

**WCC-27 Annual Meeting
February 7, 2003
Moses Lake, WA**

Chair: Nora Olsen
Secretary: Rich Novy

I. Meeting called to order: 8:10 am

II. Introductions: 33 attendees. Attendance sheet is attached as Excel file (Thank you, Peggy Bain).

III. Approval of Meeting Agenda

Motion to accept made by Tom Salaiz, seconded by Creighton Miller
Unanimously Approved

IV. Approval of Minutes (2002 meeting, Pocatello, ID)

Motion to approve made by Dave Holm, seconded by Mark Pavek
Unanimously Approved

V. Administrative Advisor's Report (H. Paul Rasmussen)

Dr. Rasmussen indicated future budgets for the USDA budget would likely be down; the CSRESS budget would likely remain flat. Emphasis for new funding appeared to be with projects having a Homeland Security focus.

VI. State Reports

CA: Ron Voss

CO: Dave Holm (**See Page 6**)

ID: Steve Love (**See Page 8**)

OR: Ken Rykbost

TX: Creighton Miller

WA: Bob Thornton (**See Page 7**)

After Bob Thornton indicated in his report that WA now had initiated a WRPVT with an organic farmer, discussion ensued regarding desirable traits for organic production. Disease resistance, and the ability to grow with decreased fertilization were some characteristics discussed. Bob mentioned less fertilizer inputs are important because organic fertilizers such as compost, tends to "run out" by midseason and additional applications of more expensive "organically approved" fertilizers are necessary. An economic analysis of the entries grown at the organically-grown site also was included in the WA trial report.

PVP Updates: Bob Thornton indicated he was pleased with the recent meeting of the PVP sub-committee of the Tri-State. The results of the meeting should be helpful to the administrative committee in formulating policy concerning PVP of Tri-State potato variety releases.

VII. Update on Western Regional Potato Variety Database (Steve James)

The potato variety database is located at <http://www.css.orst.edu/coarc/database.htm> and was periodically updated throughout the year. The database homepage averaged 25 visits per day during 2002. The Microsoft IIS web server was disabled by viruses/hackers in late December and the database is currently not available on line. The database web interface will be rewritten in PHP and placed on a UNIX-based web server during the first few months in 2003.

Plans for 2003 include adding interactive variety descriptions in addition to the existing trial data. These descriptions will include plant, flower and tuber pictures, variety characteristics, disease ratings and other general information for the advanced and recently released selections. Eventually, descriptions and photos will be added for every selection in the database.

VIII. Western Regional 2002 Trial Results and Organization of 2003 Trial

Hard copies of each respective WCC trial were handed out. Finalized trial reports, with corrections will be sent to attendees via e-mail. Finalized reports for all Western Regional and Tri-State Trials also can be accessed at the URL below in a PDF file format.

<http://www.ars-grin.gov/ars/PacWest/Aberdeen/spudtrials.htm>

A. Early and Late Trials-WRPVT (R. Novy)

1. Overview of trial was given. Discussion ensued concerning a high incidence of net necrosis-type symptoms at Hermiston. It was felt that this could be due to other disease pressure rather than just PLRV, e.g. purple-top. It was decided to remove "Leafroll" from that reporting column heading, leaving "% net necrosis".

2. Mike Hassel commented that it would be useful to industry to have data concerning tuber number/hill and stems/hill of each entry included in the reported trial data. That data is collected by participating sites but has not previously been reported. Such data will now be included in the trial report beginning with the 2003 report.

B. Western Regional Chipping Trial (T. Salaiz)

Report was given.

C. Western Regional Red-Skinned /Specialty Trial (B. Charlton)

1. Report was given. Bob Thornton asked that the red-skinned selections be categorized separately from the specialty types in the report. It was felt this would improve the readability of the report.
2. Rich Novy suggested that anti-oxidant values for entries in this trial be published in the Washington State University report. Chuck Brown agreed that this could be done starting with the 2003 trial.
3. Brian Charlton indicated that growers would like to see more storage information on entries in this trial. Ron Voss and Herb Phillips indicated they could provide such information from their CA storage studies.
4. Creighton Miller requested that 2002 Western Regional Chipping and Red/Specialty Trial be included in the reports forwarded for publication in the National Potato Germplasm and Enhancement Report. Rich Novy had previously contacted Kathy Haynes, editor of the National Report, and she had at that time indicated it would not be a problem to have them incorporated in the 2002 National Report.
5. All Blue was added as a check cultivar for pigmented flesh types. Discussion also ensued concerning the incorporation of other yellow (besides current check cultivar, Yukon Gold) and white specialty types. However, no other standard varieties were identified.

