



TOXICROP

TOXICROP NEWSLETTER 2

March 2022

CYANOTOXINS IN IRRIGATION WATERS: Surveillance, Risk Assessment, and Innovative Remediation Proposals

TOXICROP aims: to cover knowledge gaps and concerns raised related with the use of raw waters contaminated with cyanobacteria and cyanotoxins in crop irrigation. Research and innovation activities will be developed to (a) assess the risk of use of eutrophic waters in agriculture; (b) development of low-cost technologies of water treatment and (c) improve the detection and quantification of cyanotoxins in water, soil and plant materials

TOXICROP || Events

ORGANISED

TOXICROP Mid-Term Meeting

Location: Video Conference

Date: 16/10/2020

The TOXICROP consortium partners met by video conference on the 16th October 2020 to discuss the progress of the project. The project officer Marina Royer Toupitsyna, representing the European Commission, attended the meeting. It was an opportunity for partners to socialize and establish closer discussions on current and future joint work, assess difficulties in the implementation of secondments and contingency plans for the covid-19 pandemic. All partners attended the meeting, and secondees had the opportunity to share their work and mobility experiences.

Funded by the European Union





This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 823860

TOXICROP Webinar

Location: Video Conference

Date: 14-15/04/2021



CYANOBACTERIA AND CYANOTOXINS IN WATER-SOIL-PLANT SYSTEMS: IMPACTS FOR AGRICULTURE AND WATER TREATMENT STRATEGIES

14TH APRIL - 15:30-17:30^{CEST}
NATURE-BASED SOLUTIONS FOR WATER TREATMENT
MODERATOR: PEDRO CARVALHO - AARHUS UNIVERSITY - DENMARK

HARMFUL ALGAE EVENTS (HAB) AND WATER QUALITY IN THE CIÉNAGA GRANDE SANTA MARTA (COLOMBIAN CARIBBEAN)
Luisa Espinosa - INVEMAR - COLOMBIA

NATURE-BASED SOLUTIONS FOR WATER MANAGEMENT: A PRIVATE SECTOR PERSPECTIVE
Fabio Masi - IRRIDRA s.r.l. - ITALY

NATURE-BASED SOLUTIONS FOR WATER MANAGEMENT IN CIRCULAR CITIES
Göteborg Lammgraber - BOKU University - AUSTRIA

ROUND TABLE (30min)

15TH APRIL - 15:30-17:30^{CEST}
EFFECTS OF CYANOTOXINS IN AGRICULTURAL PLANTS
MODERATOR: ALEXANDRE CAMPOS - CIIMAR - PORTUGAL



SUBCELLULAR EFFECTS OF CYANOBACTERIAL TOXINS (MICROCYSTINS AND CYN) AND THEIR CONSEQUENCES AT THE WHOLE-PLANT LEVEL
Csaba Máthé - UNIVERSITY OF DEBRECEN - HUNGARY

THE IMPORTANCE OF THE DEVELOPMENTAL STAGE IN SHAPING CROP'S FUNCTIONAL RESPONSE TO MICROCYSTINS-RICH IRRIGATION WATER
Eni Levizou - UNIVERSITY OF THESSALY - GREECE


HAVE CYANOBACTERIA AND MICROCYSTINS CAUSED PROBLEMS IN THE FINNISH AGRICULTURE
Jussi Meriluoto - AAO AKADEMII UNIVERSITY - FINLAND

(30min) ROUND TABLE

#TOXICROP_WEBINAR
WWW.TOXICROP.COM



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This webinar organized by CIIMAR and AU aimed to create awareness and promote the debate concerning the occurrence of HABs in the environment and water pollution. This webinar was organized in 2 sessions, one dealing with the emerging technologies based on nature capable of controlling water pollution and limit toxic cyanobacteria outbreaks (14th October) and another session on the 15th October dedicated to the effects of cyanotoxins on Agricultural Plants. Renowned scientists from both fields of science, provided Interesting talks and participated in round table with the audience.

TOXICROP || Scientific Missions

ORGANISED

Matosinhos - Portugal

Location: Matosinhos - Portugal

Venue: CIIMAR

Date: 31/08/2020 – 30/11/202

Staff members from CIFGA, José Manuel Antelo and Inés Rodriguez, visited CIIMAR in September and October 2020 to participate in the research activities that both partners are jointly developing in the framework of WP5. The secondment was an opportunity to both technicians to share knowledge and skills in instrumental analysis and cyanobacteria growth in laboratory conditions, with the team from CIIMAR. Several cyanobacteria strains, selected from LEGE culture collection (<https://lege.ciimar.up.pt/>), were grown and analyzed concerning toxin production.

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Lugo - Spain

Location: Lugo - Spain

Venue: CIFGA

Date: 15/11/2021 – 15/12/2021



The researcher Alexandre Campos from CIIMAR, visited the partner CIFGA at the end of the year 2021. The visit aimed to continue the collaborative activities set by both partners. Alexandre Campos, together with the colleagues from CIFGA Eva Cagide, Mercedes Álvarez, Álvaro Antelo and Silvia Ascariz, analyzed the toxin profile of several toxic strains of microalgae. Alexandre Campos experienced and learned the procedures implemented by CIFGA for production of standard materials for toxin analysis and requirements for certification.

