 - (III) A free name of tables contained in a dataset.
 - (IV) A free name of the columns contained in a table.
 - (V) A free description of tables contained in the dataset containing no more than 100 words.

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- (VI) A free description of columns contained in the tables containing no more than 100 words.
- (VII) A standardised description of columns (if global descriptors are used) including a standardised definition as well as a name in a – theoretically – unlimited number of languages.
- (VIII) The standardised unit in which data in a column is expressed.
- (IX) A name and contact information of the data provider and the individual collaborators of the data provider.
- (X) The data source (static files, continuous input acquired via an API or surveys)
- (XI) One or more publications to which a dataset refers.
- (XII) A structured classification of data in datasets in terms of analytical capacities required to analyse the data as well as regulatory and technical standards applied for data acquisition and processing.
- (XIII) A structured classification in terms of usefulness of a dataset to users (publicly accessible dataset ratings, viewing and download statistics).

As briefly mentioned in paragraph a(IV) of section 3.1.1, search keywords are an integral part of the structured metadata collected during the provision of datasets on the EU Pollinator Hub. They can be searched for in the data discovery module of the EU Pollinator Hub.

Metadata related to a dataset and all tables contained in a dataset as well as all columns contained in a table are automatically generated by the EU Pollinator Hub in the generally accessible comma-separated value (CSV) or (Markdown) MD format based on the structured metadata provided by the data provider.

General information on a dataset such as name (a(I)), title (a(II)) and description (a(III)) of the dataset, dataset UID as well as the licence name (a(IV)), a summary of the licence information and a link to the complete licence information are available in a standardised and indexable file in MD format, which can be manually downloaded from the publicly accessible user interface of the EU Pollinator Hub.

Metadata provided for each table contained in a dataset such as table name (b(III)) table UID, licence (a(IV)), data source (b(X)) and description (b(V)) as well as metadata provided for each column in a table such as column name (b(IV)), data type, UID of the standardised descriptor of a column (b(VII)), unit (b(VIII)) and column description (b(VI)) is provided in a standardised and indexable file in CSV format, which can be manually downloaded from the publicly accessible user interface of the EU Pollinator Hub.

The remaining metadata such as the citation of the dataset, the name and contact information of the data provider, dataset rating by users, analytical capacities required to analyse the dataset, regulatory and technical standards applied to the collection of the data, dataset use metrics as well as structural information on tables (columns, rows, data points) can be obtained from the user interface of the EU Pollinator Hub.

3.1.2 Unstructured Metadata

Documents containing unstructured metadata (e.g. protocols, methods) will be provided as part of the dataset in a format that is readable with freely available software products.

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3.1.3 Metadata standards

In addition to structured metadata collected by the EU Pollinator Hub, standards followed by the data providers to acquire and process data shall be included as part structured classification system of datasets, as mentioned in paragraph b (XII) of section 3.1.1. The information can be obtained from the publicly accessible user interface of the EU Pollinator Hub.

The following general standards will be used:

- ISO 3166-1 alpha-2 country codes as acronyms for countries.
- The nomenclature of territorial units for statistics (NUTS) for administrative divisions of countries.
- The international system of units (SI) for physical units.

3.2 Making data accessible

3.2.1 Repository

Data and metadata will be archived in the EU Pollinator Hub (EUPH), a platform commissioned by the European Food Safety Authority (EFSA) and currently operated by the PollinERA consortium member BeeLife European Beekeeping Coordination. The EUPH has been designed to meet all requirements of the FAIR Guiding Principles for scientific data management and stewardship ensuring findability, accessibility, interoperability, and reuse of digital assets. The software and all documents related to the operation of the hub are open source and publicly available. In addition, the Data Manager of the PollinERA consortium has the role of platform manager, as defined by the [publicly accessible](#) EU Pollinator Hub SOP 004 (*Organisation chart*) [5].

3.2.2 Data

Embargos on the publication data of data archived on the EU Pollinator Hub may be set by the data provider, which will be in accordance with the Open Data Policy (“as open as possible, as closed as necessary”). Currently no necessity for an embargo could be identified among the consortium members.

In all cases in which restrictions apply to the availability of the data all necessary information required to access the data by the same means as the Data Stakeholder will be provided by the Data Stakeholder in the Dataset Report of the dataset. If possible, intermediary data that can be shared legally will be made available by the Data Stakeholder. In addition, efforts will be made to provide publicly available data that is representative of the analysed dataset and that can be used to apply the methodology described for the analysis of data for which restrictions apply. The following datasets will not be published:

- Agricultural land use data is obtained from databases, which contain information on CAP subsidies. These databases contain personal data and may therefore not be published for data protection reasons. All necessary information required to access the data by the same means as the Data Stakeholder shall be provided.
- Agricultural land management data, if it should be collected, contains personal data and will therefore not be published for data protection reasons.

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- Parameter fitting data, which is obtained from external providers will not be published if opening their data goes against their legitimate interests of the external provider and if the external data provider does not agree with its publication.
- Raw data obtained from Pesticide Properties Database (PPDB) with a chargeable licence may not be published.
- Personal data collected in the course of correspondence or subscription to the newsletter will also not be published for data protection reasons.

3.2.3 Metadata

On the EU Pollinator Hub, metadata can only be published as part of a dataset part (table) and will therefore receive the same licence as the data to which it belongs. As pointed out in section 3.4, for data and metadata covered by the Open Data Policy of the granting authority, the Creative Commons Attribution 4.0 International ([CC-BY 4.0](#)) shall be preferably used by Data Stakeholders.

In accordance with FAIR principles, structured metadata belonging to archived datasets published on the EU Pollinator Hub will remain accessible, even if a dataset has been deleted. Structured metadata elements that represent personal data within the meaning of the GDPR will, however, be removed to assure GDPR compliance.

In addition, all protocols developed will be described on the PollinERA website.

3.3 Making data interoperable

The EU Pollinator Hub allows to create both dataset specific and global ontologies, including a mapping of dataset-specific and global vocabulary based on the resource description framework (RDF). Creation, refining and extension of the global ontology is a publicly accessible and traceable process managed by domain experts. The publicly available global ontology has been built with the aim of providing a commonly accepted definition for data elements, including standardised references to authoritative sources, translation to an unlimited number of languages, and – where applicable – accepted and standardised units, ensuring interoperability and exchange of the data within and across disciplines.

Each dataset and their constituents (tables and data elements) may include qualified references to other datasets. Data elements of different tables and datasets of the same or different data providers may be referenced by so-called descriptors, which are standardised definitions of data that make use of the ontologies mentioned before.

The EU Pollinator Hub currently provides data in CSV format. In addition, data export in JSON and BeeXML, an XML data format that is currently being developed in collaboration with the Apimondia working group on *Standardization of data on bees and beekeeping* [16, 17, 18], will become available in the future. CSV can be read with a variety of free and open-source software products, including text editors, spreadsheets, database management systems and statistical software.

The EU Pollinator Hub provides both the software application ([dictionary module](#)) as well as the necessary publicly accessible [standard operating procedures \(SOP\) and work instructions](#).

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[\(WI\)](#) (in particular SOP 012 (*Data standardisation*) [9] and WI referenced therein) for this process.

The Data Manager of the PollinERA project is responsible for the process of standardisation of archived data and metadata.

