

Minutes
NRSP-6 Meeting, Sturgeon Bay, Wisconsin
July 8-9, 2009

Schedule: (see "TAC09 AGENDA.doc" at <http://www.ars-grin.gov/nr6/admin.html> for agenda)

Attendees: (see <http://www.ars-grin.gov/nr6/admin.html> for current committee membership)

Administrative Advisors

Edward Ashworth (NE)
Richard Guthrie (S)
C.Y. Hu (W)
Molly Jahn (NC)

Technical Reps

J.Creighton Miller (SR)
Chuck Brown (ARS)
David Douches (NC)
Benoit Bizimungu (Ag Canada)

CSREES

Ann Marie Thro

USDA/ARS Administration

Harry Danforth, ARS MWA Assoc. AD
Larry Chandler, ARS MWA AD
Phil Simon, ARS VCRU RL

APHIS potato quarantine

Jorge Abad

Industry

Robert Hoopes, Frito-Lay

U-Wisc breeding program

Jiwan Palta, leader
Felix Navarro

NRSP6 staff:

J. Bamberg, M. Martin, D. Spooner, A. del Rio

Others

Christian Thill, U-Minn breeder
Ben Brancel, UWisc CALS

July 8

Chair David Douches called the meeting to order at 8:30am.

Walter De Jong (secretary) was not able to attend this meeting. Jiwan Palta volunteered to take the minutes of the meeting.

Ben Brancel is representing Dean Molly Jahn, who would come to meeting around noon. She would like to have few minutes to talk to the group. Benoit Bizimungu is representing Richard Tarn who retired from his position recently.

Chair asked for the approval of the agenda for 2009 meeting. C. Miller moved, J. Palta second. Motion approved unanimously.

John Bamberg reported that genebank has accomplished the tasks they were directed to do at the 2008 TAC meeting. Impact statements were added to the Annual Report. Progress was made in seed increase techniques. Enhanced communications to clientele (farmers, citizens of the state) on the importance of the genebank. John and Max attended each of the four regional SAESD spring meetings and gave presentations on NRPS6 to the directors.

Chuck Brown indicated that a pie chart outlining the state and federal support would be useful.

Ed Ashworth asked the group about the possibility of generating support for the genebank from private foundations. J. Palta indicated that in the past Rockefeller Foundation supported potato research. There is a growing public interest in "green/sustainable" agriculture, with which NRSP6 is a good fit.

Chuck Brown indicated that there is a perception that we are releasing too many varieties as compared to what the growers can handle. Discussion followed on developing varieties in relation to sustainability e.g. better water use efficiency, better soil nutrient utilization efficiency, better human nutrition, etc. This could give industry such as McDonalds to advertize that potatoes they serve are produced with less chemical and water input etc (sustainability rating).

Robert Hoopes indicated that although several traits such as high yield, dry matter, storability, etc., are of interest to the industry, the concept of locally grown is important to the public. In addition, lowering acrylamide is one of the top priorities.

Chuck Brown informed that there will be a one day brainstorming session at the Potato Expo in January 2010. There will be attempt to produce a PAA-NPC document on research priorities at the national level. J. Palta suggested that genebank could have a booth at the Potato Expo. Everyone was positive about this idea. C. Brown will call John Keeling to see if the booth fee could be waived.

Chair appointed resolution committee: Chuck Brown, Creighton Miller

Last year's minutes approved: Brown moved and Thill seconded; approved unanimously.

Agenda Item 5. Lead AA

C.Y. Hu indicated that AA should come from NC region. Lead AA is decided by the four regional AAs. After some discussion it was suggested that Molly Jahn be approached for the lead AA. Ben Brancel indicated that Molly Jahn is interested in finding long term sustainability for the genebank. She is supportive of finding new sources of funding. C.Y. Hu noted that renewal document should be written this fall. This is to include review of the progress over past 5 years and proposed project for next 5 years. Current project will end Sept. 2010. All NRSPs are going through review process. NRSP-6 received support from the Western and NC directors and not much from the NE directors. Richard Guthrie can solidify support from the southern directors. The 1% OTT funding which is currently the source of the NRSP6 budget is not mandated by law, and could be rescinded by the SAES directors. Larry Curtis has been appointed as the new AA for the WR.

C. Miller thanked C. Y. for the outstanding job he has done as the lead AA.

Agenda Item 6: Other regional AAs

Ed Ashworth - NE: This project is sitting in a vulnerable position. There is some good news. Senate yesterday approved 4% increase in Hatch dollars. Rikki Sterret 's position has been filled. Large amount of potatoes are shipped from West and Midwest to East (high consumption area). Greg Porter is looking into late blight resistant cultivars to reduce the weekly applications of fungicides currently used in the East.

