

8th International Conference on Duckweed Research and Applications

28 September – 2 October 2026

Royal Palace of Portici, Portici, Italy

PROGRAMME

MONDAY 28 SEPTEMBER 2026

Registration and Poster Hanging · Sala Cinese

14:00–15:30

Welcome & Institutional Greetings · Sala Cinese

15:30–16:30

Honorary Session — Elias Landolt Centenary

16:30–17:10

Sala Cinese · Convener: Laura Morello

16:30 Elias Landolt (1926 – 2013), father of modern duckweed research
APPENROTH, Klaus J.

Guided Visit to the Royal Palace of Portici · MUSA / Botanical Garden

17:10–18:40

Apericena · Botanical Garden

18:40–20:40

TUESDAY 29 SEPTEMBER 2026

Cell Biology, Physiology & Metabolisms: Invited Lecture

08:30–09:00

Sala Cinese · Convener: Asaph Aharoni

08:30 Living on less: miniaturization in duckweed
BISHOPP, Anthony

Cell Biology, Physiology & Metabolisms I

09:00–10:30

Sala Cinese · Convener: Asaph Aharoni

09:00 Trophic diversity in duckweed: mixotrophy, more than the sum of its extremes
hou, hongwei

09:15 From duckweed stress physiology to d-amino acid signaling: insights across biological kingdoms
MONSELISE, Edna Ben-Izhak

09:30 *Lemna trisulca*: contribution to the progress in understanding the mechanism of chloroplast movements
GABRYS, Halina

09:45 DWARPH: an open source, scalable platform for high-throughput environmental response mapping in duckweed
MARKUS DAHL, Lauritsen

10:00 Single-nuclei transcriptomics reveals a novel frond nutrient-uptake cell type in duckweeds
WARE, Alexander*

10:15 6-Benzylaminopurine modulates photosynthetic performance and cytokinin homeostasis in *Lemna minor* under salt stress
PERŠIĆ, Vesna

Coffee Break · Sala Cinese

10:30–11:00

Cell Biology, Physiology & Metabolisms II

11:00–12:30

Sala Cinese · Convener: Maria Adelaide Iannelli

11:00 Development of bioluminescence reporter systems using duckweed plants
OYAMA, Tokitaka

11:15 A novel workflow for deep metabolome annotation and interpretation in *Lemna minor*
ZHANG, Mi

11:30 ABA-induced triacylglycerol accumulation and lipid remodeling in *Lemna minor* toward metabolic engineering of duckweed
YAMAOKA, Yasuyo

11:45 A complete seed-to-seed cycle beyond vegetative propagation reveals seed development and triacylglycerol mobilization in *Lemna aequinoctialis*
JE, Sujeong

12:00 Engineering a complex plant biosynthetic pathway in the giant duckweed
HUBER, Meret

12:15 Duckweed nanoparticles mediate bioactive lipid trafficking
POLIKOVSKY, Mark

Genes, Genomes & Evolution: Invited Lecture**14:00–14:30**

Sala Cinese · Convener: Alexander Ware

- 14:00** Small meets smaller: rewiring small RNA silencing in duckweeds
MARÍ-ORDÓÑEZ, Arturo

Genes, Genomes & Evolution I**14:30–15:30**

Sala Cinese · Convener: Alexander Ware

- 14:30** Duckweeds – an example for evolution in flux
SCHUBERT, Ingo
- 14:45** Transcriptomic and epigenetic insights into flowering and sexual reproduction in *L. aequinoctialis*
MATEO-ELIZALDE, Cristian
- 15:00** Building a spatial and transcriptomic framework for transcription factor regulation in *Wolffia australiana*
COX, Kevin
- 15:15** The impact of polyploidy and hybridization on gene expression in duckweeds
CROMBEZ, Ewout

Sponsor Presentation: Phenovation**15:30–15:45**

Sala Cinese · Convener: Vincent Jalink

Genes, Genomes & Evolution II**16:15–17:00**

Sala Cinese · Convener: Ingo Schubert

- 16:15** *Wolffia arrhiza*: a cryptic species complex within the genus *Wolffia*
STEPANENKO, Anton
- 16:30** On the way to domesticate duckweeds: hidden sexuality, hybridization and polyploid evolution
LEE, Yuri
- 16:45** Investigating the secondary loss of auxin signalling components in duckweed
SMITH, Claire

