**NCCC215 breeding and genetics technical committee meeting minutes**

Dec 10-11, 2024

Springhill Suites Chicago O’Hare Airport and online via Zoom link

Chair: Dennis Halterman; Vice-chair: Jeff Endelman; Secretary: Cari Schmitz Carley

Administrative Advisor: John Blanton, SDSU

**Tuesday, December 10**

Called to order 3:03

Attendance by QR link on screen.

No additions or corrections were made to the 2023 minutes – approved.

Additions to the agenda:

Max Feldman, breeding insight

New administrative advisor for the NCCC announced John Blanton, SDSU.

Introductions were made around the room and from those joining online.

Invitation from David Douches to join for the social after the adjournment of the meeting today.

Jim Busse announced a skin set testing workshop from the PAA Physiology session. Registration available online.

Dennis Halterman indicated to save the date as December 9-10 for the 2025 meeting.

New secretary nomination Maria Caraza-Harter.

**Michigan**

Kaela Panicucci: Generation of self-compatable diploid potatoes through means of CRISPR/Cas9 genome editing – HT-A, HT-B, SRNase KOs

Jess Norling and Logan Sapienza: Diploid breeding and male infertility

Joseph Ifeanyi Ulasi: Introgression and pyramiding of novel and known resistance genes into diploid potato germplasm

Tomas Lopes: mapping and introgression of Colorado Potato Beetle Resistance in Solanum pinnatisectum

Joe Coombs: MSU breeding and genetics 2024 blackspot bruise

Joe Coombs: MSU breeding and genetics 2024 common scab resistance

-----------------------15min break taken at 4:40 -----------------------------------

Dave Douches: Screening Solanum species for abiotic heat and water stress tolerance

**Minnesota**

Jonathan Boecker: TWL analysis of phenotypic resistance against two fungal pathogens (vert, C. coccodes) in Solanum tuberosum

Timileyin Sunmonu: Impacts of ploidy changes on gene and specific allele expression in potato

Sapphire Coronejo: Unraveling the complexity of the potato genome using dihaploids

5:57 stopped for the day

**Wednesday, December 11**

Meeting started at 8:01

John Bamberg genebank update: Core collection project with S andigena, Germplasm collection in SW USA, LSO, drought, nematodes, Ca – elite diploids and segregating mapping populations, Heat screening, Tomatine

Alfonso Del Rio – update on connection to Peruvian university to develop graduate program, CIP collection testing with molecular markers to determine which to import from Spooner collection

**Wisconsin**

Maria Caraza-Harter: diploid breeding field selections

Fatima Latif Azam: Common scab disease resistance in potato

Gashaw Alemu: Advancing effective potato disease management – bacterial wilt, silver scurf

Kenji Asano as Jeff Endelman: Causal variant discovery for the potato dwarf mutant *ga1*

Mercedes Ames: Genomic tools for wild potato relatives (WiDiPo collection)

Mercedes Ames: PSTVd challenge…and implementation of solutions – quantitative real time PCR

-----------------------------9:52 15 min break------------------------

**Breeder updates**

Susie Thompson, NDSU: varieties for northern plains, emphasis on early maturity and resistances to abiotic and biotic stressors

Laura Shannon, UMN: phenomic prediction for yield, quality traits, and N use efficiency, predictions of tuber traits from in-season drone images, accuracy maximized at different imaging timepoints for each trait

Jeff Endelman, UW: varieties, publications on DArTag, R/polyBreedR, CDF1 allele calling from DArTag, OFP20, KASP marker for Rychc , COMA

Dave Douches, MSU: genetic basis for broad interspecific compatibility from *S verrucosum* ui11.1 accessing 1EBN species, varieties from tetraploid breeding program emphasis on scab resistance, quality, early to mid-maturity, diploid breeding program, GE efforts vacuolar invertase, XERICO, USAID project

Max Feldman, USDA: Breeding Insights integration of phenomics, genomics, data management, and software tools to support breeding, phenotyping line using RoboFlow