**Agenda**

**Western Regional Committee Meeting (WERA027)**

Wednesday, February 1, 2023

Microsoft Teams meeting (See email)

Meeting ID: 222 922 244 084

Passcode: PmVv8d

Chair: Zach Holden

Vice-Chair: Solomon Yilma

Secretary: Jessica Chitwood Brown

* Call to order ~ 1:00 p.m.
* Introductions
* Approval of Agenda
* Approval of minutes from the 2022 committee meeting
* State Reports
  + Idaho, Oregon, Washington (covered in Tri-State meeting)
  + California
  + Colorado
  + Texas
* Administrative Report
* WERA027 administrative roles and responsibilities
* Break
* Regional early/late Russet results
  + Field, post-harvest, and clone disposition
* Regional specialty results
  + Field, post-harvest, and clone disposition
* Regional chipping trial
  + Field, post-harvest, and clone disposition
* Proposed variety releases - discussion
* Seed supplies and shipping lists
* Election of new Secretary
* Discussion of location for 2024 committee meeting
* Adjourn meeting ~ 5:00 p.m. MT

**2023 - Western Regional Committee Meeting (WERA027) Minutes**

**Hybrid meeting; in-person at J.R. Simplot in Boise, ID and online via Microsoft Teams**

Chair Zach Holden (Washington State University) called the meeting to order at 12:38 pm (MT).

Introduction: The Chair suggested that introductions be skipped and there was general consent by participants.

Approval of Agenda: A motion to approve the agenda was brought by Rhett Spear (University of Idaho) and seconded by Mike Thornton (University of Idaho): vote was unanimous.

Approval of minutes from the 2022 meeting: The Chair requested a motion to approve the minutes. Sager (Oregon State University) moved to accept the minutes and it was seconded by Dave Holm (Colorado State University): vote was unanimous.

The Chair asked if the NIFA update could be provided prior to state reports due to the attendance of NIFA representative Jessica Shade. All participants agreed.

**NIFA Update:**

The update was presented by Jessica Shade, NIFA representative for WERA027. NIFA provides funding for food and ag sciences and was created through the Food, Conservation, and Energy Act of 2008 (aka the Farm Bill). There are four institutes within NIFA with a broad array of program areas. The total annual budget is around $1.8 billion, about half of that goes to capacity programs (like multistate) which are non-competitive and provide support for research and extension activities at land grant institutions. Also have competitive grant programs in which AFRI covers the most types of projects. There are also non-AFRI projects, such as SCRI, which are more diverse. Changes include they relocated from Washington DC to Kansas City, MO. There has also been a transition to more permanent remote work. They almost fully staffed, at 310 staff with the goal of 400. Because there is not a true “headquarters” where people can visit in person, they are being more intentional about communication with stakeholders.

The USDA has defined priorities. The climate change priority: NIFA published an adaptation and resilience plan, integrating climate change language into all program areas. Planning workshops will be held over this year with the goal of issuing a report in late 2023 at a climate summit at Colorado State University. Nutrition security priority: research that supports advancement of food and nutrition security especially in socially disadvantaged populations. There is a nutrition security website. Enhanced market opportunities: $50 million being invested in this area, some are targeting underserved communities. Diversity, equity, inclusion, and accessibility being incorporated into current practices and different programs as well as incorporating this language into RFA’s.

Competitive programs of interest. Specialty Crop Research Initiative: $80 million annually, project concepts that are built from the stakeholders, they want researchers to reach out to stakeholders and design projects based on needs. AFRI: Plant breeding for agricultural production, projects that incorporate traits such as increased nutrient efficiency and/or increased photosynthetic properties. AFRI: Conventional plant breeding for cultivar development: public plant breeding programs addressing the later stages of cultivar development with a focus on regionally adapted cultivars. This program has an emphasis on climate change.

Jessica encouraged everyone to sign up for NIFA’s emails and to consider being a NIFA grant proposal reviewer. If interested, reach out to the contacts in the program’s RFA. You can also fill out the form at <https://prs.nifa.usda.gov>.

Questions:

Max Feldman (USDA-ARS) asked if the genomics to phenomes project was still going forward. Jessica answered yes and put her email in the chat and said anyone has questions, to email her and she can connect them with the right people. [Jessica.shade@usda.gov](mailto:Jessica.shade@usda.gov)

**State Reports:**

The Chair asked the Tristate group if there were changes to the tristate reports submitted earlier in the tri-state meeting. The tristate representatives from Idaho, Oregon & Washington confirmed no changes in their reports. The minutes of the tristate meeting are included at the end of this report.

