**Annual Meeting of Regional Project NE2231**

**December 11, 2023**

**Held virtually, over Zoom**

**Participants**

Mark Clough (NC State), Walter De Jong (Cornell U), Hielke De Jong (AAFC, retired), Matt Falise (Cornell U), Pia Spychalla (Cornell U), Matt Kleinhenz (Ohio State U), Han Tan (U ME), Paul Collins (USDA-ARS Orono, ME), Xinshun Qu (PA State), Luis Duque (PA State), Marcio Resende (U FL), Leo Hoffman (U FL), Lincoln Zotarelli (U FL), Chris Clarke (USDA-ARS Beltsville MD), Brett Shelley (USDA-ARS, Beltsville), Chris Hopkins (Black Gold), Jonathan Price (Sterman Masser Farms), John Lundeen (Potatoes USA), David DeKoeyer (AAFC Fredericton, NB), Erica Fava (AAFC), Mitchell Smith (NB Dept Ag), Tommy Dixon (NB Dept Ag), Antoine Bedard (Patate Lac St-Jean), Christian Tobias (National Program Leader, NIFA), Margaret Smith (Cornell U).

**Agenda additions**: none; motioned to approve and seconded.

**Minutes of 2022 meetings**; motioned to approve and seconded.

**Introductions**

NE2231 meeting will be held in Beltsville MD next year, 12/16/2024 and 12/17/2024.

**Nominations**: Secretary Mario Andrade; Vice Chair Paul Collins; Chair Han Tan

Discussion about benefit of rotating vs permanent committee. Rotating committee preferable due to spreading institutional knowledge.

**USDA-NIFA Christian Tobias**

Christian serves as the capacity coordinator for this meeting. NIFA administers 89 budgeted programs. Dr. Mirsa is the new NIFA director. His background is in scientific research at Iowa State. 2023 appropriations divided into discretionary and mandatory funding. Mandatory funding extended through continuing resolution through 9/30/2024. AFRI awards decisions delayed until full appropriation. New dashboard tools are available for tracking grant status and getting more info about funding levels/allocations. NIFA is in phase 2 of a 3 phase plan for a grants modernization initiative. New system is based on NIH’s system. Program overview of regional potato programs and recent releases. SCRI funding will be $75 million for FY2024. AFRI RFA coming out next week (AF1141 and AF1143 have most relevance). International trilateral funding opportunity between US, UK, and Germany. Must have a PI from all three countries ($300k to $800k per PI).

**Brett Shelley**

Common scab qPCR. Streptomyces scabies and ten other Streptomyces sp. cause common scab. Thaxomin A linked pathogenicity, as demonstrated by complementation assay. Assay testing at field sites in PA, ME, NE, and ND. qPCR strong predictor of symptoms, however model accuracy decreases with diverse genotypes. qPCR useful in mapping spatial variation across a field. Questions about how management affects scab pressure. Moisture is definitely an important factor. pH may also be linked.

**Margaret Smith**

Cornell administrative advisor, field corn breeder. Margaret emphasized the importance of multistate breeding projects. She noted a wide range of agroecologies relevant to potatoes. Sara Delheimer was mentioned as a source of help for drafting the impacts of multistate projects. Caribou Russet was mentioned as a home run for impact.

**Site Reports**

FL – Lincoln Zotarelli. Nice weather until severe hail storm in April during harvest. Hail killed all vines in 15 minutes and was accompanied by 2 inches of rain. Late planted trials were all lost. Lincoln is receiving increased inquiries from crop insurance claims. FL planted 25k acres which is a leveling off of a decade long decrease in acreage.

ME – Mario Andrade. A uniquely wet season. 6 inches of rain in August with lower than normal temperatures. Issues with quality (HH and rot). 65% of the acreage is processing, mostly for fries (McCain) and chippers for Frito-Lay. 20% tables and 15% seed. 53k acres total (up 1k acres from last year). Yield was 330 cwt/acre, down 20 cwt/acre from last year. High yields seen in regional trials (400-450 cwt/acre). Labor a limiting factor.