Maia - Portugal

Location: Maia - Portugal

Venue: NOSTOC

Date: 01/11/2021 – 01/03/2022



Antonio Lira, a PhD student from USE visited NOSTOC and CIIMAR, at the end of 2021 and beginning 2022. Antonio Lira was developing research work in the field of cyanotoxins toxicology during his research mission. The bioassays used by the PhD student, employing human cell lines, were evaluated by the partner NOSTOC for potential application in the field of cyanotoxins monitoring and assessment of water quality. At the end of his secondment a presentation was made at CIIMAR.

TOXICROP || Publications

Latest Publications

Mugani R, Aba RP, Hejjaj A, Khalloufi F, Ouazzani N, Almeida CMR, Carvalho PN, Vasconcelos V, Campos A, Mandi L, Oudra B. Multi-Soil-Layering Technology: A New Approach to Remove *Microcystis aeruginosa* and Microcystins from Water. *Water* 2022, 14, 686. <https://doi.org/10.3390/w14050686>

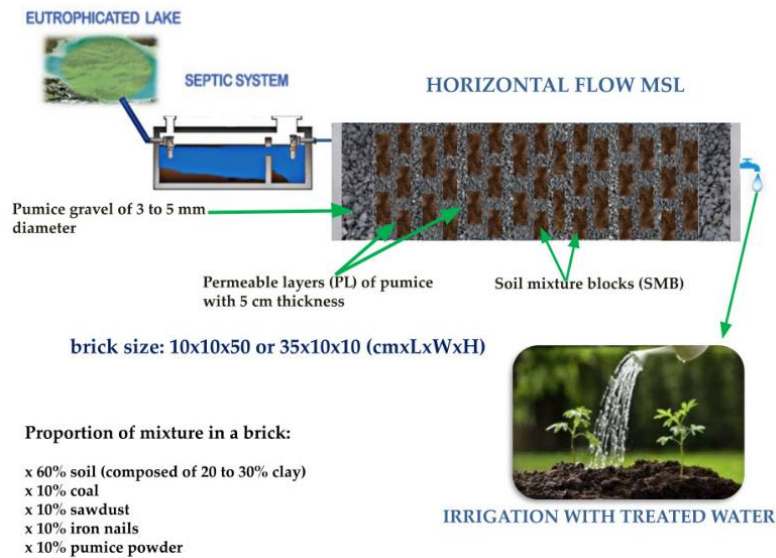
Haida M, El Khalloufi F, Mugani R, Redouane M, Campos A, Vasconcelos V, Oudra B. Effects of Irrigation with Microcystin-Containing Water on Growth, Physiology, and Antioxidant Defense

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in Strawberry *Fragaria vulgaris* under Hydroponic Culture. *Toxins* 2022, 14, 198.
<https://doi.org/10.3390/toxins14030198>.



From *Water* 2022, 14, 686

Special Issues

1. Learn from Plant Toxins and Phycotoxins: Impacts and Application

(https://www.mdpi.com/journal/plants/special_issues/Plant_Toxins_Phycotoxins). *Plants*.

Deadline 30 Dec 2021

2. Cyanobacteria, Microalgae, and Fungi: Biotechnology and Toxicology

(https://www.mdpi.com/journal/microorganisms/special_issues/Cyanobacteria_Microalgae_and_Fungi_Biotechnol_and_Toxicol). *Microorganisms*. Deadline 31 May 2022.

3. Analytical, Toxicological and Molecular Biological Assessment of Cyanobacterial Toxins

(https://www.mdpi.com/journal/toxins/special_issues/cyanobacterial_tox). *Toxins*. Deadline

31 May 2022.

TOXICROP || NEWS

CIIMAR leads European study on water quality in agriculture

Link: <https://noticias.up.pt/ciimar-lidera-estudo-europeu-sobre-a-qualidade-da-agua-na-agricultura/>

TOXICROP || Upcoming Events

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7CIC Conference will be held in 18-20th July, 2022 at Ponta Delgada, Azores, Portugal.

For more information, visit: <https://7cic.com/>



12 ICHA Conference will be held in 22-27th May, 2022 at Toledo, Ohio, USA.

For more information, visit: <https://www.bgsu.edu/bowen-thompson-student-union/conference-and-event-services/international-conference-on-toxic-cyanobacteria.html>



COPENHAGEN

SETAC EUROPE 32ND ANNUAL MEETING
15-19 MAY 2022 | COPENHAGEN, DENMARK + ONLINE

SETAC Europe 32nd Annual Meeting will be held in 15-19th May, 2022 at Copenhagen, Denmark. For more information, visit: <https://europe2022.setac.org/>



17th International Conference of the IWA Specialist Group on Wetland Systems for Water Pollution Control Meeting will be held in 6-10th November, 2022 at Bangkok, Thailand. For more information, visit: <http://www.icws2022.com/>

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