**California:** No representative from CA was present.

**Colorado:** Jessica Chitwood-Brown presented the following written report.

**Colorado Potato Breeding and Selection Program - 2022**

* **Breeding and Selection Program**

The Colorado Potato Breeding and Selection Program intercrossed 95 parental clones in 2022 in two separate crossing blocks. The emphasis of the first crossing block was russet (fresh and processing) and chip cultivar development with emphasis on PVY resistance. The second crossing block also emphasized russet (fresh and processing) and yellow cultivar development again with an emphasis on incorporating PVY resistance. Seed from 216 combinations was obtained.

A subset of 160 crosses from 2018-2021 were planted in the greenhouse in 2022 to produce seedling tubers. These seedlings will undergo initial field selection in 2023. These families represent crosses segregating primarily for russets, yellows, reds, along with PVY resistance. Second- through third-size seedling tubers will be distributed to Idaho (USDA-ARS), Maine, Oregon, Texas, Minnesota, and Agriculture Agri-Food Canada.

Colorado grew 89,245 in the field representing 531 families in 2022, with 448 selected for subsequent planting, evaluation, and increase in future years. A portion of these seedlings were obtained from the USDA-ARS (Aberdeen, Idaho), Texas A&M University, Oregon State University, and the University of Maine.

Another 780 clones were in 12-hill, preliminary, and intermediate stages of selection. At harvest, 152 were saved for further increase and evaluation in 2023.

Twenty-four advanced selections were saved and will be increased in 2023 pending further evaluation. Another 159 selections and cultivars were maintained for germplasm development, breeding, and other experimental purposes including seed increases/maintenance.

Field trials conducted in 2022 included: Preliminary Trial, Intermediate Yield Trial, Intermediate Yield Chip Trial, Intermediate Red Trial, Intermediate Specialty Yield Trial, Advanced Yield Trial, Southwestern Regional Russet Trial, Southwest Regional Chip Trial, Southwest Regional Red Trial, Southwest Regional Specialty Trial, Western Regional Russet Trial, Western Regional Red Trial, Western Regional Specialty Trial, Western Regional Chipping Trial, PVP Trial, Kemin Variety Trial, Higgins Variety Trial, and the San Luis Valley Chipping Trial. All trials are grown under “low input” conditions, primarily for reduced nitrogen and fungicide.

During the 2022 growing season, 1,128 clones including 12-hills through advanced selections and germplasm, were genotyped for resistance to PVY (Ryadg and Rysto) and Late Blight via Intertek’s Kasp marker panel. Markers M6F1R4\_817 (linked to Ryadg) and Yes3\_b (linked to Rysto) co-segregated with resistance. Of the clones tested, 134 were found to have PVY resistance (102 containing Rysto and 32 containing Ryadg) and were validated with field disease observations. There were 438 clones that have the potential for Late Blight resistance as indicated by markers linked to the *R2* gene. The marker panel also included two markers linked to *Sli* which segregated in the material.

A total of 162 samples are in the process of being evaluated for two or more of the following postharvest characteristics: blackspot susceptibility, storage weight loss, dormancy, enzymatic browning, specific gravity, french fry color, french fry texture, and chip color. Advanced red selections were screened for red color retention in storage.

Several advanced selections were evaluated in the Southwest Regional Trials, Western Regional Trials, or by potato growers in 2022 representing russets, yellows, specialties, and chipping selections. Advanced Colorado selections evaluated in the Southwest Regional Trials and Western Regional Trials were four russets (AC12090-3RU, CO10085-1RU, CO11009-3RU, CO13003-1RU), one red (CO14040-3R), two yellows (CO14226-3W/Y, AC10376-2012-1W/Y), and five chippers (AC13126-1Wadg, CO11037-5W, CO12235-3W, CO12293-1W, CO13232-25W). Status of these selections will be determined at upcoming meetings with regional collaborators and growers.

PVP for three selections have been accepted. They are AC05175-3P/Y (Columbine Gold), CO05068-1RU (Rocky Mountain Russet), and CO05037-3W/Y (Vista Gold). PVP for three selections are pending. They are CO00277-2R (Canada Rose), CO97087-2RU (Maritime Russet), and CO98067-7RU (Nonpareil Russet). We are in the process of protecting two russets and one chip selection. They are CO05189-3RU (Horizon Russet), CO08231-1RU (Crystal Russet), and AC03433-1W (Snowcap).

The CSU Potato Breeding and Selection program hosted its annual Open House on November 30, 2022. Thirty-five people were in attendance which included growers, warehouse managers, consultants, and other industry stakeholders. Feedback was collected from all attendees to capture their impressions of the clones on display and any other thoughts they wished to share.

One MS student, one PhD student, and one postdoctoral researcher joined the program in 2022. Student projects include identifying and improving genetic resources for disease resistance in potato. The postdoctoral researcher is focusing on health attribute traits of potato clones both in the program and commercially available. A previous MS student who has studied Vitamin C in potato is expected to graduate in 2023.