3.4 Increase data re-use

Data archiving on the EUPH, a process that will be accompanied by the Data Manager of the PollinERA project, will be performed according to data governance framework of the EU Pollinator Hub, as described in the [publicly accessible](#) EU Pollinator Hub SOP 010 (*Data governance*) [1]. This process aims at assuring a high degree of data quality and traceability.

Process traceability involves the drafting of a publicly available standardised dataset report, as described in the [publicly accessible](#) EU Pollinator Hub SOP 003 (*DR instructions*) [4]. Dataset reports must contain a complete description of the entire process of acquisition, preparation, validation and structural analysis of data and, if applicable, metadata as well as all necessary definitions of data elements, including units of measurement and data standards applied. It is an integral part of a dataset's metadata.

Moreover, a potentially unlimited number metadata files may be added to a dataset. Documents such as protocols and methods describing the process of data acquisition, if available, will be added to the dataset in a format that is readable with freely available software products.

The process of data quality assurance involves all process described by the [publicly accessible](#) EU Pollinator Hub SOP 006 (*Dataset preparation*) [6], SOP 007 (*Data profiling*) [7], SOP 008 (*Data cleansing*) [8] and SOP 012 (*Data standardisation*) [9]. Briefly, SOP 006 describes the process from arrival of a dataset (malware, readability and face validity check) via registration of the transmitted files to their preparation for profiling. SOP 007 describes the process of data profiling (structural analysis, content analysis), identification of duplicate records and the documentation of this process in the dataset report. SOP describes the process of data cleansing, including the detection and reporting of inconsistencies to the data provider and the resolution of inconsistencies and the documentation of this process in the dataset report.

For data and metadata covered by the Open Data Policy of the granting authority, the Creative Commons Attribution 4.0 International ([CC-BY 4.0](#)) will be preferably used by Data Stakeholders for the publication of datasets, as they require attribution of the authors. Briefly, datasets (containing data and metadata) published under this licence may be copied and redistributed in any medium or format for any purpose, even commercially. Data may be transformed, and built upon for any purpose, even commercially. The user of the dataset must, however, give appropriate credit, provide a link to the license, and indicate if changes were made [19]. Alternatively, the Creative Commons 1.0 Universal ([CC0 1.0](#)) licences may be used by Data Stakeholders for the publication of datasets. Briefly, datasets published under this licence are dedicated to the public domain by waiving all rights to the work worldwide under copyright law, including all related and neighbouring rights, to the extent allowed by law. Data may be copied, modified and distributed, even for commercial purposes, all without asking permission or crediting the creator(s) of the dataset [20]. For licencing of data and

D7.1 Data Management Plan V 1.3

metadata archived on the publicly accessible EU Pollinator Hub, SOP 017 (Dataset integration) [11] and the respective Work Instructions (WI) must be followed.

On the EU Pollinator Hub, references, which are part of structured metadata, are stored in a standardised format (currently CSL JSON format), which can be created by the free and open-source software product [Zotero](#). Besides, each dataset provides standardised authorship details for the citation of the dataset. Upon request to the EUPH platform manager, external links may be added into a directory, which is periodically checked for obsolescence, as described in the [publicly accessible](#) EU Pollinator Hub SOP 024 (*Obsolescence of links*) [12].

All datasets archived and published on the EU Pollinator Hub will eventually be available to third parties without restriction for an indefinite period, also after the end of the project.

4 Other research outputs

This section contains information on the management of other research outputs that will be generated or re-used throughout the PollinERA projects, in particular software, models and protocols in line with FAIR principles.

- Toxicological testing protocols are being developed as part of SO1 of the Grant Agreement for pesticide mixture testing, for the development of strategies to identify key mixtures to create data for TKTD models and for the detection of sublethal effects of pesticides in various insect species (bees, hoverflies, butterflies, moths). Protocols drawn up as part of the project will be archived as part of the data records relating to them. Besides, all protocols developed will be described on the PollinERA website.
- Pesticide and pollinator co-monitoring scheme (PPCoMS) prototypes and protocols are being developed as part of SO2 of the Grant Agreement. These co-monitoring schemes will be made available through the EU Pollinator Hub. Besides, all protocols developed will be described on the PollinERA website.
- Open source *in silico* quantitative structure-activity relationship (QSAR) models for predicting toxicological effects (uncertainty, mode of action, mixture effects) and classifying pesticides and their degradation products are being developed as part of SO3 of the Grant Agreement. These models will be included on the VEGA Hub and the EFSA Knowledge Junction.
- Generalised terrestrial toxicokinetic-toxicodynamic (TKTD) models for key pollinator taxa are being developed as part of SO3 of the Grant Agreement, integrating multiple exposure pathways and predicting effects on survival and possible sublethal endpoints.
- Openly available agent-based population models for key non-bee pollinator groups, embedded in a dynamic landscape simulation are being developed a part of SO3 of the Grant Agreement, exploiting the existing ALMaSS species model and including TKTD models.
- An environmental risk assessment (ERA) framework, integrating landscape simulation, population models and toxicological models, is being developed as part of SO4 of the Grant Agreement using the existing ALMaSS framework, an open-source open-science project hosted on GitLab. The software of the framework and the prototype user interface of the simulation package for risk managers and assessors will be made available through GitLab. Data underlying the case studies produced with the framework will be made available through the EU Pollinator Hub.

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Software and source code covered by the Open Data Policy of the granting authority shall be published with an Open Source Initiative ([OSI](#)) Approved Licence [21] by Data Stakeholders. All program code will be available as open-source on the [GitLab](#) repository (<https://gitlab.com>). Models relating biological, environmental, and physical-chem properties of chemical substances to their structure will be published on [VEGA Hub](#) (<https://www.vegahub.eu>) and full documentation of all models will be provided in an easy to navigate format.

5 Allocation of resources

This section provides estimates on the costs and their coverage for making data or other research outputs FAIR in the PollinERA project, describes responsibilities and accountabilities within the PollinERA project and regulates long term preservation of data.

The direct costs for archiving and long-term preservation of the data (operating costs in connection with the hosting provider of the web service, software maintenance) from the PollinERA project in accordance with the FAIR principles are currently covered by the platform operator, EFSA. Datasets whose size exceeds the storage capacity of the EU Pollinator Hub will be stored on the freely accessible EU Open ResearchRepository [Zenodo](#) and will be referenced appropriately by the EU Pollinator Hub. Zenodo is supported by the European Commission and compliant with the open science requirements.

All activities related to data management from data preparation to archiving of the data according to the FAIR principles will be performed or supported by the Data Manager of the PollinERA project and costs are therefore covered by the PollinERA grant.

The minimum duration of archiving is based on the requirements in the Grant Agreement, which stipulates maximum standard time limit of 5 years after final payment (Point 6 of the Data Sheet of the PollinERA Grant Agreement). Beyond this period the data providers (the consortium members) will be able to decide for themselves whether they wish to continue archiving the data records in question.

6 Data security

This section summarises the provisions for data security including data recovery as well as secure storage/archiving and transfer of sensitive data.

For data security (including data recovery as well as secure storage/archiving and transfer of data) Participants follow the research data management policies of their respective institutions. As defined in the Data Management Protocol, these regulations are collected and published by the Data Manager in the Storage Directory.

Sensitive data within the meaning of the GDPR is not processed in the project. If datasets are processed that could directly or indirectly contain personal data, the Data Protection Officer will carry out a data protection impact assessment as provided for in the Data Management Protocol and take appropriate precautions to ensure that the data is processed in compliance with the GDPR.

