DMP title

Project Name My plan (KU Leuven DMP)
Principal Investigator / Researcher Bruno Cammue
Institution KU Leuven

1. Data Description

What data will you collect or create? Fill out the table below and/or describe.

Type of data	Format	Volume	How created?
e.g observational, experimental, reference data,...	e.g. textual, numerical, multimedia	e.g 200MB, 1GB	Computer task, observations, blood sample, ...
CMPG : WP2 - WP3 - WP4 (T4.2)	numerical, .xls	40kb/assay	observation (measurement of lesion or CFU-counting), microscopic (spore counting), qPCR
CMPG : WP2 - WP3 - WP4 (T4.2)	.pzfx (Graphpad analysis)	80kb/assay	computer task (Graphpad analysis)
CMPG : WP2 - WP3 - WP4 (T4.2)	.docx	50-2000Kb/assay	experiment sheet (set up, aims, conclusion, graph, pictures)
CMPG : WP2 - WP3 - WP4 (T4.2)	.jpg	6 Mb/picture	digital image (photo)
CSCE: WP1 - WP4 (T4.1)	Numerical, .xls	300 - 20.000 kb/file	GC, GPC or HPLC data imported and analyzed
CSCE: WP1 - WP4 (T4.1)	.pzfx (Graphpad Prism)	100 - 1000 kb/file	Computer analysis
CSCE: WP1 - WP4 (T4.1)	.docx		Experimental sheet (set up, aims, results, conclusions-
CSCE: WP1 - WP4 (T4.1)	.PNG	50 kb/file	Adjusted figure in PPT for more clarification

Do you intend to reuse existing data?

- not applicable for plant-ISR assays WP2-WP3-WP4(T4.2)
- All data is newly generated WP1 - WP4 (T4.1)

Do you use personal data (i.e. all data possibly identifying an individual)?

- No

2. Documentation and Metadata

Describe the documentation that will be created for the data. This section deals with the way in which you will document how the dataset was created and subsequently processed.

The WPs carried out by the CMPG team (WP2-WP3-WP4(T4.2)) concern standard plant disease assays in which the IR activity of the different RCF fractions prepared by CSCE are analysed. Such experiments typically consist of plants (Arabidopsis, tomato, strawberry, ...) that are grown up, treated with the RCF fraction, challenged with a specific pathogen or abiotic stress

condition (e.g. heat) and final analysis of the infection or stress on the plants (visually or molecularly). Data generated for each experiment consist of :

1. overviewing experimental sheet (word-file) starting from a standard template file containing the following information :

- General information : experiment number, general aim of the experiment, start date, researcher(s) involved
- Experimental conditions : info on
  - the plant : species, ecotype, see stock nr, growth conditions
  - the pathogen : species, race, inoculum preparation, inoculation type
- Treatment IR-trigger, how applied, when applied,
- Results :
  - analysis method, e.g. measurement of lesion size, counting of newly formed spores, qPCR analysis of pathogen proliferation (the data of the analysis are collected in xls-file(see 2.))
  - graphical presentation of the data (processing of data and statistical analysis are done in Graphpad resulting in a pzfx-file (see 3.))
  - pictures (optional) : only very relevant ones are included in this overview-file, all are stored separately as jpg-files (see 4.)
  - short description of the results
- Conclusions and todos

2. raw data : all data from the experiment are saved in a xls-file

3. data processing and creation of graphs : are done using Graphpad and stored in a pzfx-file

4. pictures : are generated by digital cameras and stored as jpg-files

The WP's carried out by the CSCE team (WP 1 - WP4(T4.1)) involves performing initial RCF reactions, under predetermined conditions (i.e. biomass loading, catalyst type, solvent type(s) and loading, reaction temperature and time) with possible deviation from the proof-of-concept pine biomass, to create lignin oils. Next, lignin oils from numerous and identical RCF reactions are mixed to obtain a master batch, after which sequential solvent extraction is performed with varying ratios of hexane and ethyl acetate to further separate different molecules present in the initial mixture of lignin oil. Different fractions will be obtained after each iteration of the solvent composition and are characterized with gas- and liquid chromatography techniques as well as NMR to identify and quantify its constituents. Each fraction is shared with CMPG to identify which fractions retain their ISR activity.