* **Publications and presentations**

Gray, C., Chitwood-Brown, J., Holm, D. G., and Niebaum, B. 2022. Western Regional Western Regional Chipping Potato Trial Report 2020. San Luis Valley Research Center, Colorado State University, 17pp.

Holm, D. G., Gray, C., and Niebaum, B. 2021. 2020 Potato Breeding and Selection Research Report to the Colorado Potato Administrative Committees (Area II and Area III). 124pp.

Koym, J. W., Scheuring, D. C., Sidhu, J., Wilson, R., Chitwood-Brown, J., Holm, D. G., and Vales, M.I. 2022. Southwest Regional Potato Variety Trial Report 2022. Texas A&M AgriLife Research, College Station and Lubbock, TX. 25p.

Chitwood-Brown, J. 2022. New Tools in Potato Breeding: A Perspective from CSU. Oral presentation at the San Luis Valley Potato Business Summit. 2022 December 8. Monte Vista, CO

Holm, D., and Chitwood-Brown, J. 2022 Breeding potatoes for disease resistance. Oral presentation at the Southern Rocky Mountain Agriculture Conference. 2022 February 1. Monte Vista, CO.

**Discussion:**

* Rich Novy asked if the CSU breeding program has Rychc in the program? Jessica Chitwood-Brown said yes, they just don’t have a marker yet to screen for that. Rich said there is a multiplex marker assay available.

**Texas:** Isabel Vales presented the following written report

**TEXAS A&M UNIVERSITY POTATO BREEDING PROGRAM – 2022 REPORT SUMMARY**

**(Full Report:** [**https://potato.tamu.edu/reports/**](https://potato.tamu.edu/reports/)**)**

* First-year seedlings tubers (62,687), resulting from 406 different full-sib families, were grown for selection on the Barrett Farm (19,574) near Springlake and the CSS Farm (43,113) near Dalhart. Some 617 original selections were made (1% selection rate). Out of 549 second-year clones, 93 were selected (17%).
* Texas received seedling tubers from Idaho (13,102), Colorado (15,278), and North Dakota (9,998) breeding programs.
* Texas produced 63,232 tuberlings in the College Station and Lubbock greenhouses from true seed. We planted 24,309 in Texas and shared second and third sizes with Idaho (6,213), Colorado (19,575), North Dakota (6,521) and Minnesota (5,882).
* In the 2021-22 crossing block, we included 80 parents. The crossing success rate was 34.7%, and we produced 183 unique families. Approximately 110,956 true seeds were produced (the average family size was about 606).
* Trials were conducted at Springlake (summer crop – planted March 25-26 and harvested July 17-21) and Dalhart (fall crop – planted May 6-8 and harvested September 19-21) - 1,093 advanced selections/new cultivars were evaluated in 10 trials.
* Southwestern and Western Regional Trials (Russets, Red/Specialties, and Chips) were conducted at Springlake and Dalhart.
* The Texas Program entered two selections (AORTX09037-1W/Y and COTX10118-4Wpe/Y ) in the Western Regional Red/ Specialty Trial. The Program entered one selection in the Southwest Regional Russet Trial (COTX08063-2Ru). The SW meeting was held via Zoom on January 27, 2022.
* The Texas Program had ten entries (COTX16054-1W, COTX17286-6W, COTX17288-1W, COTX17288-3W, COTX17288-4W, NDTX14247CAB-1W, NDTX14247CAB-2W, NDTX14263BC-3W, TX17846-1W, and TX18042-1Ru) in the Potato USA National Chip Processing Trial. Four entries (TX19009s-2W/Y, TX19407-5Ru, TX19411-4W, and TX19460-1W) were entered in the Early Generation Southern Selection Trial.
* COTX08063-2Ru was in the second year of evaluation in the National French Fry Processing Trials.
* The Texas Potato Field Day was held on July 27, 2022, on the Barrett Farm near Springlake. Forty-eight people attended the event. The 2022 Field Day Handbook eEdition is available on our website.
* Zebra chip (ZC) tolerant clones were used as parents in the crossing block. A trial including sixteen advanced chipping clones was conducted in Weslaco to test ZC tolerance under natural (no insecticide used) field conditions.
* Emphasis on virus testing and clean-up continued. In 2022, 19 new potato clones were introduced in tissue culture.
* We had three Ph.D. students: Sanjeev Gautam working on heat stress, Ao Jiao working on dormancy, and Amaka Ifeduba working on continuing heat stress studies. Amaka Ifeduba received an international Borlaug Fellowship.
* We had three undergraduate students: Lauren Decker participated in the Cornell Summer Scholars program, Trent Newton was an intern with the CSS Farms Tissue Culture lab this past summer, and Madison Ellis worked on glycoalkaloids.
* The Texas Russet Norkotah strains were the prevalent russet varieties planted in Texas.
* Texas varieties entered in seed certification in 2022, comprised 9.3% of the total US seed acreage. Out of them, the Texas Russet Norkotah selections (TXNS112, TXNS223, TXNS278, and TXNS296) collectively ranked third (in acreage) among all varieties accepted for seed certification in 2022 and represented 71.2% of all US Russet Norkotah seed acreage. All TX Russet Norkotah strains, except 296, ended royalty protection in 2022.
* Reveille Russet continues gaining rapid acceptance in the US (25 licensees in eight US States and Canada). Research areas related with this variety include acceleration of skin set and management of long dormancy to improve seed germination.
* The Vanguard Russet manuscript was published in May. Certified seed is building up. There are seven licensees in the US and it is being promoted in Canada.
* PVP was granted for COTX09022-3RuRE/Y in 2022. PVP for NDTX059759-3RY/Y Pinto is under preparation. Nine clones were disclosed.