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Data security at the EU Pollinator Hub is guaranteed by a number of measures. The hosting provider is based in the EU, ISO 9001 certified and guarantees continuous physical and technical protection of the server. The server is located within a fully climate-controlled environment, including active fire protection services and restricted entry to authorised personnel. The server is a dedicated virtual server with physical hardware backups, hot-pluggable hard drives within RAID 5 or 6 arrays, a dedicated UPN system with backup generators for continuous operation and it has documented disposal of hardware. All data is encrypted with a private key (which involves protection from physical access), replicated internally every day and saved twice per week to an external server for backup. In accordance with good practices in action traceability, changes within the EU Pollinator Hub are tracked for auditing reasons. Login attempts are stored within the platform file system, accessible to system administrators only. Any changes to user authentication data, profiles, metadata, static content, user roles and permissions are logged and accessible within the management console to platform managers.

7 Ethics

This section addresses potential ethics or legal issues that can have an impact on data sharing.

PollinERA studies interactions between pesticides and invertebrate pollinators. Therefore, no sensitive data within the meaning of the GDPR is processed and, hence, neither ethic nor legal issues exist that could have an impact on data sharing.

The processing or disclosure of personal data by members of the consortium is carried out on the basis of the corresponding provisions in the GDPR with the express consent of the data subjects.

The data policy for the use of the consortium's website (<https://pollinera-horizon.eu>), including the subscription to the newsletter, is published in the website's Privacy Policy page.

For personal data collected in the course of research activities, a standard consent form is provided in the languages of potential data subjects. In this form, the data subjects are informed about

- the name of the organisation processing the data,
- the purpose for which the data is processed,
- the data to be processed,
- the contact information of the Data Protection Officer, who acts as contact point for any concern of a data subject regarding the processing of its personal data collected within the scope of this consent,
- the fact that data may be shared with other members of the project and
- that fact that it may be necessary to store data for a period of up to 10 years.

The period of up to 10 years results from the duration of the project (4 years), the maximum standard time limit after final payment as specified in Point 6 of the Data Sheet of the PollinERA Grant Agreement (5 years) and the deadline for the final payment, as specified in Point 4.2 of the Data Sheet (150 days after the final report).

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8 Other issues

This section contains a list of other national departmental procedures for data management.

For all processes related to data management outside the EU Pollinator Hub, participants are required to follow the research data management policies their respective institutions. As defined in the Data Management Protocol, these regulations are collected and published by the Data Manager in the file *Data Management Policy Directory.xlsx* of the folder *07. Data management plan* in the PollinERA SharePoint. It is an integral part of the DMP.

D7.1 Data Management Plan V 1.3

9 References

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D7.1 Data Management Plan V 1.3

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www.pollinera-horizon.eu

Project partners



D7.1 Data Management Plan V 1.3

Annex

- *Data Management Policy Directory.xlsx* in its current version, available in the folder 07. *Data management plan* of the PollinERA SharePoint.
- *Data Catalogue V_._.pdf* in its current version, available in the folder 07. *Data management plan* of the PollinERA SharePoint.

Organisation	Department	URL	Document type	Data management and safety policy			Comment
				Document name	Document location	Document type	
AU		https://medarbejdere.au.dk/en/research-data-management/	Website	n.a.	n.a.	Research Data Management	
UJAG							no information provided
ULUND		https://www.staff.lu.se/research-and-education/research-support/supp	Website	n.a.	n.a.	Research Data Management	
UNIBO		https://www.unibo.it/en/research/open-science/university-guidelines-fo	Website	n.a.	n.a.	Research Data Management	
UOS		https://www.ub.uni-osnabrueck.de/forschen/publizieren/forschungsdat	Website	n.a.	n.a.	Research Data Management	
INC-PAS							No specific data management policy within the organisation
IRFMN							no information provided
BEBC		https://app.pollinatorhub.eu/pages/sop-directory	Document	SOP 010 Data gover	https://app.pollinatorh	Standard Operating Procedure	Implementation of a data governance framework on the EU Pollinator Hub
SLU		https://www.slu.se/en/subweb/library/publish-and-analyse/archiving-ar	Website	n.a.	n.a.	Research Data Managment	
KemI							no information provided
PEN			Document	PollinERA_Privacy p	SharePoint/07. Data m	Website privacy policy	No specific data management policy within the organisation
ZIP							No data safety policy within the organisation



Data Catalogue

29/08/2024

Author/s: Michael Rubinigg



Funded by
the European Union

Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the EU nor the EC can be held responsible for them.

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Prepared under contract from the European Commission

Grant agreement No. 101135005

EU Horizon Europe Research and Innovation Action

Project acronym:	PollinERA
Project full title:	Understanding pesticide-Pollinator interactions to support EU Environmental Risk Assessment and policy
Project duration:	01.01.2024 – 31.12.2027 (48 months)
Project coordinator:	Prof. Christopher John Topping, Aarhus University (AU)
Call:	HORIZON-CL6-2023-BIODIV-01-1
Deliverable title:	Data Catalogue (DC)
Deliverable n°:	D7.1
WP responsible:	WP7
Type of the deliverable:	Annex to report
Dissemination level:	PU – Public
Lead beneficiary:	BeeLife European Beekeeping Coordination (BEBC)
Due date of deliverable:	M9
Actual submission date:	03.09.2024

Deliverable status:

Version	Status	Date	Author(s)
1.0	Draft	03.09.2024	Michael Rubinigg
1.1	Draft	11.09.2024	Michael Rubinigg

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4.1 Data	Error! Bookmark not defined.

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1 Specifications

1.1 Metadata Terms

Variable	Description	Example
amount	Approximate amount of data (data points and/or rows) generated/required.	500-1000 rows; app. 200 Mio. data points
contact	Name of contact person.	
dataset_label	Name of dataset.	
dataset_method	(A list of) document(s) to be prepared or reference(s) to attached document(s) or to online resource(s) containing general information on material and methods used for data acquisition and/or processing (if applicable).	monitoring schemes; analytical protocols; toxicological protocols; validation reports for analytical methods; qualification/requalification reports for analytical instruments; other documents
dataset_other	Other dataset-related information.	
dataset_standard	(A list of) reference(s) to attached document(s) or to online resource(s) containing general quality standards applied to data acquisition and processing within the dataset (if applicable).	OECD Principles on Good Laboratory Practice; 10.2903/sp.efsa.2017.EN-1234
datatype	Data type in which a variable is provided/required.	integer; boolean; real; string; array
data_label	Name of the variable.	item; pesticide; time; LD50
data_other	Other information related to the variable.	
description	Concise description of the variable (if not self-explanatory for domain experts)	
encoding	Encoding (if considered necessary to be specified).	UTF-8
expected	Order of magnitude of values in which the variable will be provided/required (if applicable).	range; minimum/maximum; Q1/Q3; median; mode; regular expressions such as a-zA-Z0-9
fileformat	Format of the file(s) in which the dataset will be provided/required (if considered necessary to be specified).	XLSX, CSV, FASTA
frequency	Frequency of data acquisition (if applicable).	daily; measured at 0, 2, 4, 8 hours
institution	Acronym of the institution responsible for providing or receiving data	
matrix	Matrix (chemical, biological) in which the variable is measured or for which it is reported (if applicable).	animal; water; pollen; Osmia bicornis
method	(A list of) document(s) to be prepared or reference(s) to attached document(s) or to online resource(s) containing specific information on the method(s) used for data acquisition/sample analysis (if applicable).	in-house-method; ELISA; LC-MS/MS; BIOR LVS EN 15662:2018 (HPLC-MS/MS); BIOR LVS EN 15662:2018 (GC-MS/MS); reference to an attached certificate of analysis or a list with the methods
overall_other	Other information	
overall_quality	Overall requirements in terms of accuracy, precision sample size (if applicable)	
overall_standard	General quality standards applied to be applied to data acquisition and processing (if applicable)	
precision	Required precision (if considered necessary to be specified)	± 0.001
purpose	Concise description of the purpose for which the variable will be used (if considered necessary to be specified)	TKTD; ALMaSS landscape modelling
quality_parameter	(A list containing the) quality parameter(s) to be supplied with the data (if applicable).	LLOQ; LOD, decision limit (CC α), detection capacity (CC β), measurement uncertainty (MU)
quality_value	(A list containing the) value of the quality parameter(s) to be supplied with the data (if applicable).	0.01 mg kg ⁻¹ ; reference to an attached certificate of analysis or a list with the parameters and their values
software	Type of software used to collect the data in the dataset (if considered necessary to be specified).	MS Excel; LibreOffice Calc
source	Acronym of the consortium partner (if considered necessary to be specified) who should provide the data	UNIBO, ULUND, UJAG