Richard Guthrie - S: John Bamberg's visit to the spring directors' meeting made a good impression, particularly in showing the substantial support the genebank is already receiving from sources other than MRF. Richard would retire before the meeting next year. It was suggested that to generate support of NRSP-6, a one page agenda brief on NRSP-6 should be submitted to the regional meetings each year that an in-person report is not presented.

Molly Jahn - NC: After lunch Dean Molly Jahn made some comments regarding support of the Potato genebank. She indicated that with the consistent reduction in state funding we have to look for alternative ways (Business Model) to support the genebank. The UW-CALS investment in potato research and extension is very high and is second to dairy. Ben Brancel will be helping in this. Molly indicated that she would identify a senior person who could serve in the Lead AA role.

Agenda Item 7. Regional and ARS Tech Representatives

Chuck Brown - ARS: Nine scientists provided reports. Kathy Haynes is expanding germplasm base resistant to late blight. Rich Novy is looking at Potato Cyst Nematode resistance and Dennis Halterman looking for genes similar to RB. Chuck Brown evaluated 50 accessions from the Andigena core collection and seems to have found good resistance to black dot. Reported on an excellent example of a success story of taking the NRSP6 germplasm and transferring disease resistance to develop materials. Took 20 years to produce an advanced clone with multiple resistances to root rot nematode using S.

bulbocastanum fusion hybrids of John Helgeson. Resistance against cold sweetening in Premier Russet came from *Solanum phureja*. Ranger Russet is being replaced by Alturas and Umatilla.

Walter DeJong - NE: Could not attend the meeting.

Creighton Miller - S: Summarized activities. Major emphases is Zebra Chip. There have been multimillion-dollars losses to the chip industry. Two years ago Texas gave \$800,000 for research effort in this area for a two-year period. Primary support was for pathologist. Some support came to the breeding program. Eight selections have been identified that are free of Zebra chip when planted in the presence of natural inoculums. Another project is looking for resistance at the species level. Eventually we may have to look at wild species for the sources of resistances. Robert Hoopes indicated that this is a serious problem for the chip industry. Craig Yencho is looking at *S. phureja* as a source for heat resistance. Richard Veilleux's doubled monolpoids of *S. phureja* from the genebank are the basis of the potato genome sequencing project. The Miller lab has found strong anti-cancer properties in extracts of *Solanum jamesii* from the genebank.

Isabel Vales - W: Isabel Vales could not attend the meeting.

Dave Douches - NC: Dave Douches: Evaluating a diploid population for Colorado Potato Beetle resistance. Also evaluating *S. microdontum* selections for tuber and foliar late blight resistance in cooperation with genebank staff, and they have identified a potent R gene. Seven species are being used in the breeding program for variety development. Germplasm is being evaluated for ornamental potential. Mentioned use of germplasm for looking for natural genetic variation for PVY resistance and the great potential for intragenic transformation developed by Simplot for using potato genes mined from the NRSP6 genebank stocks. Reviewed the upcoming SOLCAP workshop scheduled for Sunday August 9th at the PAA meeting at Fredericton, New Brunswick. Douches lab found that there was a correlation between acrylamide and chip color and sugar over a broad range of tuber sugar contents. However, in the very low sugar range (0.001 to 0.002%) there was no correlation. Moisture levels and fructose contents of the tuber can affect acrylamide.

Other reports

Christian Thill: Major effort is being directed to select for late blight, PVY and common scab. Have developed a promising technology using liquid nitrogen freezing of the meristem cells to eliminate virus contamination.

Jiwan Palta: In addition to yield, grade, disease resistance and pest resistance, the breeding program has a major effort on tuber internal quality, storage and fry quality, scab resistance and late blight resistance. Several species and progenies thereof are being screened for health related traits such as K+. Numbers of species are also being looked at for desirable traits such as tuber Ca, cold tolerance and soft rot resistance. The Wisconsin program is a closely integrated with the genebank's evaluation mission.

Agenda Item 8 Agriculture and Agrifood Canada.

Benoit Bizimungu : Richard Tarn retired. Benoit Bizimungu is moving and consolidating the potato breeding program in Fredericton. His program has utilized *S. oplocense*, *S. chacoense* and *S. pinnatissectum*. The breeding program emphases include potato beetle resistance, bacterial wilt resistance, drought resistance and new byproducts.

Agenda Item 9: Industry Perspective

Robert Hoopes: Frito Lay gets potatoes from every region. Frito Lay has had long-term relationship with the genebank. Have used varieties over the years that have 15-20 species in their pedigrees. All varieties have *S. chacoense* in their pedigrees. PVY resistance obtained from *S. stoloniferum*. *S. berthaultii* may have Zebra chip resistance. Dan Ronis' program is cooperating with genebank staff on nutritional and quality properties like starch ratio, acrylamide (low asparagine, low pH) and high tuber calcium accessions. Some studies have shown that blanching can reduce acrylamide by 90% but the texture of the chip was influenced.

