

Program ICDRA 2022

6th INTERNATIONAL CONFERENCE ON
DUCKWEED RESEARCH AND APPLICATIONS
29 May to 01 June 2022

Sunday May 29

17:00 Bus departure Quedlinburg to IPK, Gatersleben

16:00 Registration, poster hanging

18:00 Opening address

1 **18:30 Plenary talk** Eric Lam, Rutgers U, NJ, USA

Duckweed hibernation: unraveling the molecular basis of the turion induction switch in *Spirodela polyrhiza*

19:30 Welcome reception

21:00 Bus departure IPK, Gatersleben to Quedlinburg

Monday May 30

Genomics & evolution

8:00 Bus departure Quedlinburg to IPK, Gatersleben

2 **8:30 Invited talk** Rob Martienssen, Cold Spring Harbor Laboratory, NY, USA
Genomic and epigenomic consequences of clonal growth habit in the Lemnaceae

3 **9:00 Invited talk** Shuqing Xu, Muenster U, DE

The Giant duckweed, a model system for studying plant evolution in a multitrophic community

4 **9:30** Laura Morello, IBBA CNR, Milano, IT

TBP fingerprinting unveiled interspecific hybridization in the genus *Lemna*

5 **9:50** Ljudmilla Borisjuk, IPK Gatersleben, DE

Integrative analysis of growth dynamics in duckweed

6 **10:10** Dombey Rodolphe, Gregor Mendel Institute, Austria

Epigenetic regulation of transposable elements in duckweeds

10:30 ☕ **Coffee break**

Differentiation & stress

7 **11:00 Invited talk** K. Sowjanya Sree, Kerala Central U, IN

Nutrient stress on duckweeds

8 **11:30 Invited talk** Alexandra Chavez, Muenster U, DE

Non-genetic inheritance alters stress resistance across generations in the Giant duckweed

9 **12:00** Osnat Gillor, BGU Negev, IL

All in one: the microbiome of a rootless plant

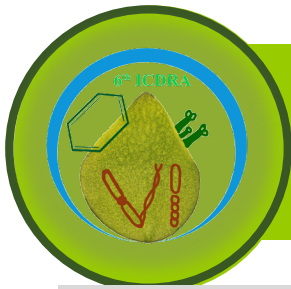
10 **12:20** Minako Isoda, Kyoto U, JP

Analysis on floral induction of *Wolffiella hyalina*

11 **12:40** Alexander Ware, Nottingham U, UK

To root or not to root: evolution of rootlessness in duckweed

13:00 🍰 **Lunch (Main course, dessert, 1 drink)**



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Monday May 30

Ecology, microbiome & stress

- 12 14:00 **Invited talk** Marcel Jansen, Cork U, IE
Lemnaceae as a key player in the circular economy; examples of wastewater valorization in Ireland
- 13 14:30 **Invited talk** Quinten Bafort, Ghent U, BE
Stress tolerance in tetraploid *Spirodela polyrhiza*
- 14 15:00 Simona Paolacci, UCC/BMRS, West Cork, IE
Wastewater valorization in an integrated multitrophic aquaculture system; assessing nutrient removal and biomass production by duckweeds
- 15 15:20 Masaaki Morikawa, Hokkaido U, JP
Dual function of environmental bacteria that enable duckweed prosperity
- 16 15:40 **Conference Photo**
16:00 ☕ **Coffee, fruits & cake**

16:30 **Poster presentation & viewing I**

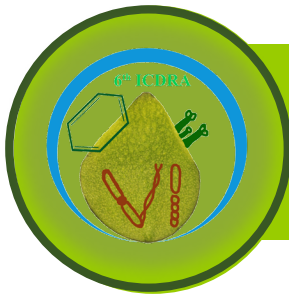
- 17 18:30 **Public lecture** Klaus-J. Appenroth, FSU Jena, DE
Eine neue Kulturpflanze mit großem Potential für Ernährung, Wasserreinigung und Energie
- 19:30 **General Assembly**
News from Steering Committee; Suggestions for 7thICDRA, Round-table discussion: "Duckweed futures", Joint projects etc.
- 20:30 🍷 **BBQ & beer**
- 23:00 **Bus departure** IPK, Gatersleben to Quedlinburg

Tuesday May 31

Physiology & metabolism I

- 8:00 **Bus departure** Quedlinburg to IPK, Gatersleben
- 18 8:30 **Invited talk** Asaph Aharoni, WIS, Rehovot, IL
The underwater chemical world of duckweed
- 19 9:00 **Invited talk** Tokitaka Oyama, Kyoto U, JP
Variability of chronobiological characteristics in duckweed
- 20 9:30 Cristian Mateo-Elizalde, Cold Spring Harbor Laboratory, NY, USA
Unraveling genetic mechanisms of sexual reproduction in duckweed
- 21 9:50 Moshe T. Halpern, ARO, Volcani Institute, IL
Using rootless duckweed *Wolffia globosa* as a model to clarify the effect of e[CO₂] on NO₃ photo-assimilation in C3 plants
- 22 10:10 Philippe Juneau, Quebec U, Montreal, CA
How aminomethylphosphonic acid (AMPA), the main glyphosate metabolite, affects *Lemna minor* photosynthesis?