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Variable	Description	Example
standard	(A list containing the) standards with which the variable complies (if applicable).	EPSG:4326; ISO 3166; CAS Registry Number; EFSA harmonized terminology for scientific research; Regulation (EU) 2017/269; EN 15662:2018-07); reference to an attached certificate of analysis or a list with the standards
timeline	Approximate and realistic time frame for the availability of the dataset.	M3; M28-30
unit	(A list containing the) unit(s) in which the variable is reported (if applicable).	µg g ⁻¹ ; mg kg ⁻¹ ; reference to an attached certificate of analysis

1.2 Data Stakeholders

Institution/Aggregate	Contact	Comment
AU	James Henty Williams	
UJAG	Ryszard Laskowski	no information available
ULUND	Maj Rundlöf	
UNIBO	Fabio Sgolastra	no information available
UOS	Florian Schunck	
INC-PAS	Agnieszka Bednarska	no information available
IRFMN		no information available
BEBC	Michael Rubinigg	
SLU	Alina Koch	
KemI		no information available
PEN	Teodor Metodiev	
ZIP	Gregor Sušanj	

1.3 List of abbreviations

app.	approximately
n.a.	not applicable
n.s.	not specified

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2 Datasets

2.1 Data providers

2.1.1 UOS

UOS.TKTD endpoints combined

institution	UOS
timeline	M18-M30
amount	species x substances x model-parameters x 4 (median, mean, percentiles) x model-version = 8 x ~10 x endpoints (4) x time (10) x 4 x ~10 = app. 50,000-200,000 data points
software	python
fileformat	netcdf, csv, json
encoding	UTF-8
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

UOS.TKTD endpoints contact

institution	UOS
timeline	M18-M30
amount	species x substances x model-parameters x 4 (median, mean, percentiles) x model-version = 8 x ~10 x endpoints (4) x time (10) x 4 x ~10 = app. 50,000-200,000 data points
software	python
fileformat	netcdf, csv, json
encoding	UTF-8
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

UOS.TKTD endpoints oral

institution	UOS
timeline	M18-M30
amount	species x substances x model-parameters x 4 (median, mean, percentiles) x model-version = 8 x ~10 x endpoints (4) x time (10) x 4 x ~10 = app. 50,000-200,000 data points
software	python
fileformat	netcdf, csv, json
encoding	UTF-8
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

UOS.TKTD parameters combined

institution	UOS
timeline	M18-M30
amount	species x substances x model-parameters x 4 (median, mean, percentiles) x model-version = 8 x app. 10 x app. 5 x 4 x app. 10 = app. 10.000-100.000 data points
software	python
fileformat	netcdf, csv, json
encoding	UTF-8
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

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UOS.TKTD parameters contact

institution	UOS
timeline	M18-M30
amount	species x substances x model-parameters x 4 (median, mean, percentiles) x model-version = 8 x ~10 x ~5 x 4 x ~10 = app. 10,000-100,000 data points
software	python
fileformat	netcdf, csv, json
encoding	UTF-8
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

UOS.TKTD parameters oral

institution	UOS
timeline	M18-M30
amount	species x substances x model-parameters x 4 (median, mean, percentiles) x model-version = 8 x app. 10 x app. 5 x 4 x app. 10 = app. 10,000-100,000 data points
software	python
fileformat	netcdf, csv, json
encoding	UTF-8
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

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2.1.2 SLU

SLU.Pesticide analyses

institution	SLU
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

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2.1.3 AU

AU.EAB and stakeholders

institution	AU
timeline	continuous
amount	<100 records
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	personal data acquired from the project's external advisory board and stakeholders

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2.1.4 PEN

[PEN.PollinERA website logfile](#)

institution	PEN
timeline	continuous
amount	unknown
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	personal data acquired by the server on which the PollinERA website is hosted; data is deleted within no more than 7 days

[PEN.PollinERA website cookies](#)

institution	PEN
timeline	continuous
amount	unknown
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	personal data acquired by the browser from which the PollinERA website is visited; data is deleted when browser is closed or cookies are manually removed

[PEN.PollinERA website newsletter](#)

institution	PEN
timeline	continuous
amount	unknown
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	personal data acquired by the third-party software MailerLite when users subscribe to the newsletter on the PollinERA website

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2.1.5 UJAG

UJAG.acute contact toxicity measurement

institution	UNIBO, UJAG, INC-PAS, ULUND, UOS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

UJAG.acute contact toxicity test

institution	UNIBO, UJAG, INC-PAS, ULUND, UOS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

UJAG.acute contact toxicity TestConditions

institution	UNIBO, UJAG, INC-PAS, ULUND, UOS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

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2.1.6 ULUND

ULUND.PPCoMS site

institution	ULUND, UNIBO, UJAG, INC-PAS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

ULUND.PPCoMS transect

institution	ULUND, UNIBO, UJAG, INC-PAS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

ULUND.PPCoMS TransectSegment_HabitatType

institution	ULUND, UNIBO, UJAG, INC-PAS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

ULUND.PPCoMS TransectPlantSpecies

institution	ULUND, UNIBO, UJAG, INC-PAS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

ULUND.PPCoMS TransectInsectSpecies

institution	ULUND, UNIBO, UJAG, INC-PAS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

Data Catalogue V 1.1

ULUND.PPCoMS TransectInsectNumber

institution	ULUND, UNIBO, UJAG, INC-PAS
timeline	n.s.
amount	n.s.
software	n.s.
fileformat	n.s.
encoding	n.s.
dataset_standard	n.s.
dataset_method	n.s.
dataset_other	NULL

Data Catalogue V 1.1

2.2 Data consumers

2.2.1 ULUND

ULUND.agricultural_land_use

institution	ULUND
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timeline	n.s.
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amount	n.s.
---------------	------

software	n.s.
-----------------	------

fileformat	n.s.
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encoding	UTF-8
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dataset_standard	n.s.
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dataset_method	n.s.
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dataset_other	NULL
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Data Catalogue V 1.1