Simplot representative Caius Rommens' travel plans were thwarted at the last minute, but has sent a report / letter of support that will be included in the project renewal document. Simplot is setting up a new research farm near Boise, ID.

Agenda Item 11: Collecting and Taxonomy

David Spooner distributed several copies of his publications. He pointed out that Jack Hawkes had documented 232 potato species. His research has shown that many of these should be combined, and now the number of species is less than half.

Agenda Item 10: NRSP-6 report and FY 10 outlook

(see "ar2008.doc" at <http://www.ars-grin.gov/nr6/admin.html> for Annual Report, and interim update report "Genebank News and Activities since 2008 Annual Report.doc")

John Bamberg asked the group to provide feedback on the NRSP-6 report and impact statements which are posted on the website. Alfonso del Rio is continuing to perform technical research to help the genebank find the most efficient methods to preserve the maximum genetic diversity. Recent developments in evaluation include an emphasis on consumer-oriented traits, particularly nutritional ones like antioxidants, potassium, glycemic index, pH, satiety value, and anticancer agents. The genebank is also pursuing multiplex comprehensive evaluation of *S. microdontum*, which has numerous valuable traits and is quite easily introgressed into the *tuberosum* breeding pool.

Budget: University of Wisconsin salary support to the genebank discontinued at the end of FY08. Molly Jahn pointed out that state funded research support is threatened at this time. All state employees are subjected to furlough for 8 days. She indicated that we have to look for alternate sources of support possibly approaching foundations (including Mc Donald's etc.) and others. Ben Brancel suggested that we should create a list that captures must do, should do, and would do (with minimum support). We should look for opportunities for partnerships. John Bamberg pointed out that genebank staff are already vigorously pursuing such extramural funds and opportunities to achieve greater efficiency, and

that the program has already significantly down-sized. He asked the group if a budget of \$150,000 should be proposed. C. Y. Hu indicated that they will not vote for no more than \$150,000. Ed Ashworth suggested that a request should be made for \$150,000 and an additional amount proportional to the increase associated with Hatch increase.

Project-Renewal Writing: The following were specified to be on the renewal writing team: Ann Marie Thro, Chuck Brown, CY Hu, Molly Jahn, Larry Chandler, Peter Bretting and Christian Thill. John Bamberg will prepare a draft soon.

Agenda Item 13: CSREES (Ann Marie Thro)

Ann Marie Thro provided an update on the budget and CSREES in general. Potato special grant budget is 9% less this year. Increases in HATCH and AFRI budgets for 2010 are proposed by the President. Dr. Rajiv Shah is going to be the new Undersecretary of Agriculture. CSREES will have a name change to National Institute for Food and Agriculture. NRI is replaced and expanded by AFRI. It will include plant and animal breeding research (see synopsis at: www.csrees.usda.gov/funding/afri/afri_synopsis.html). Ann Marie pointed out that non-technical summary in CRIS reports is very important to communicate impact. Also very important to acknowledge grants and agency in all publications.

Agenda Item 14: APHIS/ Quarantine (Jorge Abad)

Jorge Abad explained the procedure for bringing potato germplasm into the country. They (Joe Foster, leader) screen for all virus and bacterial diseases. Zebra chip has appeared in tomato. Last year two new viruses were intercepted (JCM-23, JCM-79).

Meeting adjourned at 5:30pm followed by supper at "The Log Den".

July 9

Chairman Dave Douches called the meeting to order at 8:30am.

Dave Douches reported that there is an exhibit at the National Botanical Gardens on the Mall by the Capitol in Washington DC. John Bamberg has been asked to present there in the fall of 2010. With assistance from USBP (John Keeling) an exhibit featuring potato transgenic work from MSU is on display there, including a video of transgenic potato displaying resistance to Colorado potato beetle (shown to the group).

Agenda item 15: Review and approve resolutions

Four resolutions were unanimously approved (see <http://www.ars-grin.gov/nr6/admin.html> or "Copy of Minutes" link at the end of this section in NIMSS for full text):

- 1: Memorial for Robert Hougas, first genebank Project Leader.
2. Appreciation to CY Hu for outstanding leadership as Lead AA.

3. Appreciation to Project staff for hosting the current meeting.
4. Appreciation to Richard Guthrie for excellent service as SR AA

Agenda item 16: Elect new officers and set next meeting

Moved and unanimously approved that the current officers advance for the upcoming year: Isabel Vales = Chair, Walter DeJong = Vice Chair, and that Creighton Miller serve as secretary.

The 2010 meeting will be joint with the July 26-29 RTAC/PGOC/CGC Chairs' meeting at Geneva, NY.

Creighton Miller moved to adjourn the business meeting, second by J. Palta and unanimously accepted.

Tour of genebank followed until about noon.

Respectfully Submitted,

Jiwan Palta