NY – Walter De Jong. Dry weather early, then fantastic weather. Limited rain during harvest. Unusually high yields. 12k acres, mostly chips. Chips are good for farmers due to processor availability and contracts.

NC – Mark Clough. 12.5k acres. Noted the long term decline. 70% chippers and 30% chippers with stability. Good season. June was cool, low stress (defects down, yields up, solids up).

OH – Matt Kleinheiz. Dry weather and wild fire smoke. Expanding chipper acreage in south central Ohio. High quality fresh market creamers. Matt discussed the SERA-45 crop diversification initiative as a pipeline with connecting small and mid-size growers with new varieties.

PA – Xinshun Qu. 4-5k acres (60% chips and 40% tables). Dry planting, wet summer, dry harvest. Irrigation was available but never needed. Above average yields. High incidence of hollow heart. Adriana Cohen is a newly hired technician.

VA – not online

A discussion about CFIA regulatory changes in relation to phytosanitary certificates. NB is able to receive seed for scab and provincial testing. NB has discussed working with new cooperators to meet the new CFIA requirements.

NB – Tom Dixon. 52.5k acres. Acreage has been stabilized by French fry industry. 70% of acreage is for processing (big processors McCain’s, Old Dutch, and Covered Bridge). Lots of rain, poor quality. Huge incidence of HH. 300 cwt/acre for russets, 250-280 cwt/acre for chippers. McCain’s QSR maintains a domestic market for fries in competition with imported European fries.

QC – Antoine Bedard. 42k acres. 50% processing and 50% fresh. Very dry spring and early summer. Wet late summer. Large tubers, lots of HH. Storage worries. Increase in PVY.

**Industry Representatives**

Chris Hopkins – Black Gold Farms. Good year for Black gold farms in NC, MO, and IN. Poor year in MD. Reflected the industry shift to smaller size profile chippers with good quality. Also discussed sustainability initiatives such as using less water and less fertilizer. Also includes cover crops and other sustainable management practices.

Luis Duque of PSU discussed his hoop house and greenhouse methods for screening for heat tolerance.

Jonathan Price – PA. High yields (550 cwt/acre for Lehigh), but low quality (GC and HH). Jonathan expressed interest in new clones with yellow flesh, smooth skin, and scab resistance. Interested in establishing a market for creamers grown in the East. Also interested in improving sustainability (reduce water, fertilizers, and pesticides).

John Lundeen – Potatoes USA. John brought up a discussion of public breeders sharing data with companies at meetings. He also brought up that NCPT total entry size is too high and individual breeders may be asked to reduce submissions. The strength of public breeders is important to the industry.

**Pathology Reports**

Erica Fava – AAFC. 28 NE2231 clones were tested. It was a wet year, delaying harvest. Low scab incidence compared to previous years (33% scab on Green Mountain). Marker data was sent in July. Wart nursery may be up by 2025.

Xinshun Qu – PSU. 46 clones tested for LB, EB, and CS resistance. Walter surprised at LB resistance in his clones.

Mario Andrade – U Maine. Soft rot resistance data from Jay Hao can be shared. Han Tan expressed interest in extracting dihaploids from unique disease resistance clones.

**Breeding Reports**

FL – Marcio Resende. New storage capacity for UF breeding. 5k minitubers (less than hoped). 15k 4 hills is the goal for first year testing. New technician being hired in Hastings. Working with imported Brazilian germplasm which may be a good source for heat tolerant breeding parents. Discussion of FlexSeq from LGC. Would provide a combination of targeted and untargeted SNPs ($43/sample). Samples must be submitted in batches of 384, so coordination must be required between breeders.

ME – Mario Andrade. 50% russet, 40% chippers, 10% tables. PVY, LB, and CS and disease priorities. Working on a GS training population with 800 genotypes on the Illumina array. 250k TPS generated. Seedlings for 60k single hills. 47k single hills were selected at 1.5%. NCPT submissions similar to previous years. Three SNAC entries (one continued from last year, two new NCPT2 graduates). AF5280-5 and NDAF1134 are being tested commercially.