3 Data

3.1 Data providers

3.1.1 UOS.TKTD_endpoints_combined

UOS.TKTD_endpoints_combined.EC50

institution	UOS
dataset_label	TKTD endpoints combined
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of combined exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_endpoints_combined.EC10

institution	UOS
dataset_label	TKTD endpoints combined
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of combined exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_endpoints_combined.EC1

institution	UOS
dataset_label	TKTD endpoints combined
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of combined exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

3.1.2 UOS.TKTD_endpoints_contact

UOS.TKTD_endpoints_contact.EC50

institution	UOS
dataset_label	TKTD_endpoints_contact
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of contact exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_endpoints_contact.EC10

institution	UOS
dataset_label	TKTD_endpoints_contact
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of contact exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_endpoints_contact.EC1

institution	UOS
dataset_label	TKTD_endpoints_contact
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of contact exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

3.1.3 UOS.TKTD_endpoints_oral

UOS.TKTD_endpoints_oral.EC50

institution	UOS
dataset_label	TKTD_endpoints_oral
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of oral exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_endpoints_oral.EC10

institution	UOS
dataset_label	TKTD_endpoints_oral
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of oral exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_endpoints_oral.EC1

institution	UOS
dataset_label	TKTD_endpoints_oral
datatype	real
frequency	12, 24, 36, 48, 72, 96 hours
description	lethal response of oral exposure
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

3.1.4 UOS.TKTD_parameters_combined

UOS.TKTD_parameters_combined.k_u

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	uptake rate constant of GUTS SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_combined.k_d

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	dominant damage rate constant of GUTS SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_combined.z

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	threshold of GUTS-SD model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_combined.b

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	killling rate of GUTS-SD model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

UOS.TKTD_parameters_combined.h_b

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	background hazard of GUTS-SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_combined.eta

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	buffer speed constant of Buffer-GUTS model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_combined.alpha

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	median of threshold distribution of GUTS-IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_combined.beta

institution	UOS
dataset_label	TKTD_parameters_combined
datatype	real
frequency	n.a.
description	shape of threshold distribution of GUTS-IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

3.1.5 UOS.TKTD_parameters_contact

UOS.TKTD_parameters_contact.k_u

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	uptake rate constant of GUTS SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_contact.k_d

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	dominant damage rate constant of GUTS SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_contact.z

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	threshold of GUTS-SD model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_contact.b

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	killing rate of GUTS-SD model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

UOS.TKTD_parameters_contact.h_b

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	background hazard of GUTS-SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_contact.eta

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	buffer speed constant of Buffer-GUTS model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_contact.alpha

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	median of threshold distribution of GUTS-IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_contact.beta

institution	UOS
dataset_label	TKTD_parameters_contact
datatype	real
frequency	n.a.
description	shape of threshold distribution of GUTS-IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

3.1.6 UOS.TKTD_parameters_oral

UOS.TKTD_parameters_oral.k_u

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	uptake rate constant of GUTS SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_oral.k_d

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	dominant damage rate constant of GUTS SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_oral.z

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	threshold of GUTS-SD model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_oral.b

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	killing rate of GUTS-SD model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

UOS.TKTD_parameters_oral.h_b

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	background hazard of GUTS-SD/IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_oral.eta

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	buffer speed constant of Buffer-GUTS model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_oral.alpha

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	median of threshold distribution of GUTS-IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

UOS.TKTD_parameters_oral.beta

institution	UOS
dataset_label	TKTD_parameters_oral
datatype	real
frequency	n.a.
description	shape of threshold distribution of GUTS-IT model
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

3.1.7 SLU.Pesticide_analyses

SLU.Pesticide_analyses.ai

institution	SLU
dataset_label	Pesticide analyses
datatype	string
frequency	n.s.
description	Active ingredient
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	LC-MS/MS or GC-MS/MS
data_other	NULL

SLU.Pesticide_analyses.min_conc

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Min concentrations
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	ppm
matrix	n.s.
method	LC-MS/MS or GC-MS/MS
data_other	dataset from IT and PL (ppm)

SLU.Pesticide_analyses.max_conc

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Max concentrations
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	ppm
matrix	n.s.
method	LC-MS/MS or GC-MS/MS
data_other	dataset from IT and PL (ppm)

SLU.Pesticide_analyses.pesticide_class

institution	SLU
dataset_label	Pesticide analyses
datatype	string
frequency	n.s.
description	Pesticide class
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

SLU.Pesticide_analyses.pesticide_risk

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Pesticide risk
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	obtained from PoshBee (REA grant agreement 773921)

SLU.Pesticide_analyses.ld50

institution	SLU
dataset_label	Pesticide analyses
datatype	string
frequency	n.s.
description	LD50 active substance
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	µg/honeybee
matrix	n.s.
method	n.s.
data_other	obtained from Pesticide Properties Database (PPDB)

SLU.Pesticide_analyses.priority_scanning_max_ppm

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Max ppm > 0,1
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	priority scoring

SLU.Pesticide_analyses.priority_scanning_approved_eu

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Substances approved in EU
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	priority scoring

Data Catalogue V 1.1

SLU.Pesticide_analyses.priority_scanning_pesticide_risk

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Pesticide risk (PoshBee) >0.05
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	priority scoring

SLU.Pesticide_analyses.priority_scanning_ld50

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	LD50 < 1 µg
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	priority scoring

SLU.Pesticide_analyses.priority_scanning_abundance_it

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Susbtances found in >10% IT
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	priority scoring

SLU.Pesticide_analyses.priority_scanning_abundance_pl

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Susbtances found in >10% PL
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	priority scoring

Data Catalogue V 1.1

SLU.Pesticide_analyses.priority_scanning_both_countries

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Analyzed in both countries
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.s.
method	n.s.
data_other	priority scoring

SLU.Pesticide_analyses.priority_scanning_sum

institution	SLU
dataset_label	Pesticide analyses
datatype	real
frequency	n.s.
description	Sum of priority scores
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	priority scoring

Data Catalogue V 1.1

3.1.8 AU.EAB_and_stakeholders

AU.EAB_and_stakeholders.name

institution	AU
dataset_label	EAB_and_stakeholders
datatype	string
frequency	n.s.
description	name
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

AU.EAB_and_stakeholders.organisation

institution	AU
dataset_label	EAB_and_stakeholders
datatype	string
frequency	n.s.
description	organisation
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

AU.EAB_and_stakeholders.acronym

institution	AU
dataset_label	EAB_and_stakeholders
datatype	string
frequency	n.s.
description	acronym
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

AU.EAB_and_stakeholders.email

institution	AU
dataset_label	EAB_and_stakeholders
datatype	string
frequency	n.s.
description	email
expected	^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}\$
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

AU.EAB_and_stakeholders.category

institution	AU
dataset_label	EAB and stakeholders
datatype	string
frequency	n.s.
description	category
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

AU.EAB_and_stakeholders.interest

institution	AU
dataset_label	EAB and stakeholders
datatype	string
frequency	n.s.
description	interest
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

AU.EAB_and_stakeholders.consent

institution	AU
dataset_label	EAB and stakeholders
datatype	string
frequency	n.s.
description	consent
expected	{yes,no}
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.s.
method	n.s.
data_other	NULL