Texas A&M Potato Breeding Program – 2022

Publications:

Peer-Reviewed Journal Articles:

2022. Mora, V., M. Ramasamy, M. B. Damaj, S. Irigoyen, V. Ancona, C. A. Avila, M. I. Vales, F. Ibanez, and K. K. Mandadi. Identification and characterization of new sources of zebra chip disease resistance among wild Solanum species. Frontiers in Microbiology. https://doi.org/10.3389/fmicb.2022.857493.

2022. Pandey, J, D.C. Scheuring, J.W. Koym, and M.I. Vales. Genomic Regions Associated with Tuber Traits in Tetraploid Potatoes and Identification of Superior Clones for Breeding Purposes. Frontiers in Plant Science. https://doi.org/10.3389/fpls.2022.952263.

2022. Toinga-Villafuerte, S., M.I. Vales, J.M. Awika and K.S. Rathore. CRISPR/Cas9-mediated mutagenesis of the granule-bound starch synthase gene in the potato variety Yukon Gold to obtain amylose-free starch in tubers. International Journal of Molecular Sciences. 23: 4640 DOI: 10.3390/ijms23094640.

2022. Toinga-Villafuerte, S., M.R. Janga, M.I. Vales, and K.S. Rathore. 2022. Green fluorescent protein gene as a tool to examine the efficacy of Agrobacterium delivered CRISPR/Cas9 reagents to generate targeted mutations in the potato genome. Plant Cell, Tissue and Organ Culture. Plant Cell, Tissue and Organ Culture (PCTOC). https://doi.org/10.1007/s11240-022-02310-8.

2022. Vales, M.I., D.C. Scheuring, J.W. Koym, D.G. Holm, S.Y.C. Essah, R.G. Wilson, J.K. Sidhu, R.G. Novy, J.L. Whitworth, J.C. Stark, R.R. Spear, V. Sathuvalli, C.C. Shock, B.A. Charlton, S. Yilma, N.R. Knowles, M.J. Pavek, C.R. Brown, D.A. Navarre, M. Feldman, C.M. Long, and J.C. Miller, Jr. Vanguard Russet: A Fresh Market Potato Cultivar with Medium-Early Maturity and Long Dormancy. American Journal of Potato Research. 99: 258–267.

2022. Hoopes, G., X. Meng, J.P. Hamilton, S.R. Achakkagari, F. de A. Freitas Guesdes. M.E. Bolger, J.J. Coombs, D. Esselink, N.R. Kaiser, L. Kodde, M. Kyriakidou, B. Lavrijssen, N. van Lieshout, R. Shereda, H.K. Tuttle, B. Vaillancourt, J.C. Wood, J. M. de Boer, P.M. Bourke, D. Douches, H.J. van Eck, D. Ellis, M.J. Feldman, K.M. Gardner, J. C.P. Hopman, J. Jiang, W.S. de Jong, J.C. Kuhl, R.G. Novy, S. Oome, V. Sathuvalli, E.H. Tan, R.A. Ursem, M.I. Vales, K. Vining, R. G.F. Visser, J. Vossen, G.C. Yencho, N.L. Anglin, C.W.B. Bachem, J.B. Endelman, L.M. Shannon, M. Strömvik, H.H. Tai, B. Usadel, C. Robin Buell, R. Finkers. Phased, chromosome-scale genome assemblies of tetraploid potato reveals a complex genome, transcriptome, and proteome landscape that underpin phenotypic diversity. Molecular Plant 15: 520-536.

Abstracts of Conference Presentations:

2022. Ifeduba, A.M., S. Zhen, and M.I. Vales. Global warming-ready potatoes: Understanding heat tolerance in potato clones from the Texas A&M breeding program. National Association of Plant Breeders 2022 Annual Meeting. August 8-11, 2022, Ames, IA. Poster.