D. Post Harvest Results (R. Knowles)

Report was given. Information from 1998 to present may be accessed at <http://www.wsu.edu/~fullern>.

E. Disposition of Entries

Discussion ensued with the entries in the 2003 trials summarized below:

WRPVT: 15 entries and 4 check cultivars

WRCT: 5 entries and 2 check cultivars

WRR/ST: 16 entries and 4 check cultivars

Peggy Bain has sent out the finalized list to attendees.

F. Seed Supplies and Shipping Lists (S. James)

Adequate seed was available for all proposed entries. Steve has sent out a finalized shipping list.

G. National Trial Entries (R. Novy)

Rich indicated that Walter De Jong (Cornell) had a limited availability of seed of NY112 due to drought last summer in NY. Walter indicated that seed could be bought from seed growers if the Western Regional Trial Cooperators wished to evaluate NY112 for a third and final year. The consensus was to do so, along with B0766-3. B0564-8 was dropped from further evaluation in the WRCT.

2003 national entries from the Western Region will include A9014-2 and Stampede Russet.

IX. Late Blight Resistance Trials-WA (Thornton/Inglis)

Bob Thornton indicated the results were published in the 2003 Proceedings of the Washington State Potato Conference and also was submitted for publication in Plant Disease. Late blight resistant clone, A90586-11 did very well under heavy late blight pressure with reduced and no fungicide application. Report will be listed and accessible at:

http://mtvernon.wsu.edu/plant_pathology/presentations.htm

X. Corvallis as a trial site for the WRPVT

This agenda item had been previously discussed at the Tri-State meeting. Corvallis will continue to be a late blight screening location but will not be a formal trial site for the WRPVT.

XI. Update on the search for Corsini Replacement (R. Novy)

Rich indicated that the job announcement for Dennis Corsini's position had been advertised from December 16, 2002 through January 31st, 2003. As of January 30th, 2003, 8 applications had been received by ARS Human Resources. Applications postmarked by the 31st deadline would be accepted into the first week of February. Mike Bonman, location coordinator and research leader at Aberdeen, was working on finalizing the evaluation committee. By the middle of February it is anticipated that candidates' applications will be forwarded to Aberdeen from Human Resources.

XII. Additional Business

A. National Potato Council Seed Seminar (S. James)

The 2003 NPC seed seminar will be hosted by Oregon and will take place from December 8-12, 2003. Of interest was the location on a cruise ship that will travel from Long Beach, CA down to Baja, Mexico. Prices presented were very reasonable. More information and registration online can be done at:

www.oregonspuds.com

B. 87th Annual Meeting of the Potato Association of America (B. Thornton)

Bob Thornton and Andy Jensen are co-chairs of the LAC for the annual meeting of the PAA. Washington is the host state in 2003 and the meeting will be held at Spokane, WA from August 10-14, 2003. Additional information can be found at:
<http://www.paa2003.wsu.edu/>

C. WCC-89 (Potato Viruses) to be held in Phoenix, AZ , March 27-28, 2003.

D. Ring Rot Evaluations (D. Holm)

Descriptions of responses of potato cultivars and selections to ring rot infection were compiled by Rob Davidson. Copies were made available to attendees by Dave Holm.

XIII. 2004 Meeting Date and Location

Meeting will be held in Colorado the 2nd week of February. Location and dates will be finalized later.

XIV. Election of Secretary

Roy Navarre was nominated by Rich Novy, seconded by Nora Olsen. The vote on his appointment was unanimous with no dissention.