Data Catalogue V 1.1

3.1.9 PEN.PollinERA_website_logfile

PEN.PollinERA_website_logfile.log_browser_type

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	browser type
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_logfile.log_browser_version

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	browser version
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_logfile.log_operating_system

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	operating system
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_logfile.log_referrer_url

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	referrer URL
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

PEN.PollinERA_website_logfile.log_webpages_visited

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	webpages visited on the PollinERA website
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_logfile.log_date_of_visit

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	date of visit
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_logfile.log_time_of_visit

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	time of visit
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_logfile.log_ip_address

institution	PEN
dataset_label	PollinERA_website_logfile
datatype	string
frequency	continuous
description	IP address from which the website is visited
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

3.1.10 PEN.PollinERA_website_cookies

PEN.PollinERA_website_cookies.cookie_browser_type

institution	PEN
dataset_label	PollinERA_website_cookies
datatype	string
frequency	continuous
description	browser type
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_cookies.cookie_location_data

institution	PEN
dataset_label	PollinERA_website_cookies
datatype	string
frequency	continuous
description	location data
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_cookies.cookie_ip_address

institution	PEN
dataset_label	PollinERA_website_cookies
datatype	string
frequency	continuous
description	IP address from which the website is visited
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

3.1.11 PEN.PollinERA_website_newsletter

PEN.PollinERA_website_newsletter.newsletter_name

institution	PEN
dataset_label	PollinERA_website_newsletter
datatype	string
frequency	continuous
description	name
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_newsletter.newsletter_surname

institution	PEN
dataset_label	PollinERA_website_newsletter
datatype	string
frequency	continuous
description	surname
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

PEN.PollinERA_website_newsletter.newsletter_email

institution	PEN
dataset_label	PollinERA_website_newsletter
datatype	string
frequency	continuous
description	e-mail address
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

3.1.12 UJAG.acute_contact_toxicity_measurement

UJAG.acute_contact_toxicity_measurement.test_ID

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	string
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Identifier of the test
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.test_organism

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	string
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Species to be tested
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.mortality_SolventControl

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	integer
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Mortality in the control receiving only the solvent
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	number of individuals
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.mortality_UntreatedControl

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	integer
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Mortality in the negative control receiving no solvent
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	number of individuals
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

UJAG.acute_contact_toxicity_measurement.sublethal_effect

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	string
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Sublethal effect
expected	{'motion coordination deficits'; 'hyperactivity'; 'apathy'; 'regurgitation and proboscis extension'; 'curved-down abdomen'; 'moribund'}
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.dry_weight

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	real
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Measured dry body weight of the tested individual after completion of the test
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.dry_weight_unit

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	string
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Unit in which the variable dry_weight is provided
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.fresh_weight

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	real
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Calculated fresh body weight of the tested individual after completion of the test
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

UJAG.acute_contact_toxicity_measurement.fresh_weight_unit

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	string
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Unit in which the variable fresh weight is provided
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.treatment_dose

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	real
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Dose of compound applied to the animal
expected	{1;0}
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.treatment_dose_unit

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	string
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Unit in which the variable treatment_dose (dose of compound applied to the animal) is provided
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.solvent

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	n.s.
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Solvent applied (no for negative controls receiving no solvent; yes for all other treatments)
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

UJAG.acute_contact_toxicity_measurement.individual_ID

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	n.s.
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Identifier of the tested animal (replicate)
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

UJAG.acute_contact_toxicity_measurement.cage_ID

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_measurement
datatype	n.s.
frequency	At least every 24 h for 4 days AND until control group reaches 50% mortality
description	Identifier of the cage in which the animal was kept before the test
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

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3.1.13 UJAG.acute_contact_toxicity_test

UJAG.acute_contact_toxicity_test.test_ID

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	string
frequency	once per test
description	Identifier of the test
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_test.fresh_weight_pop_before

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	real
frequency	once per test
description	Fresh weight of circa 30 randomly selected individuals before test, preferably not used in the exposure experiment
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_test.fresh_weight_pop_before_unit

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	string
frequency	once per test
description	Unit in which variable fresh_weight_pop_before is provided
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_test.fresh_weight_pop_after

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	real
frequency	once per test
description	Fresh weight of circa 30 randomly selected individuals post mortem, preferably not used in the exposure experiment
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

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UJAG.acute_contact_toxicity_test.fresh_weight_pop_after_unit

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	string
frequency	once per test
description	Unit in which variable fresh_weight_pop_after is provided
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_test.compound_name

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	string
frequency	once per test
description	Name of the test compound applied to the animal
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_test.compound_source

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	string
frequency	once per test
description	Source from which the compound was purchased
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_test.compound_code

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	string
frequency	once per test
description	Catalogue number of the compound at the source at which the compound was purchased
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

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UJAG.acute_contact_toxicity_test.lab_ID	
institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_test
datatype	string
frequency	once per test
description	Identifier of the laboratory study site
expected	{'UNIBO','UJAG','INC-PAS','ULUND'}
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

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3.1.14 UJAG.acute_contact_toxicity_TestConditions

UJAG.acute_contact_toxicity_TestConditions.test_ID

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_TestConditions
datatype	string
frequency	continuous
description	Identifier of the test
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_TestConditions.light_intensity

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_TestConditions
datatype	real
frequency	continuous
description	Light intensity during treatment
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.s.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_TestConditions.light_intensity_unit

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_TestConditions
datatype	string
frequency	continuous
description	Unit in which variable light_intensity is provided
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	n.s.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_TestConditions.temperature

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_TestConditions
datatype	real
frequency	continuous
description	Temperature during treatment in °C
expected	20-27 °C
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	°C
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

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UJAG.acute_contact_toxicity_TestConditions.humidity

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_TestConditions
datatype	real
frequency	continuous
description	Relative humidity during treatment in %
expected	40-80 %
quality_parameter	n.a.
quality_value	n.a.
standard	n.a.
unit	%
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_TestConditions.date

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_TestConditions
datatype	date
frequency	continuous
description	Date during treatment
expected	YYYY-MM-DD; \b{d}{4}-(0[1-9] [10-2])-(0[1-9] [12][0-9] 3[01])\b
quality_parameter	n.a.
quality_value	n.a.
standard	ISO 8601
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

UJAG.acute_contact_toxicity_TestConditions.time

institution	UJAG, UNIBO, INC-PAS, ULUND, UOS
dataset_label	acute_contact_toxicity_TestConditions
datatype	hour
frequency	continuous
description	Time during treatment
expected	hh:mm:ss
quality_parameter	n.a.
quality_value	n.a.
standard	ISO 8601
unit	n.a.
matrix	n.a.
method	OECD 214; OECD 246 ; ICPBR solitary bee ring test; Azpiazu et al. 2023; Martins et al. in press
data_other	NULL

Data Catalogue V 1.1

3.1.15 ULUND.PPCoMS_site

ULUND.PPCoMS_site.site_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	integer
frequency	twice per year
description	Site number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_site.site_code

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	srtring
frequency	twice per year
description	Unique site number code, consisting of the crop code and an integer number for the replicate (1-3 for OSR and 4-6 for APP)
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_site.focal_crop

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	string
frequency	twice per year
description	Focal crop site: either winter-sown oilseed rape fields (OSR, Brassica napus) OR apple orchards (APP, Malus domestica)
expected	{OSR;APP}
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_site.country