Poster Session**17:15–18:30**

Sala Monumentini

WEDNESDAY 30 SEPTEMBER 2026

Microbiome & Interactions: Invited Lecture

08:45–09:15

Sala Cinese · Convener: Tokitaka Oyama

- 08:45** Constructing designer duckweed holobionts for comprehensive analyses of plant-microbe interactions
LAM, Eric

Microbiome & Interactions I

09:15–10:15

Sala Cinese · Convener: Tokitaka Oyama

- 09:15** Vitamin B12 accumulation in duckweed emerges from a cooperative, environmentally responsive microbiome
GILLOR, Osnat
-
- 09:30** Potential cobalamin-producing *Wolffia globosa*-associated microbiome
THAMCHAIPENET, Arinthip
-
- 09:45** Microbiome assembly and transmission across the turion–vegetative growth cycle in *Spirodela polyrhiza*
PRUDOT D'AVIGNY, François
-
- 10:00** Why algal blooms suppress duckweed growth: mechanisms behind growth inhibition
SZABO, Sandor

Coffee Break · Sala Cinese

10:15–10:45

Ecology & Diversity: Invited lecture

10:45–11:15

Sala Cinese · Conveners: Laura Morello; Manuela Bog

- 10:45** Duckweeds as models for understanding evolution in ecological communities and floral diversity
XU, Shuqing

Ecology & Diversity I

11:15–12:45

Sala Cinese · Convener: Manuela Bog

- 11:15** Plasticity and adaptation of fatty acid profiles in four Lemnaceae species under varying thermal and nutrient regimes
BOG, Manuela
-
- 11:30** Landolt's collection 2.0 – Valorization and digitization of duckweed germplasm resources
MORELLO, Laura
-
- 11:45** Near-future warming amplifies natural heatwave impacts and reorganizes freshwater communities
NOUERE, Sara
-
- 12:00** The immediate impacts of whole genome duplication (neopolyploidy) in *Spirodela polyrhiza* on its functional traits and competitive outcomes.
TURCOTTE, Martin
-
- 12:15** The *Wolffia* effect: from biological to physical anchoring — meniscus engineering in a rootless duckweed
ROMANO, Leone Ermes

Light Lunch · Sala Cinese

12:45–14:00

Spontaneous networking activity

Sala Cinese ·

14:00–14:45

Excursion to Herculaneum Archaeological Site

14:45–17:45

THURSDAY 01 OCTOBER 2026

Applications — Food, Feed & Nutrition: Invited Lecture

08:30–09:00

Sala Cinese · Convener: Marcel A.K. Jansen

08:30 Circular Feed Innovations for Sustainable Aquaculture and Blue Transformation
TOPPE, Jogeir

Applications I a — Food, Feed & Nutrition

09:00–10:30

Sala Cinese · Convener: Marcel A.K. Jansen

09:00 High quality and quantity duckweed biomass production & protein, starch biosynthesis
ZHAO, Hai

09:15 Optimising *Lemna* cultivation for food applications
VAN DER MEER, Ingrid

09:30 Growing duckweed indoors: how cultivation conditions and management strategies modulate productivity and nutritional quality - A systematic review
DEMARIA, Sara

09:45 Non-invasive estimation of duckweed biomass quality can be achievable by spectral signatures
OLÁH, Viktor

10:00 High-Throughput non-destructive prediction of duckweed protein content using hyperspectral imaging and deep learning
HUANG, Weijuan

10:15 AI-Driven virtual screening of *Lemna minor* phenolic compounds in the search for novel glycemic control agents
ALVES, Felipe

Coffee Break · Sala Cinese

10:30–11:00

Applications I — Food, Feed & Nutrition: Invited Lecture

11:00–11:30

Sala Cinese · Convener: Eric Lam

11:00 From traditional food to emerging industry: the rise of *Wolffia* in Thailand
MEETAM, Metha

Applications I b — Food, Feed & Nutrition

11:30–12:30

Sala Cinese · Convener: Eric Lam

11:30 Fog-o-ponics; a novel duckweed cultivation method
JANSEN, Marcel A.K.