2022. Jiao, A., S. Gautam, J. Pandey, D.C. Scheuring, J.W. Koym, M.I. Vales. 2022. Genome-wide association studies for tuber dormancy in tetraploid potatoes. American Society for Horticultural Sciences. 2022 Annual Conference. Chicago, IL, July 30 - August 3, 2022. Poster.

2022. Jiao, A., S. Gautam, J. Pandey, D.C. Scheuring, J.K. Koym, M.I. Vales. 2022. Phenotypic evaluation of potato tuber dormancy and genome-wide association studies. Texas A&M Plant Breeding Symposium. College Station, TX. February 17, 2022. Poster.

2022. Pandey, J., D.C. Scheuring, J.W. Koym, and M.I. Vales. Genomic prediction of chipping quality in tetraploid potato. Plant and Animal Genome Conference XXIX. January 8-12, 2022. Online. Digital poster.

2022. Gautam S., J. Pandey, D.C. Scheuring, J.W. Koym, and M.I. Vales. Genome-wide association study on potato tuber defects under heat stress. Plant and Animal Genome Conference XXIX. January 8-12, 2022. Online. Digital poster.

2022. Jiao, A., S. Gautam, J. Pandey, D.C. Scheuring, J.W. Koym, M.I. Vales. Investigating the genetic background of potato tuber dormancy. Plant and Animal Genome Conference XXIX. January 8-12, 2022. Online. Digital poster.

2022. Toinga, S., M.I. Vales, and K.S. Rathore. CRISPR-Cas9 targeted mutagenesis in potato of a non-native, green fluorescent protein transgene, and a native, granule bound starch synthase gene. Plant and Animal Genome Conference XXIX. January 8-12,2022. Online. Digital poster.

2022. da Silva, J., N. Gracia, I. Vales, S. Gautam, and K. Mandadi. Applications of bioreactors to plant breeding. 76th Annual Meeting of the Subtropical Agriculture and Environments Society. February 11, 2022, Weslaco, TX. (oral presentation)

Reports: <http://potato.tamu.edu/reports.html>

Vales, M.I., J.W. Koym, and D.C. Scheuring, J. Pandey, and S. Toinga-Villafuerte 2022. 2022 Field Day Handbook. Texas Potato Breeding Program. July 27, 2022. Texas A&M AgriLife Research, College Station and Lubbock, TX. 220p.

Vales, M.I., J.W. Koym, and D.C. Scheuring. 2022. Texas Potato Breeding Report, 2021. Texas A&M AgriLife Research, College Station and Lubbock, TX. 314p.

Koym, J.W., D.C. Scheuring, J. Sidhu, R. Wilson, S. Essah, David Holm, and M.I. Vales. 2022. Southwest Regional Potato Variety Trial Report 2021. Texas A&M AgriLife Research, College Station and Lubbock, TX. 25p.

Koym, J.W., D.C. Scheuring, and M.I. Vales. 2022. Western Regional Red/Specialty Variety Trial Report 2021. Texas A&M AgriLife Research, College Station and Lubbock, TX. 29p.

Presentations other than professional meetings:

2022. Invited oral presentation: Gautam S, D.C. Scheuring, J.W. Koym, and M.I. Vales. Can potatoes take the heat? Plant Breeding Circle. College Station, TX. November 11, 2022.

2022. Invited national presentation: Guest Speaker. Ifeduba, A.J., S. Zhen and M.I. Vales. 2022. Sustainable potato production for a global changing climate: Understanding the mechanism of heat tolerance in Texas-grown potatoes. Corteva New Frontiers Conference. Johnston, IA. October 11, 2022.

2022. Invited national presentation: Vales, M.I, D.C. Scheuring, J.W. Koym, J. Pandey, S. Toinga-Villafuerte, S. Gautam, A. Jiao, A.M. Ifeduba, and S. Essah. Wake up to Reveille Russet. 6th Annual Customer Appreciation. Monte Vista, CO. November 30, 2022.

2022. Invited international presentation: Vales, M.I., J. Pandey, S. Toinga-Villafuerte, S. Gautam, A. Jiao, A.M. Ifeduba, D.C. Scheuring, and J.W. Koym. Potato breeding practices in the USA. International Seed Potato Symposium. Denver, CO. July 25, 2022.

2022. Conference: Scheuring, D.C., J.W. Koym, and M.I. Vales. Reveille Russet. 2022. San Luis Valley Conference, Center, CO, February 1, 2022. Oral presentation.

Isabel also mentioned the Tools for Polyploids project and suggested to check out more information link <https://www.polyploids.org/> as well as their YouTube channel.