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	string
frequency	twice per year
description	Country
expected	{'ITA';'POL';'SWE' }
quality_parameter	n.a.
quality_value	n.a.
standard	ISO 3166 Alpha-3-code
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

ULUND.PPCoMS_site.latitude

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	real
frequency	twice per year
description	Latitude of the orchard or field central point, defined as the location of the honey bee colony/colonies located at or in the focal crop field or orchard
expected	{44,2;56,0}
quality_parameter	n.s.
quality_value	n.s.
standard	WGS84
unit	decimal degrees
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_site.longitude

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	real
frequency	twice per year
description	Longitude of the orchard or field central point, defined as the location of the honey bee colony/colonies located at or in the focal crop field or orchard
expected	{11,4;14,3}
quality_parameter	n.s.
quality_value	n.s.
standard	WGS84
unit	decimal degrees
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_site.lab_ID

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	string
frequency	twice per year
description	Identifier of the field study site
expected	{'UNIBO','UJAG','INC-PAS','ULUND'}
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_site.colony_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	integer
frequency	twice per year
description	Number of sentinel colonies kept at a site
expected	n.a.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	n.a.
data_other	NULL

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ULUND.PPCoMS_site.date_from

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	date
frequency	twice per year
description	Date at which it has been decided that a site becomes a sampling site
expected	YYYY-MM-DD; \b\d{4}-(0[1-9] 1[0-2])-(0[1-9] [12][0-9] 3[01])\b
quality_parameter	n.a.
quality_value	n.a.
standard	ISO 8601
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_site.date_to

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS site
datatype	date
frequency	twice per year
description	Date at which it has been decided that a site discontinues to be a sampling site
expected	YYYY-MM-DD; \b\d{4}-(0[1-9] 1[0-2])-(0[1-9] [12][0-9] 3[01])\b
quality_parameter	n.a.
quality_value	n.a.
standard	ISO 8601
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

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3.1.16 ULUND.PPCoMS_transect

ULUND.PPCoMS_transect.site_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS transect
datatype	integer
frequency	twice per year
description	Site number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_transect.transect_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS transect
datatype	string
frequency	twice per year
description	Transect number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_transect.TransectStart_latitude

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS transect
datatype	real
frequency	twice per year
description	Latitude of the orchard or field central point, defined as the location of the honey bee colony/colonies located at or in the focal crop field or orchard
expected	{44,2;56,0}
quality_parameter	n.s.
quality_value	n.s.
standard	WGS84
unit	decimal degrees
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_transect.TransectStart_longitude

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS transect
datatype	real
frequency	twice per year
description	Longitude of the orchard or field central point, defined as the location of the honey bee colony/colonies located at or in the focal crop field or orchard
expected	{11,4;14,3}
quality_parameter	n.s.
quality_value	n.s.
standard	WGS84
unit	decimal degrees
matrix	n.a.
method	n.a.
data_other	NULL

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ULUND.PPCoMS_transect.TransectEnd_latitude

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_transect
datatype	real
frequency	twice per year
description	Latitude of the orchard or field central point, defined as the location of the honey bee colony/colonies located at or in the focal crop field or orchard
expected	{44,2;56,0}
quality_parameter	n.s.
quality_value	n.s.
standard	WGS84
unit	decimal degrees
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_transect.TransectEnd_longitude

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_transect
datatype	real
frequency	twice per year
description	Longitude of the orchard or field central point, defined as the location of the honey bee colony/colonies located at or in the focal crop field or orchard
expected	{11,4;14,3}
quality_parameter	n.s.
quality_value	n.s.
standard	WGS84
unit	decimal degrees
matrix	n.a.
method	n.a.
data_other	NULL

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3.1.17 ULUND.PPCoMS_TransectSegment_HabitatType

ULUND.PPCoMS_TransectSegment_HabitatType.site_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS TransectSegment HabitatType
datatype	integer
frequency	twice per year
description	Site number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectSegment_HabitatType.transect_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS TransectSegment HabitatType
datatype	string
frequency	twice per year
description	Transect number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectSegment_HabitatType.segment_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS TransectSegment HabitatType
datatype	integer
frequency	twice per year
description	Segment number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectSegment_HabitatType.habitat_type

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS TransectSegment HabitatType
datatype	string
frequency	twice per year
description	Habitat type
expected	\bH([1-9] [1-3][0-9] 40)\b
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.a.
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022).
data_other	NULL

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3.1.18 ULUND.PPCoMS_TransectPlantSpecies

ULUND.PPCoMS_TransectPlantSpecies.site_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	integer
frequency	twice per year
description	Site number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectPlantSpecies.transect_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	string
frequency	twice per year
description	Transect number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectPlantSpecies.survey_TimePoint

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	integer
frequency	twice per year
description	Time point used to survey pollinators and plant species
expected	
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectPlantSpecies.plant_species

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	string
frequency	twice per year
description	Name of the plant species or morphospecies or recognisable taxonomic units
expected	
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

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ULUND.PPCoMS_TransectPlantSpecies.FlowerUnit_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	integer
frequency	twice per year
description	Number of flower units
expected	
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

ULUND.PPCoMS_TransectPlantSpecies.FlowerUnit_size

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	real
frequency	twice per year
description	Mean size of the flower unit
expected	
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

ULUND.PPCoMS_TransectPlantSpecies.FlowerCover

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	real
frequency	twice per year
description	Flower cover, defined as number of flower units" x "mean size of flower unit
expected	
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	n.s.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectPlantSpecies.date

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectPlantSpecies
datatype	date
frequency	twice per year
description	Sampling date
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

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3.1.19 ULUND.PPCoMS_TranssectInsectSpecies

ULUND.PPCoMS_TranssectInsectSpecies.site_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	integer
frequency	twice per year
description	Site number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.transect_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	string
frequency	twice per year
description	Transect number
expected	\bT([1-2])\b
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.survey_TimePoint

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	integer
frequency	twice per year
description	Time point used to survey pollinators and plant species in a given calendar year
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.pollinator_group

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	string
frequency	twice per year
description	Pollinator group
expected	{'butterfly';'bee';'hoverfly';'moth'}
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

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ULUND.PPCoMS_TranssectInsectSpecies.pollinator_species

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	string
frequency	twice per year
description	Name of adult polinator species or of taxa aggregate
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.plant_species

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	string
frequency	twice per year
description	Name of plant species or morphospecies visited by polinator
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.temperature

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	real
frequency	twice per year
description	Temperature in °C used as basis to decide if minimum temperature for transect walk is exceeded
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	°C
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.cloud

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	integer
frequency	twice per year
description	Cloud coverage of the sky in % used as basis to decide if minimum temperature for transect walk is exceeded
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	%
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

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ULUND.PPCoMS_TranssectInsectSpecies.windspeed

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	real
frequency	twice per year
description	Windspeed in Beaufort-number used as basis to decide if maximum windspeed for transect walk is not exceeded
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	Beaufort units
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.date

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	date
frequency	twice per year
description	Sampling date
expected	YYYY-MM-DD; \b\d{4}-(0[1-9] 1[0-2])-(0[1-9] [12][0-9] 3[01])\b
quality_parameter	n.a.
quality_value	n.a.
standard	ISO 8601
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.time_from

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectSpecies
datatype	time
frequency	twice per year
description	Start time of transect walk
expected	hh:mm
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectSpecies.