11:45 Comparison of ultrasound- and pulsed electric field-assisted protein extraction from fresh *lemna minor*: process evaluation and functional characterization
MAAG, Patricia

12:00 UHPLC-MS/MS profiling and biological activities of phenolic compounds from three duckweed species for the identification of potential health-promoting biomolecules
UJONG, Anim

12:15 Synergistic nutrient formulations and thermal drying strategies for enhanced duckweed nutrition
CHAN, Derek Juinn Chieh

Light Lunch · Sala Cinese

12:30–14:00

Applications II — Wastewater Remediation

Sala Cinese · Convener: Viktor Oláh

14:00–15:30

14:00 Tripartite synergy in a baffled duckweed reactor for 2-Chloro-4-Nitroaniline remediation: metabolic pathways, microbial dynamics, and biochar valorization
TAWFIK, Ahmed

14:15 Exploring duckweed for remediation of, and resource recovery from industrial fish filleting wastewater
KATSARA, Alexandra

14:30 Group therapy: Macrophyte polyculture of *Lemna* species and *Azolla filiculoides* for the optimized remediation of meat processing wastewater
CHEN, Jingrou

14:45 Bioaccumulation and phytotoxicity of ionic rare earth elements (Cerium, Neodymium, Samarium) in *Lemna gibba*
KOLESZÁR, Gergő

15:00 Dried duckweed biomass as a Boron-binding soil amendment produced through nutrient recovery from agricultural drainage water
KUTMAN, Umit Baris

15:15 Integrating duckweed into a chain of brine reuse enhancing the value of desalination for food production: the case of Somalia
ORON, Gideon

Group Photo · Sala Cinese

15:30–16:00

Coffee Break · Sala Cinese

16:00–16:30

Applications IV — Round Table (challenges and opportunities of duckweed as novel crops)

Sala Cinese · Convener: Metha Meetam

16:30–18:00

Conference Dinner · Sala Cinese

18:30–21:30

FRIDAY 02 OCTOBER 2026

Applications III — Invited Talk

Sala Cinese · Convener: Olena Kishchenko

08:30–09:00

08:30 Antinutritives in duckweeds
SREE, K. Sowjanya

Applications III — Biotech

Sala Cinese · Convener: Olena Kishchenko

09:00–09:45

09:00 Duckweed as a platform for oral vaccines in sustainable fish aquaculture
KISHCHENKO, Olena

09:15 Towards a subunit oral vaccine to Newcastle disease in transgenic duckweeds
VUNSH, Ron

09:30 Recombinant Expression of Silk Sericin in Duckweed (*Lemna japonica*) as a Sustainable Platform for Functional Biomaterial Production
FORTMUELLER, Julia Eva

Poster session

Sala Monumentini

09:45–10:45

Poster ID

P01 Understanding Flowering in *Lemna*
LINCOLN, Anne

P02 Optimizing agitation rate and hydraulic retention for wastewater remediation by *Lemna* species and *Azolla filiculoides*
CHEN, Jingrou

P03 Bioremediation of African catfish (*Clarias gariepinus* (Burchell, 1822)) recirculating aquaculture system process water with duckweed *Lemna minor* L. (9440)
SONNENFELD, Alexej

P04 Vegetable protein from edible aquatic plants: safe, sustainable production and resilience against climate change
CAROCHO, Marcio

P05 Insights into flowering induction and reproductive development in duckweeds
IANNELLI, Maria Adelaide

P06 Cobalt-driven restructuring of the duckweed endophytic microbiome enhances bioavailable vitamin B12
RISHMAWI, Dalia

P07 Investigating siRNA-mediated silencing in duckweeds, a potential model for translational repression in plants
DIEZMA-NAVAS, Laura

P08 Integrating duckweed into a chain brine users: enhancing the value of desalination byproducts
ORON, Gideon

P09 Transcriptomic and morphological responses to salt stress in *Wolffia australiana*
HENRY, Caroline