**Discussion:**

* Max Feldman asked what protocol Isabel is using for amylose to amylopectin ratios? Isabel said they use a commercial kit and she can follow up later.
* Where is the market going with amylose/starch/high glycine clones? Isabel responded that there is a strong environmental effect. However, it requires a marketing strategy. She does have a gene edited clone amylose free.
* Zach said at the Washington Conference last week there was a keynote address on glycemic index. If anyone wants to email that person for more questions, they could. A major take home is how the potato is classified by the USDA.
* Isabel said the group should consider how climate change will impact the chemical composition of potato and nutrition.

**Administrative Report & WERA027 administrative roles and responsibilities**: Mark McGuire (UI) Year two of five, so there is no need to do a re-write at this time. The reports are due to Mark within 60 days of this meeting so that they can be put on the NIMs website. He is on the advisory program for the ag genomes to phenomes grant initiative. Brenda Murdoch at Idaho is a Co-PI. There are many small grants available through that program.

Isabel shared that if you go to the NIMs website, you can check if you are officially a member of WERA-027 and if you are not, you should contact the person within your university to become one. At the university level, you can request to develop your own hatch multi-state project which opens doors to other things including equipment and travel grants. Isabel said they have received support funds from the hatch multi-state. You can also be added as a participant to any of the other multi-state projects, like north central, etc.

Mark followed up that each Ag Experiment Station manages the hatch funds differently and some states allow money to be given to the PIs and some do not, you have to visit with your director to find out.

**Regional early/late Russet results:** Rich Novypresented the results of regional early and late trials.

* A12305-2adg and AOR10204-3 were the highest yielding in the early trial while A09086-1LB was high yielding in both the early and late trials.
* AOR08540-1 and CO11009-3RU were high yielding in the late harvest.
* Rhett Spear commented that the Kimberly location experienced very high levels of pink rot.
* A12305-2adg and AOR10204-3 had the highest yield of US no. 1’s in the early harvest locations.
* A09086-1LB, A12305-2adg, and CO11009-3RU had high marketable yield in late harvest locations.
* For both the early and late harvests, A09086-1LB and CO11009-3RU had high specific gravities.
* CO11009-3RU and AFA5661-8 had a very low fry color out of 40 and CO11009-3RU scored 0 for sugar ends. These two likely are cold sweetening resistant.
* A09086-1LB and AFA5661-8 demonstrated late blight resistance.
* A10594-4sto and A12305-2adg both had 0 PVY and AC12090-3RU, CO10085-1RU, and CO11009-3RU showed extreme resistance to PVY.
* Common scab: Ranger Russet, A09086-1LB, and A10594-4sto had higher incidence.
  + There was a comment that high incidence and serious defect needs to be considered together when making decisions about clones.
* Corky incidence in Castle Russet was 0 and disease severity index was also 0.
* Process merit
  + Early: AOR11217-3
  + Late: A09086-1LB and A12305-2adg
* Fresh merit
  + Early: A10594-4sto, A12305-2adg, AFA5661-8, and AOR11217-3
  + Late: A12305-2adg and AOR11217-3

**Clone disposition:**

Graduated entries: AOR08540-1, AOR10204-3, CO10085-1RU, CO11009-3RU

Returned entries:

|  |
| --- |
| A09086-1LB |
| A10594-4sto |
| A12305-2adg |
| AFA5661-8 |
| AOR11217-3 |
| AC12090-3RU |
| CO13003-1RU |

Discarded entries:

None

New entries:

|  |
| --- |
| COTX08063-2Ru |
| COTX10080-2Ru |
| AOR13064-2 |
| A09136-9LB |
| COTX08063-2Ru |
| COTX10080-2Ru |

Jake Blauer (Washington State University) commented that AC12090-3RU and CO13003-1RU were the lowest in postharvest processing ratings and that these not be included in 2023 postharvest evaluations.

David Holm mentioned that there were a few 0’s in the merit scores, this must be a mistake. Brian said he would correct it.

Isabel Vales asked if the clones from Colorado that had 0% PVY had markers for any of the PVY genes. Jessica Chitwood-Brown answered that they do not, based on Intertek’s marker panel. David DeKoeyer mentioned that not all donors of Ryadg have the marker on the Intertek panel.

**Regional chipping trials were presented by Caroline Gray (Colorado State University).**

* No trial in Klammoth Falls because of the lack of water at the research station
* Highest total yield: NYOR14Q9-9 and Atlantic
  + A13125-3C also had very high yield but was not trialed at all locations and so not included in the overall rank
* Highest US#1 yield: Lamoka and CO12293-1W
* U.S. No. 1's > 10 OZ: NYOR14Q9-5
* Highest Yield < 4 OZ: Snowden and CO13232-25W
* Highest Specific Gravity Entries: Atlantic, Lamoka, and A13125-3C
* Internal defects:
  + CO12235-3W and NYOR14Q9-5 had hollow heart
  + COOR13270-2 had some internal brown spot
  + AOR12197-4 had some black spot bruise
* Lighter chip color: Lamoka, CO11037-5W, CO13232-25W, and NYOR14Q9-5

