Realize the Full Potential of Pollen Quality Monitoring for Breeding and Seed Production!

SEPTEMBER

14

2023

ONLINE (Microsoft Teams Webinar)

Amphacademy Program

SEPTEMBER 14

9.00 - 9.15	**Welcome & Introduction**	**Welcoming speech (Dr. Marcel Ottiger, CEO @ Amphasys)**
9.15 - 10.15	**SEED COURSE 1**	**How pollination affects your business (Jan Droppers, Agronomist and Seed Production Specialist)**
10.15-10.45	**BREAK**	
10.45 - 11.45	**SEED COURSE 2**	**The value of pollen testing in tomato and onion seed production (Michael Pereira, Chief Agronomist @ Finistere Ventures)**
11.45 - 13.30	**BREAK**	
13.30 - 14.00	**Session 1**	**Why pollen analysis matters (Dr. Jörg Schrickel, Head of Marketing & Sales @ Amphasys)**
14.00 - 14.30	**Session 2**	**All you need - Amphasys pollen analyzers (Dr. Georg Röll, Product Manager @ Amphasys)**
14.30 - 15.00	**Session 3**	**Cucurbits in a smart way - the new crop-specific chip for cucurbits pollen analysis (Alexandra Abanto, Application Scientist @ Amphasys)**
15.00 - 15.30	**COFFEE BREAK**	
15.30 - 16.00	**Online session 4**	**How pollen characterization of inbred parental lines facilitates sunflower production (Guillaume Vallin, LIDEA)**
16.00 - 16.30	**Online session 5**	**Pollen and Ovule Quality Analysis for Plant Reproduction (Iris Heidmann, ACEPO)**
16.30 - 17.00	**Online session 6**	**Evaluation of methods to assess the quality of cryopreserved Solanaceae pollen (Nathalia Langedijk, Enza Zaden, and Marco Di Berardino, CTO @ Amphasys)**

SEED COURSE

SEED COURSE I (by Jan Droppers)

How Pollination Affects Your Business

- Selections from breeding
- Trialing efficacy
- Variety introduction
- Crop placement
- Crop management
- Crop estimates & Inventory

SEED COURSE II (by Michael Pereira)

The Value of Pollen Testing in Tomato and Onion Seed Production

- Background on the importance of tomato and onion crops
- Key challenges
- Climate and areas
- Successful seed production
- IP and pollen
- Pollen testing in line development breeding

AMPHASYS EXPERTS

Why pollen analysis matters (by Dr. Jörg Schrickel)

In this session, Jörg Schrickel explains which information can be extracted from systematic pollen quality measurements and shows in case studies, how this information can be used to improve efficency, save costs and increase reliability in plant breeding and seed production.

Discover:

- why pollen quality measurements are important indicators for crop placement, base rate calculations and parent line characterization
- why pollen quality measurements are indispensable in times of climate change
- why you cannot afford not to systematically screen pollen quality

Key learnings from this session:

- how you can increase reliability in seed production
- how you can reduce costs in breeding programs
- how you can optimize processes in seed production research

All you need: Amphasys Pollen Analyzers (by Dr. Georg Röll)

In this session, Georg Roell presents Amphasys' latest product innovations and talks about how they make pollen quality monitoring more convenient and what level of information they provide.

Discover

- how easy and fast pollen analysis with Amphasys pollen analyzers is
- how the automated data analysis with crop specific chips leads to immediate results
- how the newly developed software makes data analysis and operation much more user-friendly and easy

Key learning from this session:

- the technology behind Amphasys' pollen analyzers
- the differences between Ampha P20 and Ampha Z40 and their main areas of usage
- the advantages of the newly developed software

Cucurbits in a smart way: the new crop-specific chip for cucurbits pollen analysis (by Alexandra Abanto)

In this session, Alexandra Abanto talks about the new smart chip for cucurbits and the benefits of automated data analysis and easy handling. She presents robust methods for sampling and sample preparation for pollen analysis, as well as findings during the chip development.

Discover:

- the best set-up for a robust sampling and sample preparation method for cucurbits pollen
- how easy and fast pollen measurements with the cucurbits chip are
- the interesting findings we made upon the cucurbits chip development

Key learnings from this session:

- what you should consider when collecting cucurbits pollen
- how to collect and prepare samples for pollen viability analysis for cucumber, melon and watermelon
- what the best measurement conditions for each crop are

GUEST SPEAKERS

"IT TAKES TWO TO TANGO"
Ovule and pollen analysis by Impedance Flow Cytometry (IFC) (by Iris Heidmann)

In this session, Iris Heidmann will give an overview of her work with breeders and seed producers. It will be explained why crosses fail due to an array of various factors like genetics, growing conditions, or poor pollen handling and how IFC was used for monitoring.
So far, IFC was used for analysing milk components, cell cultures, micro-organisms, and pollen grains. In the second part of her talk, Iris will show her first results on ovule analysis using IFC.

Discover:
- what causes crosses/pollinations to fail
- if ovules can be analysed by IFC
- what can be detected by IFC-based ovule analysis

Key learnings from this session:
- IFC measurements are used to detect poor pollen handling
- the differences between pollen and ovules analysis
- possibilities and limitations of IFC-based ovule analysis

How pollen characterization of inbred parental lines facilitates sunflower production (by Guillaume Vallin)

In this session, Guillaume Vallin explains how the pollen quality behaviour of sunflower inbred lines have an impact on the seed production quality or potential and how we could adapt the sowing protocol or production location to control a bad pollen quality.

Discover:
- why pollen quality measurements on parental lines are important indicators for the development of new sunfolwer variety
- why pollen quality measurements are indispensable in times of climate change

Key learnings from this session:
- how you can increase reliability in seed production
- how you can optimize processes in production research

Evaluation of methods to assess the quality of cryopreserved Solanaceae pollen (by Nathalia Langedijk)

In this session, Nathalia Langedijk presents the results of a collaborative research project of Enza Zaden and Amphasys, focusing on the evaluation of pollen quality analysis methods for their suitability in routine quality control of cryopreserved pollen batches.

Discover:
- how a collaborative research project between a seed breeding company and a technology developer is setup
- which pollen quality analysis methods are suitable for routine quality control
- how morphologically distinct pollen populations can be discriminated by the Amphasys pollen analyzer

Key learning from this session:
- the benefits of a collaborative research project
- the solid link between morphologically distinct cell populations and Amphasys pollen analysis results
- the reproducibility and repeatability of in vitro germination, Impedance Flow Cytometry, and vigor assessment for pollen analysis

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