XV. Adjourn: 11:30

Colorado Potato Breeding and Selection Report

The major objectives of the Colorado Potato Breeding and Selection Program are: (1) to develop new potato cultivars (russets, reds, chippers, and specialty) with increased yield, improved quality, resistance to diseases and pests, and tolerance to environmental stresses; (2) to provide a basic seed source of selections to growers for seed increase and commercial testing; and (3) to evaluate promising selections for potential seed export (interstate and international). The primary emphasis is placed on the development of russet cultivars. The balance of the breeding effort is devoted to developing reds, chippers, and specialty cultivars. Additional breeding emphasis is placed on identifying germplasm and developing cultivars that are: (1) immune to PVY; (2) resistant to late blight (foliar and tuber); (3) resistant to dry rot (*Fusarium* and early blight) and bacterial soft rot; (4) resistant to powdery scab; (5) that have improved nutritional quality and other “consumer” characteristics such as improved red skin color retention and improved shelf life.

Sixty parental clones were intercrossed in 2002. The primary emphasis of the crossing block was cultivar development and late blight resistance. Seed from 359 combinations was obtained.

A total of 48,153 seedling tubers representing 187 families were produced from 2000 and 2001 crosses, for initial field selection in 2003. These seedlings represent crosses segregating for russet, reds, chippers, specialty types, and disease resistance/immunity (PVX, PVY, PLRV, and late blight). Second thru fourth size seedling tubers will be distributed to Idaho (USDA), Maine (USDA-Beltsville), Minnesota, Oregon, Texas, and Alberta, Canada. Colorado grew 77,072 first year seedlings, with 848 being retained for subsequent planting, evaluation, and increase in future years. Some of these seedlings were obtained from breeding programs in Idaho, Texas, and Canada.

Another 1,195 clones were in 12-hill, preliminary, and intermediate stages of selection. At harvest, 282 were saved for further observation. Forty-two advanced selections were saved at harvest and will be increased pending final evaluations. Another 232 selections and cultivars were maintained for germplasm development, breeding, other experimental purposes, or seed increases for the other programs.

Forty-nine Colorado selections were screened for resistance to late blight by Oregon State University. About 45% of the selections show relatively high levels of resistance (\leq 50% foliar infection).

Colorado advanced selections evaluated in the Southwest Regional Trials, Western Regional Trials, or by producers, included 10 russets (AC87084-3RU, AC89536-5RU, AC92009-2RU, AC93026-9RU, AC93047-1RU, CO92077-2RU, CO93001-11RU, CO93016-3RU, NDC5372-1RU, and TC1675-1RU), 6 reds (CO89097-2R, CO93037-6R, CO94019-1R, CO94065-2R, NDC5281-2R, and NDC6184-3R), 3 chippers (AC87340-2W, BC0894-2W, and NDC6084C-2W), and 6 specialty selections (CO94165-3P/P, CO94183-1R/R, CO94222-6RU/Y, VC0967-2R/Y, VC0967-5R/Y, and VC1002-3W/Y).

Advanced selections/recent releases undergoing commercialization include AC89536-5RU, CO89097-2R, Cherry Red (DT6063-1R), Fremont Russet (CO85026-4), and Durango Red (CO86218-2), and BC0894-2. BC0894-2W is a chipper with international export potential.

