



ex-aqua

EX-AQUA SUMMER SCHOOL ON MICROALGAE AND MACROALGAE AQUACULTURE

Dates: 14-18 September 2026

Meeting Venue: NIMRD
Boulevard Mamaia 300, Constanța 900581, Romania

<https://maps.app.goo.gl/DvG3S8HMH3FPNap6>

Coordination team:

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Agenda

EX-AQUA Summer School on Microalgae and Macroalgae Aquaculture

Day 1 - 14 September		
Time	Topic	Presenter
9:00 - 9:30	Welcome and registration	NIMRD
9:30 – 10:30	Introduction to macroalgae cultivation: General concepts: • Brief history of macroalgae cultivation • Macroalgae: definition, ecological contributions, and economic valorification potential • Introduction to seaweed cultivation: growth medium composition, control of contamination and growth control	Olivier De Clerk Jonas Blomme Oana Marin
10:30 – 11:30	Macroalgae restoration: • General aspects - Romanian Black Sea case study • Insights from restoration challenges, overview of the selected species for cultivation and restoration, based on ecological relevance and distribution • Early development of brown algae	Olivier De Clerk Oana Marin
11:30 – 12:00	Coffee break – 30 min	
12:00 – 13:00	Visit in the macroalgae laboratory – practical setups: • Introduction to monitoring tools (microscopy, water quality, etc.) • Overview of existing macroalgae cultures – cultivation conditions	Jonas Blomme Oana Marin
13:00 – 14:00	Lunch break	
14:00 – 16:00	Practical laboratory activities - Part I: • Setting up: sample processing, <i>Ulva</i> sporulation demo, microscopy session, and life-cycle presentation • Water quality measurements – salinity, pH, DO, seawater temperature	Jonas Blomme Oana Marin
Day 2 - 15 September		
Time	Topic	Presenter



9:00 – 10:00	Genetic analysis for <i>Ulva</i> cultivation and scale-up - EULVA project: <i>Ulva</i> diversity in Europe - Strain identification, diversity assessment, importance of selecting robust cultivation strains	Olivier De Clerk
10:00 – 11:00	Bringing macroalgae into cultivation – Case study: the key habitat species <i>Gongolaria barbata</i> - Sampling time to start a new culture; different development stages - Key bottlenecks in <i>ex-situ</i> cultivation and habitat restoration	Oana Marin
11:00 – 11:30	Coffee break – 30 min	
11:30 – 13:00	Long term preservation - herbarium preparation and silica-gel drying for voucher specimens used in genetic analysis and long-term and cryopreservation Functional biology - Seaweed genomics and molecular tools	Jonas Blomme
13:00 – 14:00	Lunch break	
14:00 – 16:00	Practical laboratory activities - Part II: - Day-2 assessment of the <i>Ulva</i> culture - Microscopy session, measurements, status, challenges - Presentation of <i>Gongolaria barbata</i> cultures in various growth stages, experimental design	Jonas Blomme Oana Marin
Day 3 - 16 September		
Time	Topic	Presenter
9:00 – 11:00	Macroalgae cultivation as a pathway for sustainable valorization and ecological restoration participant-driven perspectives and ideas	Olivier De Clerk Jonas Blomme Oana Marin
11:00 – 11:30	Coffee break – 30 min	
11:30 – 12:30	Practical laboratory activities – Part III: - assessment of <i>Ulva</i> culture progression - growth trends and culture stability - Scaling-up methods	Jonas Blomme Oana Marin
12:30 – 13:30	Lunch break	
13:30-14:30	Microalgae aquaculture fundamentals Brief history of microalgae cultivation General microalgae aquaculture concepts: - Definition and ecological importance of microalgae. - Main microalgal groups used in aquaculture. - Mixed, unialgal and axenic cultures. - Main growth phases - General production workflow: isolation → cultivation → monitoring → scale-up → harvesting and biomass utilisation.	Oana Vlas
14:30 - 15:30	From laboratory to pilot-scale cultivation systems	Stephan Ende



15:30 – 17:30	Practical laboratory activities - Part IV: Culture media preparation, microscopy, and culture monitoring	Oana Vlas Stephan Ende
Day 4 – 17 September		
9:00 – 11:00	Environmental factors influencing algal growth • General presentation about nutrients, light, temperature, salinity, pH, CO₂ and mixing • Nutrition and culture medium optimisation	Oana Vlas Stephan Ende
11:00 – 11:30	Coffee break – 30 min	
11:30 – 13:00	Practical laboratory activities – Part V: Setting up and inoculating a photobioreactor culture	Oana Vlas Stephan Ende
13:00 – 14:00	Lunch break	
14:00 – 15:00	Harvesting, concentration and primary biomass processing	Stephan Ende
15:00 – 16:00	Extraction and biochemical analysis of metabolites	Stephan Ende
Day 5 – 18 September		
9:00 – 10:00	Worldwide applications of algal biomass in the bioeconomy, aquaculture and biotechnology	Stephan Ende
10:00 – 11:00	Future perspectives for algae aquaculture in Romania and the Black Sea region • Biological desalination, carbon capture and sustainable biotechnology • Black Sea Microalgae: Opportunities and Challenges	Oana Vlas Stephan Ende
11:00 – 11:30	Coffee break – 30 min	
11:30 – 13:00	Case studies and experience sharing: Algae cultivation in participating countries	All
13:00 – 14:00	Lunch break	
14:00-14:30	Summer School closing session: Participant feedback and awarding of certificates of participation	All



Travel and accommodation information

For travel and accommodation arrangements please consider following:

- For travel the best option is to fly to Bucharest (Henri Coandă International Airport). From the airport there are good train connections to Constanta (<https://bilete.cfrcalatori.ro/en-GB/Itineraries>).
- There is a very good bus connection from Constanta train station to the hotels around the institute. Payment for the trip can be made on the bus with the card.
- Also, UBER and BOLT are available (with very good prices).
- I do not recommend taking the yellow taxis from the train station.

For accommodation there are many options, as the institute is situated next to Mamaia Resort Station.

Some hotels that can be considered:

- Hotel Boulevard Mamaia - <https://maps.app.goo.gl/7R5rGxYhzJX24h9BA> (possible disturbance during the day due to some renovation works)
- Hotel Parc - <https://maps.app.goo.gl/6DAk511ziardAG1R8>
- Hotel Del Mar & Conference Center - <https://maps.app.goo.gl/dsYXpWhzjmM4rrh69>
- Hotel Dacia Sud - <https://maps.app.goo.gl/4x9N58CoM1dWQ7pU7>
- Hotel On Plonge Junior - <https://maps.app.goo.gl/G35jXqfrQxqpKDJLA>

This are just a few of the Hotels available close to the institute (10-20 min walk)

