

GERMAN PLANT BREEDING CONFERENCE “ACCELERATING CROP GENETIC GAIN”

Geisenheim, 19. – 21. March 2024

PROGRAM



SESSIONS

1. Managing and mining crop diversity using genomics tools
2. Innovations in modelling approaches for future crop improvement
3. Accelerating breeding for improved climate resilience and sustainability
4. Designing future crops with modern breeding technologies
5. Predicting a path for future crop improvement

19/03/2024

11:00 – 12:30 Registration, Poster setup

12:30 – 13:00 Welcome

SESSION 1 “MANAGING AND MINING CROP DIVERSITY USING GENOMICS TOOLS”; CHAIR: TBA

13:00 – 13:40 Keynote by Agnieszka Golicz

13:40 – 14:00 Christina Waesch - Pollen and anther morphological variation was shaped by domestication in rye (*Secale cereale* L.).

14:00 – 14:20 Anne-Kathrin Pfrieme - Unlocking the potential of wheat genetic resources: Fine mapping and validation of unexploited leaf and stripe rust resistances

14:20 – 14:40 Sarah Schiessl-Weidenweber - Meiosis genes variation in the triangle of U

14:40 – 15:00 Akanksha Singh - Recent landraces from novel environments can serve as reservoirs of genetic diversity in grain amaranth

15:00 – 15:45 Coffee break

SESSION 2 “INNOVATIVE MODELLING STRATEGIES FOR FUTURE CROP IMPROVEMENT”, CHAIR TBA

15:45 – 16:25 Keynote by Daniela Bustos-Korts

16:25 – 16:45 Tien-Cheng Wang - Location determines yield performance consistency in winter wheat (*Triticum aestivum* L.): case study from multi-environment trials and simulation results

16:45 – 17:05 Lukas Roth - High-throughput field phenotyping to facilitate the prediction of crop performance for new environments and new genotypes in breeding

17:05 – 17:25 Marta - Malinowska - Root traits as a key driver in accelerating and streamlining perennial ryegrass improvement

17:45 – 19:00 General Assembly of the German Society of Plant Breeding & Election of Young GPZ

19:00 – 21:00 Happy Poster Session with Flying Dinner

21:00 – 23:30 Networking in the “Geisenheim Breeders’ Lounge”

20/03/2024

08:00 – 08:30 Coffee / Registration

SESSION 3 “ACCELERATING CROP BREEDING FOR IMPROVED CLIMATE RESILIENCE AND SUSTAINABILITY”, CHAIR TBA

08:30 – 09:10 Keynote by Dorcus Gemenet

09:10 – 09:30 Thomas Miedaner - Dwarfing genes in wheat, triticale and rye hinder genetic gain in Fusarium head blight resistance

09:30 – 09:50 Alan Humphries - Introgressing crop wild diversity to improve alfalfa drought tolerance for Kazakhstan and Kyrgyzstan

09:50 – 10:10 Lilian A. Okiro - Evaluation of genetic diversity and genome-wide association studies of resistance to bacterial wilt disease in potato

10:10 – 10:40 Coffee break

10:40 – 11:00 Miguel Sanchez-Garcia - New strategies of the Global Barley Breeding Program of the CGIAR to accelerate genetic gains under Climate Change

11:00 – 11:20 Dennis. E. Tippe - Biodiversity for Opportunities, Livelihoods and Development (BOLD): Harnessing crop diversity to mitigate the effects of changing climate - Finger Millet component

11:20 – 11:40 Annika Schildberg - Unraveling the function of the cyst nematode resistance gene Hs4 in different genomic backgrounds

11:40 – 12:00 Lee Hickey - Breeding for stable disease resistance: a commercial wheat breeding case study using genomic prediction

12:00 – 14:00 Happy Poster Session with Flying Lunch

SESSION 4 “DESIGNING FUTURE CROPS USING MODERN BREEDING TECHNOLOGIES”, CHAIR TBA

14:00 – 14:40 Keynote by Hans Daetwyler

14:40 – 15:00 Tianyu Lan - Adapting to the heat: stress response and reproductive success in barley

15:00 – 15:20 Michaela Jung - Genomic prediction of apple traits integrating environmental covariables and non-additive effects

15:20 – 15:40 Etienne R. Patin - Genetic variability of drought responses and root traits in wild *Vitis* species with an interest to be used as grapevine rootstocks

15:40 – 16:00 Gesa Helmsorig - Early maturity 7 (eam7) is a modulator of photoperiod sensitivity in barley

16:00 – 16:30 Coffee break

16:30 – 17:10 Keynote by Holger Puchta

17:10 – 17:30 Nina Trubanová - Genome specific association study (GSAS) for exploration of intravarietal variability in hemp (*Cannabis sativa*)

17:30 – 17:50 Shanice Van Haeften - Unravelling the Genetics of Mungbean Canopy Dynamics Using UAV-Derived Prediction Models

17:50 – 18:10 Max Schmidt – Exploring the (epi)genetic diversity in grapevine

19:00 – 23:30 Conference Dinner

21/03/2024

08:00 – 08:30 Coffee / Registration

SESSION 5 “PREDICTING A PATH FOR FUTURE CROP IMPROVEMENT”, CHAIR TBA

08:30 – 09:10 Keynote by Mark Cooper

09:10 – 09:30 Hanna Marie Schilbert - From Bitter to Better: Optimizing the Taste of Rapeseed Protein for Human Consumption by applied Genome Research

09:30 – 09:50 Johanna Åstrand - Genetic gain in spring barley and genomic prediction strategies for efficient breeding of yield in different row types

09:50 – 10:10 Po-Ya Wu - Optimal implementation of genomic selection in clone breeding programs—Exemplified in potato: I. Effect of selection strategy, implementation stage, and selection intensity on short-term genetic gain

10:10 – 10:30 Azadeh Hassanpour - Dynamic Optimization for Resource, Allocation in Breeding Programs Using Evolutionary Algorithms (MoBPSopti)

10:30– 11:45 Coffee break

11:45 – 12:05 Ravindra Reddy Gundala - Big Data driven Genomic Predictions for Elevating Genetic Gain in Wheat

12:05 – 12:25 Carina Meyenberg - Feature Engineering and Parameter Tuning - Improving Phenomic Prediction Ability in Multi-Environmental Durum Wheat Breeding Trials

12:25 – 12:45 Bright Enogieru Osatohanmwen - Machine Learning Combined with Locus-Specific Degree of Dominance Transformation for Genomic Prediction in Maize

12:45 – 13:05 Mila Tost - Identification of polygenic selection for drought stress in European beech populations

13:05 – 13:30 Announcements, Awards and Farewell

13:30 – Farewell (incl. packed lunch)

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