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	time_to
datatype	PPCoMS_TranssectInsectSpecies
frequency	time
description	twice per year
expected	End time of transect walk
quality_parameter	hh:mm
quality_value	n.a.
standard	n.a.
unit	n.s.
matrix	n.a.
method	n.a.
data_other	n.a.

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3.1.20 ULUND.PPCoMS_TranssectInsectNumber

ULUND.PPCoMS_TranssectInsectNumber.site_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	integer
frequency	twice per year
description	Site number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectNumber.transect_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	string
frequency	twice per year
description	Transect number
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectNumber.survey_TimePoint

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	integer
frequency	twice per year
description	Time point used to survey pollinators and plant species in a given calendar year
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TranssectInsectNumber.butterfly_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of individual butterflies seen
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

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ULUND.PPCoMS_TransectInsectNumber.bee_group1_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bee group 1: honeybees
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.bee_group2_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bee group 2: bumblebees
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.bee_group3_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bee group 3: large bees (> 10 mm)
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.bee_group4_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bee group 4: small bees (3-10 mm)
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

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ULUND.PPCoMS_TransectInsectNumber.bee_group5_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bee group 5: wasp bees and blood bees
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.bumblebee_subgroupA_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bumblebees subgroup A: ginger
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.bumblebee_subgroupB_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bumblebees subgroup B: black-red
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.bumblebee_subgroupC_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bumblebees subgroup C: all-dark
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

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ULUND.PPCoMS_TransectInsectNumber.bumblebee_subgroupD_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bumblebees subgroup D: yellow-black-white
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.bumblebee_subgroupE_number

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of bumblebees subgroup E: yellow-black-red
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.hoverfly_group1

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of hoverfly group 1: Large, robust hoverflies. Tribes Eristalini & Volucellini
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.hoverfly_group2

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of hoverfly group 2: distinctly bumblebee-like hoverflies
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

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ULUND.PPCoMS_TranssectInsectNumber.hoverfly_group3

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of hoverfly group 3: distinctly wasp-like hoverflies
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TranssectInsectNumber.hoverfly_group4

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of hoverfly group 4: hoverflies with black-and-yellow stripes or spots. Core: subfamily Syrphinae
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TranssectInsectNumber.hoverfly_group5

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	integer
frequency	twice per year
description	Total count of hoverfly group 5: other hoverflies
expected	n.s.
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	number
matrix	n.a.
method	SPRING consortium (2022). SPRING Minimum Viable Scheme Pilot: Site Survey Guidance (vers. April 2022); https://pollinatoracademy.eu/training/training-materials/
data_other	NULL

ULUND.PPCoMS_TranssectInsectNumber.temperature

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TranssectInsectNumber
datatype	real
frequency	twice per year
description	Temperature in °C used as basis to decide if minimum temperature for transect walk is exceeded
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	°C
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

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ULUND.PPCoMS_TransectInsectNumber.cloud

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	integer
frequency	twice per year
description	Cloud coverage of the sky in % used as basis to decide if minimum temperature for transect walk is exceeded
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	%
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.windspeed

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	real
frequency	twice per year
description	Windspeed in Beaufort-number used as basis to decide if maximum windspeed for transect walk is not exceeded
expected	n.s.
quality_parameter	n.s.
quality_value	n.s.
standard	n.s.
unit	Beaufort units
matrix	n.a.
method	M11 Protocols for pesticide and pollinator co-monitoring
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.date

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	date
frequency	twice per year
description	Sampling date
expected	YYYY-MM-DD; \b\d{4}-(0[1-9] 1[0-2])-(0[1-9] 12)[0-9] 3[01])\b
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

ULUND.PPCoMS_TransectInsectNumber.time_from

institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	time
frequency	twice per year
description	Start time of transect walk
expected	hh:mm
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

ULUND.PPCoMS_TransectInsectNumber.time_to	
institution	ULUND, UNIBO, UJAG, INC-PAS
dataset_label	PPCoMS_TransectInsectNumber
datatype	time
frequency	twice per year
description	End time of transect walk
expected	hh:mm
quality_parameter	n.a.
quality_value	n.a.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.a.
data_other	NULL

Data Catalogue V 1.1

3.2 Data consumers

3.2.1 ULUND.agricultural_land_use

ULUND.agricultural_land_use.country

institution	ULUND
dataset_label	agricultural_land_use
description	country code using three letter Country codes (ISO 3100-1 alpha-3)
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	string
fileformat	n.s.
encoding	UTF-8
expected	SWE
precision	n.s.
standard	ISO 3166 alpha-3
unit	n.a.
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	n.s.

ULUND.agricultural_land_use.site_name

institution	ULUND
dataset_label	agricultural_land_use
description	site name
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	string
fileformat	n.s.
encoding	UTF-8
expected	[a-zA-Z0-9]
precision	n.s.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	should be unique and not include any special letters

ULUND.agricultural_land_use.crop

institution	ULUND
dataset_label	agricultural_land_use
description	focal crop identity
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	string
fileformat	n.s.
encoding	UTF-8
expected	APP, OSR, CLO, NA
precision	n.s.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	APP = apple, OSR = oilseed rape; other: CLO = red clover seed, which often also has OSR, NA = not applicable since it is not a crop focused location

Data Catalogue V 1.1

ULUND.agricultural_land_use.latitude_DD

institution	ULUND
dataset_label	agricultural_land_use
description	latitude coordinate in decimal degrees (DD)
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	decimal
fileformat	n.s.
encoding	UTF-8
expected	55.4380991-56.17182
precision	±0.0000000000000001
standard	EPSG:4326
unit	degrees
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	n.s.

ULUND.agricultural_land_use.longitude_DD

institution	ULUND
dataset_label	agricultural_land_use
description	longitude coordinate in decimal degrees (DD)
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	decimal
fileformat	n.s.
encoding	UTF-8
expected	12.76551-14.2983833333333
precision	±0.0000000000000001
standard	EPSG:4326
unit	degrees
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	n.s.

ULUND.agricultural_land_use.year

institution	ULUND
dataset_label	agricultural_land_use
description	year the site was first used
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	integer
fileformat	n.s.
encoding	UTF-8
expected	1996-2023
precision	n.s.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	n.s.

Data Catalogue V 1.1

ULUND.agricultural_land_use.project

institution	ULUND
dataset_label	agricultural_land_use
description	project the site was first used in
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	string
fileformat	n.s.
encoding	UTF-8
expected	[a-zA-Z]
precision	n.s.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	n.s.

ULUND.agricultural_land_use.comments

institution	ULUND
dataset_label	agricultural_land_use
description	any relevant comments on the location
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	string
fileformat	n.s.
encoding	UTF-8
expected	.*
precision	n.s.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	n.s.

ULUND.agricultural_land_use.site

institution	ULUND
dataset_label	agricultural_land_use
description	site code specific for PollinERA once we have decided on the sites to use
purpose	n.s.
source	n.s.
timeline	n.s.
datatype	string
fileformat	n.s.
encoding	UTF-8
expected	[a-zA-Z0-9]
precision	n.s.
standard	n.s.
unit	n.a.
matrix	n.a.
method	n.s.
amount	n.s.
frequency	n.s.
data_other	should be unique and short and not include any special letters or spaces



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Project partners

