

11th Dutch Seed Symposium

For everyone who cares about the heritage of all time: **The Seed.**

Tuesday October 3rd, 2023

Fletcher Hotel - De Wageningsche Berg

Generaal Foulkesweg 96, 6703 DS Wageningen

<https://www.plantum.nl/dutchseedsymposium>

At the [Dutch Seed Symposium](#) an interesting spectrum of issues about seeds and seed physiology is presented by international researchers, aiming to give the participants a broad perspective of the present state of the art in seed science, bringing science and business together. The presentations as well as the participants are interesting and stimulating for everyone who is involved with seeds in their profession. The Dutch Seed Symposium also provides a great opportunity to meet and talk to a broad range of people active in the seed industry.

Registration fees

- **Groups ≤ 6 participants** **€ 130.00 pp**
- **Groups > 6 participants** **First 6 € 130.00 pp, additional participants € 105.00 pp**
- **Students** **€ 20.00 pp**

Register now!

The Dutch Seed Symposium is an initiative of Dutch seed companies, associated with Plantum. You can register [here](#), **until September 28th 2023**. Frequent updates will be provided as the programme is finalized.

Should you have any questions, feel free to contact Monique van Vegchel (m.vanvegchel@plantum.nl).

Full program

09.00-09.30 **Registration with coffee/tea**

09.30-09.40 **Opening**

09.40-10.10 **Braving the deluge: plant survival strategies in a wetter world** - *Rashmi Sasidharan (Utrecht University)*

As global temperatures rise, heavy precipitation events are becoming more common, leading to increased flooding incidents worldwide. Consequently, flooding has become a major abiotic stress for plants, with negative impacts on biodiversity and crop output. This talk will provide an outline on flood survival strategies in plants and how plants use dynamic stress signals to detect and respond to the stress.

10.10-10.55 **Ensuring seed health through beneficial micro-organisms** - *Jürgen Kohl (Wageningen University and Research)*

Seeds and seedlings need to be protected against pathogenic fungi or bacteria. Current research focuses on the role of the seed microbiome and the technology needed to develop robust biological control on seeds. This will support the seed supply chain to decide on appropriate routes during specific seed production and seed processing steps to implement the paradigm shift needed to ensure seed health through beneficial micro-organisms.

10.55-11.45 **Coffee break**

- 11.45-12.05 **Microbiological Seed Enhancement on Grasses and Legumes – Juan Castillo (Barenbrug)**
This presentation will give the audience an idea of what needs to be done to develop a coating with rhizobium. This product is used for sustainably binding nitrogen with legumes in the field. The presentation will also provide other insights in microbial applications.
- 12.05 -12.45 **Seed Stored mRNAs: Protection and dynamics during seed hydropriming - Patricija Gran (Wageningen University and Research)**
Seed priming enhances germination efficiency and uniformity; however, it has detrimental effects on seed longevity. My research explores the impact of hydropriming on seed longevity and its influence on seed stored mRNAs. By investigating the seed transcriptome, translome, and RBPome, as well as examining the localization of seed RBPs during hydropriming treatment, I identified key genes and RBPs that may be involved in accelerated germination and/or decreased longevity as a result of hydropriming.
- The potential of bacterial seed endophytes on Arabidopsis thaliana germination and seedling growth under abiotic stresses – Sasiwimon Siricharoen (Wageningen University and Research)**
Recent studies have shown that the microbiome found inside of seeds (endophytes) play important roles in seed and seedling vigor. We developed plate-based assays to investigate the role of potential volatiles released by one bacterial seed endophyte (BSE) isolated from cabbage seeds in Arabidopsis thaliana seed germination and seedling growth under salinity and osmotic stresses. Our results show that the BSE could have a conserved role in stimulating germination and growth under abiotic stresses, and that plate-based assays are efficient methods to assess the role of isolated BSEs in vivo.
- 12.45 - 13.45 **Lunch**
- 13.45-14.25 **Seed equilibrium relative humidity-moisture content relations and how they inform physiological activity - Fiona Hay (Aarhus University)**
The International Seed Testing Association is interested in including water activity, more normally expressed as equilibrium relative humidity (eRH) in seed science, as an official method for determining the moisture status of seeds and it is already routinely used by seed genebanks to check whether seeds are sufficiently dry for long-term storage. A confounding issue with the use of eRH however, is the phenomenon of hysteresis whereby seeds that are drying have a lower eRH at a given moisture content than seeds that are taking up moisture. In this talk, I will give an overview of water activity / seed eRH and present some of our recent research to better understand seed moisture relations and the implications for seed longevity in particular.
- 14.25–15.10 **Translation regulation during seed maturation – Leónie Bentsink (Wageningen University and Research)**
Seeds contain a lot of seed stored mRNAs. We discovered that the translation of these mRNAs into proteins is strongly regulated in seeds, from maturation until germination. Information on the translational regulation during these stages was used to build a network in which translational regulatory pathways are predicted. Such a network is a valuable tool for identifying seed-specific regulatory mechanisms, which could serve as possible breeding targets for improving seed characteristics.

15.10 – 15.40 **Coffee break**

15.40 – 16.25 **Mechanisms of seed deterioration during long-term storage of wheat and barley -** *Manuela Nagel (Leibniz Institute of Plant Genetics and Crop Plant Research)*

Understanding about seed ageing is important for agriculture, conservation of plant genetic resources and food security. Here we studied germination, antioxidants, metabolites and genetic background of long-term cold stored wheat and barley. Overall, the seeds showed a negative correlation between germination and accumulation of 4-amino-butanoic acid, glycerol and other metabolites, which were also associated with marker-trait associations, indicating a genetic relationship between loss of seed viability and metabolite changes.

16.25 – 17.10 **Seed technology: ready for the future? - Niels Louwaars (Plantum)**

Seed technology has gone through a tremendous development over the past decades. Many current technologies are being refined by scientists, seed companies themselves and their specialized service providers. However, time passes and presents new challenges and fundamentally different technological opportunities. Are we ready to embrace, to prioritize, and to invest?

17.10 – 18.00 **Drinks with snacks**