10:30 ☕ **Coffee break**



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Tuesday May 31

Physiology & metabolism II

- 23 11:00 **Invited talk** Paul Ziegler, Bayreuth U, DE
The life cycle of *Spirodela polyrhiza*: a model for aquatic plant overwintering?
- 24 11:30 Darlielva do Rosario Freitas, UFV, BR
Different sources of iron modulate responses in the antioxidant system in plants
- 25 11:50 Olena Kishchenko, Huaiyin Normal U, CN
The dynamics of NO₃ and NH₄⁺ uptake in duckweed are coordinated with the expression of major nitrogen assimilation genes
- 26 12:10 Shogo Ito, Kyoto U, JP
Development of a cryopreservation protocol for a variety of duckweed meristems by the vitrification-cryo-plate method
- 27 12:30 Manuela Nagel, IPK Gatersleben, DE
Advances in droplet-vitrification and -freezing of *Lemna* fronds for long-term preservation of duckweeds

13:00  **Lunch (Main course, dessert, 1 drink)**

Genome organization, diversity & imaging

- 28 14:00 **Invited talk** Nikolai Borisjuk, Huaiyin Normal U, CN
Organization and evolution of duckweeds ribosomal RNA genes
- 29 14:30 **Invited talk** Todd Michael, Salk Institute, La Jolla, CA, USA
Duckweed genome architecture
- 30 15:00 Phuong Hoang, Dalat U, VN & IPK Gatersleben, DE
Chromosome numbers, genome sizes and evolutionary implication for genome evolution and diversity of Lemnaceae
- 31 15:20 Anton Stepanenko, Huaiyin Normal U, CN
Biodiversity of Lemnaceae in water reservoirs of Ukraine and China assessed by double chloroplast DNA barcoding
- 32 15:40 Viktor Olah, Debrecen U, H
Family portrait of a duckweed colony: What can imaging-based phenotyping tell us about stress

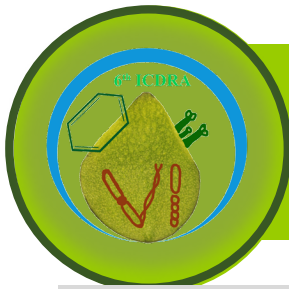
16:00  **Coffee, fruits & cake**

16:30 **Poster presentation & viewing II**

18:00 **Bus departure** IPK, Gatersleben to Quedlinburg

18:30 Guided tour in Quedlinburg

20:00  Conference dinner (Schlossmühle, Quedlinburg)



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**Wednesday
June 01**

Waste water remediation, feed, food, biofuel & transformation

8:00 **Bus departure** Quedlinburg to IPK, Gatersleben

33 **8:30** **Invited talk** Britt Schumacher, DBFZ GmbH, Leipzig, DE
Duckweed - Conservation and conversion into biogas

34 **9:00** **Invited talk** Ingrid van der Meer, WUR, Wageningen, NL
Water lentils and derived products thereof for human consumption: overview of the current status of NF approval in Europe

35 **9:30** Jurriaan Mes, WUR, Wageningen, NL
Water lentils protein for human nutrition

36 **9:50** Anton Peterson, Huaiyin Normal U, CN
Lemna turionifera demonstrates good potential as an alternative system for transient expression of recombinant proteins

37 **10:10** Johannes Demann, Osnbrück U, DE
Insights into the nutritional value of duckweed as protein feed for broiler chicken

10:30 ☕ **Coffee break**

Large scale cultivation & social aspects

38 **11:00** **Invited talk** Paul Skillicorn, Skillicorn Technologies, Austin, TX, USA
Duckweeds, the engine of the New Circular Economy

39 **11:30** **Invited talk** Tsipi Shoham, GreenOnyx, IL
Securing fresh nutrition via a breakthrough technology for growing duckweeds

40 **12:00** Finn Petersen, UAS Osnabrück, DE
Development and scale-up process from a small duckweed culture to a large in-door vertical farm for duckweed biomass production

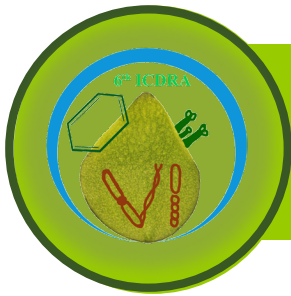
41 **12:20** tba

42 **12:40** Wisuwat Songnuan, Mahidol U, Bangkok, TH
Carbon dioxide sequestration potential of two Thai duckweed species, *Wolffia globosa* and *Lemna aequinoctialis*, under open-air greenhouse condition

13:30 Best Poster Award (founded by CLF PlantClimatics GmbH) and Closing remarks

14:00 End of conference

14:00 **Bus departure** IPK, Gatersleben to Quedlinburg



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Monday May 30 16:30 Poster presentation & viewing I

- 1 Alexej Sonnenfeld
- 2 Leone E. Romano
- 3 Dylan Jones
- 4 Anton Stepanenko
- 5 Tram Tran
- 6 Kellie E. Smith
- 7 Olena Kishchenko
- 8 Olena Kishchenko
- 9 Metha Meetam
- 10 Avital F. Yosef
- 11 Marie Lambert
- 12 Manuela Nagel
- 13 Buendía Daniel

Tuesday May 31 16:30 Poster presentation & viewing II

- 14 Martin Höfer
- 15 Rachel O'Mahoney
- 16 Claire Smith
- 17 Adelaide Iannelli
- 18 Timo Stadtlander
- 19 Martin Schäfer
- 20 Fernanda V. da Silva Cruz
- 21 Sajjad Kamal Shuvro
- 22 Linda Klamann
- 23 Jannis von Salzen
- 24 Reindert Devlamynck
- 25 Hassana Ghanem
- 26 Johan A. Pasos-Panqueva