Chip color scale discussion: Caroline Gray asked whether the groups are using a 1-5 or 1-6 chip color scale. Jake said they are using the 1-5 scale. Rhett Spear said that Idaho is using the 1-6 scale and that they would rather go back to 1-5, the pictures of the scale do not make sense with the Agtron data. Jake Blauer commented that if 1-6 is the standard that SNAC will be using, that maybe we should all do that. Isabel said that a 6 is so dark, it will never be marketable so she doesn’t think it makes sense to use that scale. Isabel Vales also mentioned that Texas uses chip quality rather than chip color because there are so many defects: chip color represents the color of a good chip while chip quality includes the many defects that can be seen. Rich Novy proposed that the group go back to the 1-5 scale but look at the Agtron data to see if it correlates with the 1-6 scale. Jake Blauer suggested staying with the 1-5 scale for now and if it grows more, the group can move to the 1-6 scale. Isabel Vales asked about using the Photovolt for more objective data, Jake Blauer answered that the Photovolt doesn’t work for chips. Jake Blauer said when he spoke to Frito about the LAB values with the Photovolt, they told him that the visual scale worked better because the Photovolt was most useful for measuring the level of yellow in the color which is irrelevant in this market where we have mostly white chips. Jake Blauer didn’t see a correlation between the visual rating and the LAB values.

Jessica Chitwood-Brown asked if imagining would ever work, Jake Blauer said they do have images and that Max Feldman was working to develop a system using a standard camera for chip color grading, Max Feldman said that work is in progress and will hopefully be available soon.

Final consensus – we will use the 1-5 scale and can reassess in the future if needed.

Jonathon Whitworth discussed the disease evaluations:

* Early blight: A13125-3C and AOR12197-4
* Common scab – changes to the “Serious Defects” column:
  + A13125-3C changes to 12.5
  + AOR12197-4 changes to 12.9
  + COOR13270-2 changes to 9.3
  + NYOR14Q9-5 changes to 8.3
  + NYOR14Q9-9 changes to 11.3
* Corky Ring Spot resistant: all resistant or moderately resistant except for CO12235-3W which was susceptible.
* Soft rot resistance: A13125-3C, AOR12197-4, COOR13270-2, and NYOR14Q9-5
* Dry rot resistance: A13125-3C, COOR13270-2, and NYOR14Q9-5
* PVY resistance: COOR13270-2, NYOR14Q9-5, and NYOR14Q9-9
* High Fresh and Process merit: CO13232-25W

Discussion:

*Hollow heart*

It was asked why did NYOR14Q9-5 have such high hollow heart in Idaho relative to the other varieties and other locations? Rhett suggested that a cold spring could have caused it, there was also a high percentage of 10oz in that clone.

Rich Novy said that Idaho cuts oversize for hollow heart, Jessica Chitwood-Brown said that Colorado does too, and Brian said that is something that should be considered because anything over 3.5 to 4 inches doesn’t go to the chip plant. Rich Novy asked if Texas cuts oversize tubers for hollow heart, and Isabel Vales said yes, they cut the 10 largest. All agreed that this is creating bias towards internal defects. **Rich Novy suggested that we should include that as a footnote in the table to make it clear for industry members.**

Jonathon Whitworth asked if tubers should be sampled more in the range of something that could go to a chip plant, for example have a maximum size to sample. Over 10oz but no more than 12oz. Rich Novy said that would be fine.

*Black spot bruise protocol*

Jessica Chitwood-Brown asked how others take black spot bruise protocol and whether a standardized test could be developed. Brian said they use an abrasive peel test but that they correlate pretty well with other’s ratings. Sager said that Oregon does not bruise on purpose because harvest bruises the tubers well enough. Jake shared the scale that Washington uses and the protocol in which they perform controlled bruising. Isabel Vales stated that Texas does not do controlled bruising and she suggested that either we use a standardized test, or we indicate in the table whether the bruising is natural or controlled. Isabel asked if a pressure meter or a texture analyzer would work for this? Tina Brandt (Simplot), David Holm, and Nora Olsen Nelson (University of Idaho) all agreed that the texture analyzer is unreliable.

Rich Novy said that footnotes in the table are sufficient. Max Feldman commented that standardization for the purpose of the database will be very important. This should be discussed more in detail in the future. Nora Olsen Nelson suggested creating a subcommittee to standardize the lab-based controlled bruising studies and Jake asked if she could send information on their protocol to Jake Blauer, Jessica Chitwood-Brown, Sagar, and Rich Novy.

Final consensus – it should be made clear in the report whether black spot bruise is evaluated using field-based or lab-based assays, and the breeders currently using lab-based assays will work together to standardize the procedure.