P10	Physiological and transcriptomic responses of <i>Spirodela polyrhiza</i> to distinct colonization strategies by plant growth-promoting bacteria <i>RUENPHAM, Karnjana</i>
P11	Duckweed production at an IMTA system in Ireland <i>MARGOT, Clair</i>
P12	Haplotype-resolved genome assembly and single-nucleus sequencing provide insights into the simplest flower development in <i>Wolffia microscopica</i> <i>CHAKRABORTY, Abhisek</i>
P13	Dietary supplementation with <i>Lemna minor</i> mitigates the metabolic alterations induced by ingestion of PLA nanoplastic in a rat model <i>LOMBARDI, Martina; VIGGIANO, Andrea</i>
P14	Pollination and seed development in <i>Lemna aequinoctialis</i> <i>KOLEHMAINEN, Anna</i>
P15	Direct and indirect effects of snail herbivory on <i>Spirodela polyrhiza</i> in a two-year outdoor experiment <i>SCHÄFER, Martin</i>
P16	Modulation of silver nanoparticle phytotoxicity by surface coating and microplastic co-exposure in <i>Lemna minor</i> <i>VITKO, Sandra</i>
P17	Intra-specific variation in growth and photosynthetic responses of duckweed <i>Lemna gibba</i> to manganese <i>ABEBAW, Amare Fassil</i>
P18	Cellular-level visualization of salinity stress responses in <i>Wolffia australiana</i> <i>SUSSMAN, Hayley</i>
P19	Small RNA biogenesis in Duckweeds <i>KRASNOVID, Filipp</i>
P20	Application of duckweed as an organic amendment for food production. <i>MANYENGA, Natasha</i>
P21	Towards a zero-waste duckweed biorefinery: pulse electric field and high-pressure assisted fractionation for enhanced recovery of functional ingredients <i>UJONG, Anim</i>
P22	A trait lost for millions of years: investigating the loss of root hairs in duckweed <i>FAIRBURN, Rebecca</i>
P23	How long do plants remember? transgenerational stress memory in a duckweed-aphid system <i>DINIZ RODRIGUES BATISTA, Enrico</i>
P24	Species-specific growth inhibition by extracellular self-DNA in a two-species duckweed community and its association with oxidative stress <i>SANJAYA, Wilhelmus Terang Arga</i>
P25	Self-DNA effects on growth, oxidative stress, and nutritional quality of <i>Lemna perpusilla</i> : in vitro <i>SILVANO, Jesis</i>
P26	Sustainable commercialization of duckweed production in Malaysia <i>CHAN, Derek Juinn Chieh</i>
P27	Comparison of imaging methods for RGR determination and early stress detection in <i>Lemna minuta</i> grown on buffalo wastewater <i>GIULIANO, Alberto</i>
P28	Assessment of field-grown duckweed biomass by spectral indices <i>SZILÁGYI, Dóra; OLÁH, Viktor</i>
P29	Clone-dependent germination and post-dormancy growth of ABA-induced turions in <i>Spirodela polyrhiza</i> <i>AMRI, Raja</i>
P30	Transgenic <i>Spirodela polyrhiza</i> and <i>Lemna minor</i> for oral delivery of highly glycosylated human Interferon Alpha-2b <i>PROKHOROVA, Yelizaveta</i>

- P31** Marked inter- and intraspecific duckweed diversity enables selection of more suitable genotypes for the valorization of raw dairy-wastewater
PERNA, Cristian
- P32** **Influence of recipient gas-exchange capacity on axenic in vitro cultivation of *Wolffia arrhiza***
FAES, Zoé; DE MEULENAER, Bruno, DHOOGHE Emmy
- P33** **dnadis: an alignment-based comparative comprehension tool for *de novo* assemblies**
ERNST, Evan

Coffee Break · Sala Cinese

10:45–11:15

Award Ceremony

11:15–12:30

Sala Cinese · Conveners: Klaus J. Appenroth; Laura Morello; Leone Ermes Romano

Light Lunch · Sala Cinese

12:30–14:00

General Assembly, K.J. Appenroth Honors & Closing Ceremony

14:00–16:00

Sala Cinese · Conveners: Sowjanya Sree Kandregula; Marcel A.K. Jansen; Asaph Aharoni; Klaus J. Appenroth; Leone Ermes Romano; Laura Morello; Eric Lam