

# PLANT NUTRITION IN GLOBAL CHANGE

57<sup>th</sup> Annual Conference of the German Society of Plant Nutrition

**Location:** Justus Liebig University Giessen, Ludwigstrasse 23, 35390 Giessen

**Date:** September 29 – October 1, 2025

## Program Book

Organizing committee at the Justus Liebig University Giessen:



***Institute of Plant Nutrition***

Jakob Santner, Birgit Hütsch, Tabea Selzer



***Department of Agronomy and Crop Physiology***

Michael Frei, Linbo Wu, Johanna Krippner

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## General information

### Registration

The registration desk is located in the entrance hall of the university main building (Ludwigstrasse 23). Please register before attending the conference. Registration will be open throughout the conference.

### Conference language

The conference language is English. Only the members' meeting of the German Society of Plant Nutrition (DGP) will be held in German.

### House rules

We kindly ask for your understanding that no food and drinks are allowed in the lecture hall ('Aula'). Please use the breaks to refresh yourself. Thank you for your understanding and cooperation!

### Wi-Fi Access:

Conference Wi-Fi access is provided free of charge at the venue by the Justus-Liebig-University Giessen, you can connect using the credentials below:

Network-name (SSID)	ugitag
Username	e-pflanzen
Password	7351

eduroam will also be available.

## Conference Agenda

### Early Arrival - Sunday, September 28

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18.00 h      **Early bird reception**

Location:

**Interdisciplinary Research Center for Biosystems, Land Use and Nutrition (iFZ)**

Heinrich-Buff-Ring 26

35392 Giessen

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## Day 1 - Monday, September 29

9.00 h *Registration open*

10.30 h Welcome address

10.50 h **K1** **Winfried Winiwarter** **Global impacts of nitrogen in the environment: the need to improve nitrogen use efficiencies in food production and beyond**

11.30 h **T1** Wiebke Reymann Soil organic carbon to clay ratios as determinant of nitrogen retention and fertilizer use efficiency

11.50 h **T2** Markus Weinmann Integrating soil biodiversity and rhizosphere processes for climate-resilient, nutrient-efficient cropping systems: Insights from Four EU Projects

12.10 h **T3** Benjamin Neuhäuser Phospho-switch from potential driven  $\text{NH}_4^+$  accumulation to gradient dependent  $\text{NH}_3$  transport

Session Chair Christian Zörb

12.30 h Light Lunch

13.30 h **K2** **Yiyong Zhu** **Plasma membrane  $\text{H}^+$ -ATPases in plant nutrition and crop improvement**

14.00 h **T4** Oriana Mariani Endoplasmic reticulum-localized cation transporters - crucial for plant development, fertility, and nutrition

14.20 h **T5** Dharendra Fartyal Exploring the role of inositol pyrophosphates in rice phosphate homeostasis

14:40 h **T6** Tobias Reineke Phosphorus deficiency affects early root development in *Triticum turgidum* ssp.

15:00 h **T7** Shayam Pariyar Mineral nutrients composition and leaf surface wetness of atmospheric aerosols collected from Germany and Israel

Session Chair Diedrich Steffens

15.20 h Coffee break

16.30 h **P** Poster session - even numbers

17.00 h **K3** **Rivka Elbaum** **Formation pathways of biosilica in sorghum**

17.20 h **T8** Stefan Hanstein Slow-release mineral fertilizers with compostable plastic coatings

17.40 h **T9** Maarten Everaert Novel slow-release seed coatings for improved micronutrient supply to crops

Session Chair Matthias Wissuwa

18.00 h *End*

18.30 h Members' meeting of the German Society of Plant Nutrition (DGP)

- **members only** -

Location: Ludwigstrasse 23, Biologie-Hörsaal (2<sup>nd</sup> floor, room 232)

*Snacks and drinks will be provided*

## Day 2 - Tuesday, September 30

8.15 h Registration open

8.30 h Gold sponsor presentations

9.00 h **K4** **Sandra Schmöckel** ***Chenopodium quinoa* - a minor crop for future marginal soils**

9.30 h **T10** Matthias Wissuwa Development of Zn-biofortified rice for Madagascar

9.50 h **T11** Andriele Wairich Discovering the hidden power of wild rice: A key to mineral disorders tolerance

10.10 h **T12** Sabine von Tucher Wheat as an early indicator for the shortage of phosphorus in soil

Session Chair Uwe Ludewig

10.30 h Coffee break

11.00 h **P** Poster session - uneven numbers

12.00 h **T13** Thomas Alcock Fine mapping quantitative trait loci controlling boron efficiency in Brassicaceae by combining genetic and phenotypic information from natural and generated populations

12.20 h **T14** Klea Lami NUDIX-Type hydrolases in *Arabidopsis thaliana* target specific inositol pyrophosphates and modulate nutrient signaling

12.40 h **T15** Jóska Gerendás Defining plant nutrient elements from the plant's perspective

Session Chair Hans-Werner Olf

13.00 h Light Lunch

14.00 h **K5** **Mohsen Zare** **From soil to root: the role of mucilage in facilitating nutrient and water uptake**

14.30 h **T16** Raphael Tiziani Root exudate responses to combined phosphorus deficiency and microplastic stress

14.50 h **T17** Mirriam Chishala Chibesa Characterization of polyacrylamide ZrOH hydrogels for sampling root-exuded carboxylates from soil-grown plants

15.10 h **T18** Britta Pitann Understanding waterlogging tolerance: Mitigation strategies to cope with excess water

Session Chair Gabriel Schaaf

15.30 h Coffee break

16.00 h **P** Free poster session

16.30 h **T19** Uwe Ludewig Positive interactions between plant-beneficial inoculants and members of the resident soil microbiome improve plant performance under stress

Session Chair Linbo Wu

17.00 h End

## Day 2 - Tuesday, September 30

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19.00 h

Conference Dinner

- **registered participants only** -

**Location: Bootshaus, Bootshausstrasse 12, 35390 Giessen**

How to get there?

- a. **Walking distance** : 1.5 km (approximately 20 min)
  - b. **Public transport:**
    - Walk to Berliner Platz (550 m)
    - Take bus line 2, 3, 7, 801 or 802 until "Gießen Oswaldsgarten"
    - Walk to the restaurant (400 m)
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## Day 3 - Wednesday, October 1

8.15 h *Registration open*

8.30 h Gold sponsor presentations

9.00 h **K6** **Yoshiaki Ueda** **Integration of nutrient signals in plants: Mechanisms, genotypic differences, and modeling**

9.30 h **T20** Franziska Daamen Conducting stress signalling: Impact of organellar calcium dynamics on salt tolerance

9.50 h **T21** Marion Deichmann Detection of nutrient deficiencies in barley from RGB images, hyperspectral images, and hyperspectral point sensor data

10.10 h **T22** Naser Atu Qasim Profitability of digestate application strategies - results from parcel and field trials

Session Chair Birgit Hütsch

10.30 h Coffee break

11.15 h Poster Awards & Doctoral Award  
Presentation by the recipient of the Doctoral Award

12.00 h Farewell address

12.30 h *End*

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