**Clone disposition**:

Graduating clones: AOR12197-4 and CO11037-5W

Returned Clones:

|  |
| --- |
| A13125-3C |
| AOR12197-4 |
| CO11037-5W |
| CO12235-3W |
| CO12293-1W |
| COOR13270-2 |
| NYOR14Q9-5 |
| NYOR14Q9-9\* |

\*NYOR14Q9-9 will be for fresh locations only

Discarded clones: CO13232-25W

New Entries: AC13126-1Wadg

**Regional Specially results were presented by Jeff Koym (Texas A&M).**

* Highest total yield red/white flesh: Chieftain, Red LaSoda, and A08122-12Rsto
* Highest total yield yellow flesh: COTX10118-4Wpe/Y and AORTX09037-1W/Y
* Highest yield < 4oz red/white flesh: A08122-9RY and A08122-12Rsto
* Highest yield < 4oz yellow flesh: AORTX09037-1W/Y and AC10376-2012-1W/Y

Jeff Koym asked the group to consider if a new category should be included from 2 – 4oz.

* Highest yield 4-10oz red/white flesh: Chieftain, Red LaSoda, and Modoc followed by A08122-12Rsto
* Highest yield 4-10oz yellow flesh: COTX10118-4Wpe/Y and Yukon Gold
* High tubers per plant red/white flesh: A08122-9RY and A08122-12Rsto
* High tubers per plant yellow flesh: AC10376-2012-1W/ and AORTX09037-1W/Y
* Fresh merit red/white flesh: A08122-9RY and A08122-12Rsto
* Fresh merit yellow flesh: A08120-4Y and AORTX09037-1W/Y
* Dark red skin color: A08122-12Rsto
* Disease evaluations
  + Jeff Koym asked Sagar if the specialties could be included in the PVY trials and Sagar said yes.
  + Corky Ring Spot resistant: AORTX09037-1W/Y
  + Common scab resistant: POR16PG34-1

Isabel Vales asked if less than 4 oz should be included in marketable yield because of the trend towards small potatoes. Rich Novy agreed with Jeff that if it’s possible to break the categories down into 0-2oz and 2-4oz, that would be helpful. Jessica Chitwood-Brown mentioned that we may be limited by grading ability. Caroline Gray commented that because less than 4oz are considered culls, Colorado doesn’t take data on culls. Sagar agreed that the different classes should be broken down and data on culls should be taken. Brian said that fresh pack sheds do not use weight, but that 2oz is equivalent to anything under 1 ¾ inch diameter, and B size is from 1 ¾ to 2 ¼ inches. Tina Brandt suggested that because dimensions are more important than weight, would be necessary to report that and Jake Blauer suggested that we use the regressions available to go from weight to diameter. Suggestion to invite someone from Tasteful Selections to join the Western Regional meeting next year to talk about their market class.

Final consensus – the western regional group will move to breaking the categories out into 0-2oz and 2-4oz.

**Clone disposition**:

Entries graduate after two years.

Graduated clones: A08122-12Rsto, NDA8512C-1R, AORTX09037-1W/Y, A08120-4Y and COTX10118-4Wpe/Y

Returned clones: A08122-9RY, AC10376-2012-1W/Y, and POR16PG34-1

New entries:

|  |
| --- |
| AORTX09037-5W/Y |
| COTX08365f-3P/P |
| NDTX081451CB-1Y/Y |
| A11582-1R |
| A11573-5RYsto |
| POR16PG25-2 |

**Discussion about checks**

Purple Majesty is needed for a check because there is a new entry that is purple fleshed. The group decided that Red LaSoda is not necessary to include as a check, two red checks is sufficient. Brian asked who would supply Purple Majesty? Brian Schneider said Oregon could supply the seed.

* Proposed variety releases - discussion
* Seed supplies and shipping lists
* Election of new Secretary
* Discussion of location for 2024 committee meeting
* Adjourn meeting ~ 5:00 p.m. PST

**Proposed variety releases – discussion**

The Chair asked if since proposed variety releases were discussed during the tristate meeting, this discussion could be skipped. All attendees agreed.

**Seed supplies and shipping lists:**

Brian Charlton (OSU) informed that a seed request is still needed for trials for any locations who’ve been supplying their own seed and this year they want it from him.

**Election of new Secretary**:

Sagar nominated Shannon Kuhl (University of Idaho), Jake seconded, and the vote was unanimous.

**Discussion of location for 2024 committee meeting**

Previously discussed during the Tri-State meeting and so this discussion was skipped.

**Meeting was adjourned at 5:00pm (MT)**

**Western Regional Committee Meeting (WERA027) attendees**

|  |  |  |
| --- | --- | --- |
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**Tri-State Potato Variety Development Technical Committee Meeting – Minutes**:

February 1, 2023. 8:00 am