European Cooperation in Science and Technology

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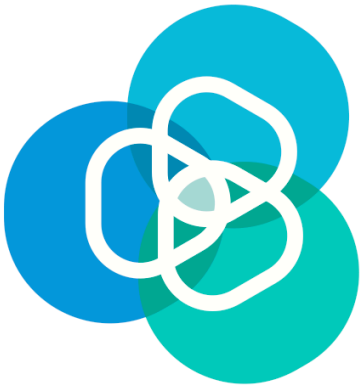
PARAQUA



PARAQUA

"Writing Retreat" Workshop Program

29 January 2024

Morning (9:00-12:00)

Plenary session on parasites database (Andrea Tarallo)

9:00-10:30 **Presentation of the database and reminder how to prepare data for new contributors**

One of the deliverables of ParAqua is a centralised database that will collect and share all the different data coming from WG1 and WG2 activities. One stream of data is coming from the sampling activities ParAqua members, consisting in data about in situ observations of algae and parasites presence in water bodies, along with other complementary variables (environmental ones and ecomorphological traits). To collect the data in a harmonized way, we are using a file containing three templates spreadsheets (https://docs.google.com/spreadsheets/d/1Df4RinQF2GgS-r8Wor8Cy7uADWrY3rap/edit?usp=drive_web&ouid=113032675332595297709&rtpof=true).

Current situation: *We designed the database and collected a first core of data.*

Location of files and structure: *all the useful links are available on the ParAqua Forum https://paraqua-cost.eu/members-area/topic/useful-links/*

A video showing how to fill in the templates using your own data is available here https://www.dropbox.com/s/tl64whnzg104pcp/how%20to%20fill%20in%20the%20template.mp4?dl=0

Tasks to be done during the Writing Retreat:

· I will show the last development of the database and demonstrate how to harmonise a dataset for the database.

· If you have occurrence data on zoosporic parasites of algae, bring them and we will harmonise them together.

· kick-off the datapaper with the in situ observation

10:30-11:00 Coffee break

11:00-12:00 **Discussion on database structure and layout for the graphical interface**

We have designed and implemented the database structure. The upcoming steps involve the data upload and integration process into the database, and creating a Graphical User Interface (GUI) to query the database.

Tasks to be done during the Writing Retreat:

· Brainstorming to gather the database GUI requirements.

Afternoon (14:00-18:00)

Parallel sessions to progress on ongoing deliverables

14:00- 15:45 **Working group on Occurrence paper** (Albert Reñé, Laura Garzoli, Alexandra Kraberg, Milos Stupar, Slawek Cerbin)

The goal of the WG1 activity "Occurrence of zoosporic parasites of algae in natural and industrial systems, including field surveys, experimental studies, and algal production ponds" is to produce a synthesis paper including a catalogue of zoosporic parasites of algae (micro- and macro-) with molecular sequences available. For that purpose, public sequences available in NCBI (GenBank) and associated metadata were downloaded using a query with established criteria for different taxonomic groups including algal parasites. That raw list of sequences was curated to restrict it to parasitic species, and additional information regarding the occurrence of the organisms generating those sequences was obtained from associated bibliography.

Current situation: *Nine Taxonomic groups finally included after the curation of sequences (Chytridiomycota, Oomycetes, Phytomyxea, Labyrinthulomycetes, Cryptomycota, Blastocladiomycota, Aphelida, Perkinsozoa, Syndiniales. Two files generated for each group: The curated list of sequences containing raw information from NCBI, and a catalogue file containing additional information retrieved from the literature.*

Location of files and structure: *There's a shared folder in Google Drive. https://drive.google.com/drive/folders/12uVTbHRm_8qatFDW6WlTmQ3kDrDwGx7x*

Tasks to be done during the Writing Retreat:

- *Complete missing information in the catalogue file to be obtained from the literature.*
- *Create a single sequences list file and harmonize vocabulary used in different fields.*
- *Download all curated sequences from NCBI and create the final dataset of sequences.*
- *Fill the table summarizing the information related to curated sequences.*
- *Hands-on writing of the manuscript draft.*

14:00- 15:45 **Working group on expertise database** (Gabriel Acien, Maja Berden Zrimec)

15:45-16:00 Coffee break

16:00 - 18:00 **Working group on Drivers paper** (Blagoy Uzunov, Alena Gsell)

The objectives towards which the work of this group is directed are related to the presentation of the proposed article outline and the main idea behind it. During the activity we will discuss the proposal and adopt the final version of the article structure. We will also try to find contributors at various points and set deadlines for writing individual chapters.