NY – Walter De Jong. NY163 named Bliss, named after the location of a large chip potato growing operation. Lightest fry color ever tested. 70% of the program is chippers, 30% tables. Expressed a desire to be more impactful with tables and drive smooth skin. It was a bad year for PVY. Seven advanced chippers. NY174, NY180, and NY181 are breeders’ choice.

NC – Mark Clough. 6k 5 hill plots as first years with 18% being selected. 2nd year has two 8 hill trials without selection, followed by three 8 hill trials in third year. At the end of third year, all five locations will be considered in advancing. Mark discussed an earlier harvest schedule (90-95 DAP). Advanced clones include NC470 and NC 818-30. Bonny Oloka is using genomic selection to select for yield and SG.

Matt started a discussion of maturity ratings.

USDA-ARS ME - Paul Collins. 60% chippers, 30% tables, 10% diploids. Full breeding program capacity at years 1 and 2. Mostly full at year 3. Bad PVY this year. High incidence of HH. Best advanced table and chippers discussed.

AAFC NB David DeKoeyer. National breeding program of Canada tests at four locations (PEI, NB, QB, and ONT). 29k first year clones and 6k first year clones from CSU. 200k TPS. 233 2nd year clones, 79 3rd year clones, and 68 fourth year clones. 18 clones in national testing. Adopting parent selection with GS. Markers for PVY, PVX, and GN. Screening for LB, CS, fusarium and verticillium resistance. Processing and cooking quality screens. Sustainability by reduce N testing. 2 new releases (AAC Mulberry and AAC Garnet). Several other plant breeders rights releases. Wart resistance update: standardizing methods and developing pathotype testing in the laboratory. Industry partnerships for sustainable potatoes. French fry consortium. TPS for northern communities. 70% of new seedlings are russets crosses. The list of the top 50 clones in Canada is available, but CFIA is limiting data openness. Pete Volney is listed as the CFIA contact.

**NE2231 Trial Data, Reporting** – M. Clough. Data is up.

**Seed Nursery –** Mario Andrade. 8 breeders choice entries (3 from Cornell, 3 from UMaine, 2 from ARS). 27 other clones available on shopping list. A discussion of standards started by proposing dropping Shepody and replacing with Caribou Russet.

**Eastern Region USDA-NIFA Potato Special Grant project** – M. Andrade. Final approval granted and being internally processed at UMaine. The processing is behind schedule due to problems at the UMaine grant’s office.

**Resolution Committee**

1. We recognize Dr. Hielke De Jong for participating in our meeting and recognize him for being a past member of the multistate potato breeding group and for his remarkable contribution to the potato industry.

2. Congratulate Greg Porter for 41 years of excellent leadership and contribution to the potato industry, academia, and the time he dedicated as our project coordinator. It is unfortunate he was not able to attend this meeting, but we want to invite Greg to give the talk “Reflections on 38 years of regional project activity, NE107 to NE2231” in our next meeting.

3. Walter De Jong, Mario Andrade, and Han Tan for organizing and assisting with the virtual logistics of the meeting

4. Chris Tobias (National Program Leader for National Institute of Food and Agriculture/NIFA) for presenting an overview of the NIFA funding programs.

5. Brett Shelley (USDA-ARS) for giving presentations on their research to the project members.

6. Margaret Smith for attending our meeting and providing guidance as our Administrative Advisor

7. Mark Clough of North Carolina State University for his leadership on the database management and electronic data capture efforts on behalf of the NE2231 project.

8. Paul Collins of USDA for serving as the NE2231 Secretary;

9. Walter De Jong of Cornell University for serving as the NE2231 Chair; and Han Tan for serving as vice-chair.

10. John Lundeen, Chris Hopkins and Jonathan Price for providing industry inputs.

11. All NE2231 presenters, potato breeders, agronomists, plant pathologists, industry, technical assistants, collaborators, and trial cooperators for their dedication to our group effort and their intellectual engagement in the process of potato improvement, selection, and variety development.

**Meeting Adjourned**