1. overviewing experimental sheet (word-file)starting from a standard template file containing the following information :
   - General information: experimental set-up, goal, date and researchers involved
   - Experimental conditions:
     - RCF conditions: catalyst type and loading, solvent type and loading, biomass type, temperature and duration of the experiment
     - Solvent extraction: Solvent composition and amounts, temperature and time
   - Amounts of oils and fractions obtained in separate experiments
   - Results:
     - Obtained results from GC analysis (.pdf files)
     - Analysis methods, oil yields and compositions (.xls files)
     - Graphical presentation of the data (statistical analysis and graphs, .pzfx files)
     - Short description of the results
   - Conclusions and next steps
2. Raw data: All numerical data is stored in .xls files
3. Data processing and graphical representation: graphpad prism and stored in .pzfx files

Describe the metadata for the data. This section deals with metadata: information contained in your dataset about the research data.

For the **WPs carried out by the CMPG team (WP2-WP3-WP4(T4.2))** the effect of the IR-inducer (RCF fractions) on the plant's disease resistance is typically analysed by :

- measurement of the size of the lesions occuring on the leaves after infection with a necrotrophic pathogen such as *Botrytis cinerea*
- evaluation of the effect on the pathogen disease cycle by microscopical counting of newly

formed spores (e.g. with a biotrophic pathogen such as *Hyaloperonospora arabidopsidis)*
- measurement of pathogen proliferation by quantifying the amount of pathogen DNA in the infected sample through qPCR analysis (all pathogens)

3. Ethical, Legal and Privacy Issues

Are there any ethical issues concerning the creation and/or use of the data?

no

Did you consider all issues about copyrights and IPR?

Yes, we have FTO

Are the collected data considered to be â€œdata containing personal informationâ€ and are all the requirements about the collection of these data met?

The data do not contain personal information

4. Data storage and Backup during Research

How and where will the data be stored during research?

- Centrally on storage facilities of the university

Which back-up procedures are in place?

The data generated by **CMPG** will be stored on the university's central servers with automatic daily back-up
procedures

The data generated by **CSCE** will be stored on OneDrive KU Leuven with automatic back-up.

Describe the data security procedures and who has access to the data.

Data generated internally by **CMPG** are stored in a dedicated project folder on an internal server, maintained and secured by KU Leuven ICTS. Access to the data are limited to CMPG staff.

Data generated internally by **CSCE** are stored in a dedicated project folder on an internal server, maintained and secured by KU Leuven ICTS. Access to the data are limited to CSCE staff.

5. Data selection and Preservation after Research

What is the long-term preservation plan for these dataset(s)?

1. The data will be stored on the university's central servers (with automatic back-up procedures) for at least 10 years, conform the KU Leuven RDM policy.

Data Selection: Which data will have long time value for the research and will be preserved?

Data generated at **CMPG** on the IR-plant disease assays do not have such long time value.

Data generated at **CSCE** on RCF oils and fractionation will be kept after the project since it can provide insight as examples for future experiments. Moreover, in combination with the **CMPG** data, publications could be written as well.

6. Data Sharing

Are there any restrictions for sharing the data?

The **CMPG** data on the plant IR disease assays will be shared within the consortium without limitations.

The **CSCE** data on production of RCF oils and their fractions will be shared within the consortium without limitations.

If there are no restrictions, which mechanisms will be in place to assure that the data are discoverable, accessible and intelligible?

not applicable

How will you share the data?

- Other, specify

Data will be shared via a Sharepoint put in place by the KULeuven ICTS.

With whom will the data be shared?

With whom will the data be shared?

- Within the university only

7. Responsabilities and Resources

Who is responsible for Data Management during the project? This will be the person who might receive questions on the data management aspects of the research project.

The PIs, prof. Bruno Cammue and prof. Bert Sels, bear the end responsibility of updating & implementing this DMP at CMPG and CSCE respectively.

Which additional resources are needed for the execution of the Data Management Plan?

none

Did you read the KU Leuven Data Management Policy? (find the link to the policy in the guidance).

- Yes