**2002 Washington State University
In Field Regional/ Tri-State Cultivar Evaluation
Robert E. Thornton**

Tri State advanced clones were included in Early, Late, Late Organic and Red and Specialty Regional Trials. The same eight clones were in the first three trials with another eight in the Red/Specialty Trial. None of the clones in the Early trial had a higher yield than Russet Norkotah and only one had an equal or higher percent US No. 1's. One clone had total yield equal to or higher than Russet Burbank and all had higher US No. 1's. Fore clones had equal or higher yield than Ranger Russet and all but one had higher percent US No. 1's. The potential for economic return to growers is being estimated as it has for the past several years for the late harvest entries using a "mock" processor contract. These results are not completed at this date. In the Late trial all eight clones had higher total yield and percent US No. 1's than Russet Burbank, all eight clones also had higher total yield than Ranger Russet and five had higher percent US No. 1's. Russet Norkotah had the highest total yield of all entries and higher percent US No. 1's than all but two clones. In the Late Organic trial one clone had higher total yield and six had higher percent US No. 1's than Russet Burbank that had higher total yield than either Ranger Russet or Russet Norkotah and higher percent US No. 1's than Russet Norkotah. All clones had total yield equal to or higher than Ranger Russet and Russet Norkotah. Tri State entries were evaluated in both early and late harvest Tri State and Regional trials located in grower cooperator fields. Nine clones were included in the Early Tri State trial. Two clones had higher total yield than Russet Norkotah the highest yielding check cultivar. Four clones had higher total yield than Ranger Russet the lowest yielding check cultivar. Only one clone and Russet Norkotah had acceptable percent US No. 1's. In the Late Tri State trial only two clones had higher total yield than the Ranger Russet and Russet Burbank checks. All entries had acceptable percent US No. 1's. Entries in the Tri-State and Regional trials are evaluated for tuber size distribution (by weight) and tuber specific gravity by tuber size class. Having this information on the same genetic material in early harvest, late harvest, conventional and organic trials provides the opportunity to observe whether the tuber size and tuber specific gravity profiles remain the same or differ in response to length of growing season and the different cultural practices utilized. A replicated Late Blight trial consisting of three replications of ten plants was carried out in cooperation with Dr. Debra Inglis at the WSU Research and Extension Unit at Mount Vernon. No fungicide treatments were used to suppress Late Blight in the trial. Susceptibility to Late Blight disease was measured by weekly monitoring of foliar infection in trial entries from early July through early September. Disease progress is used to calculate the numerical values for the area under disease progress curves (AUDPC) for each clone and cultivar. Data from the 2002 trial is not available at this time. In the past clones and cultivars evaluated for susceptibility to Late Blight have displayed differences in disease progress as well as total AUDPC. Tri-State clone A90586-11 that has been shown to have resistance to Late Blight and acceptable horticultural characteristics was evaluated and compared to Russet Burbank for potential economic returns to the grower using the "mock" processing contract for three Late Blight control programs and a non-treated control. It was found that none of the Late Blight control programs resulted in higher yield or potential gross dollar return for A90586 while all of the control programs resulted in both higher total yield and potential gross return for Russet Burbank. All treatments of A90586 produced higher total yield and potential gross return than the same treatments applied to Russet Burbank.

Idaho Report – 2003

Summit Russet, was approved for release in 2002. This new russet type variety is resistant to most common field diseases and produces a high percentage on U.S. No. 1 tubers with very high fresh market and processing quality. Pre-Nuclear mini-tubers are currently being produced for distribution to seed growers in the spring of 2003.

In 2002, 32 trials were grown at seven locations throughout southern Idaho. Included were variety trials, management studies, germplasm enhancement studies, and seed increases.

Improvements in germplasm resistant to corky ringspot were evident in 2002. High levels of resistance were found in clones with russet skin, long shape, and good internal quality. Three or four of these clones will be intensively evaluated for yield and quality, beginning in 2003. A second year of characterization was completed on three populations segregating for resistance to corky ringspot. These populations will be used to identify molecular resistance gene markers. Disease pressure this past year was exceptional and the characterization effective.

A study to characterize North American germplasm for vitamin C content was completed. A manuscript describing this research has been accepted for publication in HortScience. A three to four-fold range of vitamin C content was found among commonly used parental germplasm. Several of the clones with high levels of vitamin C were intercrossed to begin a recurrent selection program to begin the process of identifying the upper limit.

In a quality related study, it was determined that the Rapid Viscoanalyzer can effectively detect differences in tuber quality as related to baked and fried product texture. Both before and after storage, a strong correlation emerged between viscoanalyzer measurements and consumer preference as determined by a sensory panel.

The first year of an irrigation study was completed. One objective of the study was to determine whether variety choice is a viable management factor in dealing with irrigation water shortages. Early indications from the study show distinct differences among varieties for response to limited water availability.

This research is the Idaho component of the Northwest Potato Variety Development Program (Tri-State). This project has had a positive influence on the Northwest potato industry through the release of new varieties that provide advantages of disease resistance, productivity, production efficiency, and tuber quality. Added value of variety releases is now estimated at approximately \$135 million.

Publications

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