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30 January 2024

Morning (9:00-13:30)

Plenary session to introduce new activities

9:00-9:30 **Short introduction on literature databases and reviews** (Serena Rasconi)

In this presentation I will provide an overview of the different resources available for literature research and reference management softwares (Scholar, WOS, Zotero ...). Will be also introduced some elements on how to search for relevant information, the different steps to perform a review and the main characteristics of the different kind of literature reviews. I will conclude with an outline of the main opportunities for publishing with the Action and EU support.

9:30-10:15 **Meta-analysis related to parasites occurrence** (Alexandra Kraberg)

The Meta-analysis is to meant as a follow-up from/extension of the parasite occurrence paper. In the meta-analysis, if at all possible, we want to investigate the presence of different parasites in relation to their hosts to examine to what extent their distributions overlap. Before we can do this we need to establish what exactly the scope of the study is supposed to be (geographically and taxonomically) and what data actually have available that could be used for this study. Based on this assessment we need to discuss what other (external) data we can use, for instance Tara Oceans. In the discussions during the workshop we should get to a stage where the next step would be contacting additional scientists, searching databases etc. Importantly by the end of the workshop we should be in a position, where we can establish a working group/writing team to work on this paper

10:15-11:00 **Microbiome paper** (Belén Villarreal Toribio)

This is an activity meant for the young research and innovation group, but everyone is welcome to participate. The purpose of this activity is to explore the possibility of writing a literature review paper that can answer a specific question: To what extent are microbiome analyses useful for microalgae producers? During the activity, we will discuss the main topic, review existing literature on microbiome in microalgae culture, analyze experimental papers, and discuss the structure of the paper and the next steps. Lastly, we will evaluate if there is enough information available to write this article.

11:00-11:15 Coffee Break

11:15- 12:00 **Methodological challenges for studying fungus like organisms in water** (Caio Paula, Mariia Dimova, Dagmara Sirová)

*Although the study of parasitic fungi in aquatic environments has gained more attention in recent years, fungus-like organisms continue to be neglected. Fungus-like, such as oomycetes, play an important ecological role in aquatic systems, including the parasitic trophic mode. Paradoxically, although they are called "water molds" in English, their ecology and morphology in aquatic ecosystems is virtually unknown. These organisms exhibit a wide range of morphological characteristics, including a complex life cycle and developmental stages. This presentation will provide an overview of the main challenges to study fungus-like taxa, especially oomycetes, in aquatic systems. The aim of the activity is to identify people interested in compiling the methods already known for isolation, identification and detection by microscopy, as well as to start a small network to think about better methods for extracting more information about these groups of organisms by molecular (primers for example) and microscopic (probes and stains) methods. The shorter-term goal, is to write a review paper on aquatic oomycetes by end of summer 2024***.***

12:00- 12:45 **Fungi oomics definition** (Alice Retter, Doris Ilicic)

The idea is to propose new boundaries for the definition of AF. To show the trends associated with fungi in aquatic ecosystems over time we did data mining of a thousand studies mentioning predefined terms (e.g., aquatic fungi, freshwater fungi, marine fungi). In our opinion, interactivity, frequency, and activity should be included in the definition of AF. In the review we are going to support our opinion by discussing the most relevant studies on this topic and present case studies in the form of known aquatic lineages, such as chytrids. Even for fungal taxa that are more delimited in terms of being considered as aquatic (e.g., zoosporic lifestyle, known ability to impact various trophic levels in the aquatic environment) there is still lack of knowledge about their life cycle. Our narrative starts from the classic definition of AF that dates to the 70s, highlighting its problems and deficiencies, and will lead the reader further on into modern techniques that will allow us to delineate the term more accurately.

12:45 - 13:30 **Review paper WG3 on "Best practices in the prevention, management and control of zoosporic infections in production systems"** (Gabriel Acien, Maja Berden Zrimec)

Afternoon (15:00-18:00)

Parallel sessions of working groups to launch and start working on the activities presented in the morning

Meta-analysis related to parasites occurrence (Alexandra Kraberg)

Microbiome paper (Belén Villarreal Toribio)

Methodological challenges for studying fungus like organisms in water
(Caio Paula, Mariia Dimova, Dagmara Sirová)

Fungi oomics definition (Alice Retter, Doris Ilicic)

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Parallel sessions to progress and finalise ongoing work

Morning (9:00-12:00)

Working group on Occurrence paper (Albert/Laura/Alexandra/Milos/Slawek)

Microbiome paper (Belén)

Fungi oomics definition (Alice/Doris)

Review paper WG3 on "Best practices in the prevention, management and control of zoosporic infections in production systems" (Gabriel/Maja)

Afternoon (14:00-18:00):

Meta-analysis related to parasites occurrence (Alexandra)

Working group on Drivers paper (Blagoy/Alena)

Methodological challenges for studying fungus like organisms in water
(Caio Paula, Mariia Dimova, Dagmara Sirová)

18:00 Closing of the workshop