

# **Minutes of the Soybean Crop Germplasm Committee meeting**

**St. Louis, MO**

**16<sup>th</sup> February, 2009**

Members in attendance: Vince Pantalone, Silvia Cianzio, Randy Nelson, Esther Peregrine, Jeff Thompsen, John Rupe, Istvan Rajcan

Regrets: Larry Purcell, Glenn Bowers, Rusty Smith

Absent: Ron Hammond, Greg Tilka, Rouf Mian, Terry Niblack

Guests: Wade Montminy, Emerson Shipe

Call to order by Istvan Rajcan, Chair, Soybean Germplasm Committee

Approval of the agenda

New members were welcomed:

Silvia Cianzio - public breeders north

Terry Niblack - nematologist, entomologist or pathologist

Rouf Mian - Physiologist, molecular geneticist, biochemist, genomicist, or cytogeneticist

## **Germplasm Collection Report**

As of January 1, 2009 the USDA Soybean Germplasm Collection now comprises:

18,686 Glycine max entries

1, 117 Glycine soja entries

996 Perennial Glycine species – some species reclassifications have been made. Presently 19 perennial Glycine species are deposited in the collection.

For a collection Total of 20,799 entries.

Seed lots were distributed from 12,679 accessions in response to 600 requests.

### **Acquisitions**

In Vietnam, we are working with scientists at the Vietnam Academy of Agricultural Sciences in Hanoi and at Can Tho University to acquire primitive soybean varieties from both the southern and northern parts of the country. This collection is being funded by the Plant Exchange Office in ARS. We have already obtained 209 lines and expect to get more, especially from the south. In addition, approximately 50 accessions that are not currently in GRIN have been requested from Russia that are in early maturities.

The entire *Glycine max* collection was requested by EMBRAPA, Brazil and MG V through IX have been sent thus far.

We are continuing to explore possibilities of acquiring additional *Glycine soja* accessions from east Asia. Istvan Rajcan may be able to facilitate communications with a *G. soja* breeder from Jilin Academy of Agricultural Sciences, Jilin, China.

### **Core Collection**

A tentative core collection has been established consisting of 1,696 accessions based on a proportional multivariate sampling strategy using passport, quantitative and qualitative data. Official release of the core collection is being delayed pending the deposition of a manuscript describing the process that has been submitted.

### **General Collection**

In collaboration with Perry Cregan and David Hyten, a grant has been obtained from the United Soybean Board to characterize the entire annual *Glycine* collection with 50,000 SNPs. DNA has already been extracted from over 3,000 accessions. It is anticipated that the SNPs that will be used in this project will be identified and the plates ordered by early summer. The entire project will be completed in 2011. One question that was raised is whether the existence of the soybean whole genome sequence would change our needs for long-term pathogen collection diversity?

All scientists collecting data on accessions from the germplasm collection are encouraged to send their results to Esther Peregrine for inclusion in the GRIN. Breeders wishing to have new releases added to the active collection are encouraged to send up to 2 pounds of seeds to Urbana. Seeds sent to the National Center for Genetic Resources Preservation are no longer shared with the Collection in Urbana. Digital images of accessions with unusual features have been added to the GRIN and can be accessed along with other information about the lines.

24 germplasm lines that had less than five requests in the last five years are being removed from the active collection and placed in long-term storage in Fort Collins, CO. These lines will still be available, but will no longer be maintained by the active collection at Urbana.

Breeders are asked to consider that NPGS at Fort Collins does not release seed of newly registered cultivars for 5-years. Breeders are encouraged to send a statement to the Curator authorizing ARS to distribute their seeds – this could facilitate seed requests that occur within the first few years of a cultivar’s release.

### **GRIN (Mark Bohning, Esther Peregrine and Randy Nelson’s report)**

Gary Kinard has been appointed research leader for National Germplasm Resources Lab which includes the GRIN.

GRIN is changing to GRIN GLOBAL. This is being done by a major grant from the Bill and Melinda Gates Foundation. The new system will be designed to be used internationally and will be free allowing access in poorer countries. It is expected to take four years to phase in GRIN GLOBAL.

Considerable data currently exists for accessions in GRIN; other information is lacking. The Assistant Curator urges researchers who request accessions and acquire new evaluation data to contact her. For example, if material is screened for a disease, it is valuable to know if an accession is either S or R for the disease. See below.

### **Disease and Insect Screening**

One of the problems in reporting screening results is that there are no standard methods or reporting standards for diseases and insect damage. The GRIN allows for a complete description of the procedures used to obtain data and this information can be accessed along with the data. A longstanding problem in screenings is that results are not always reported back to the curators or GRIN. Many times when results are reported, only the resistant lines are reported. This means that the susceptible lines may be repeatedly tested for the same pathogen or insect

since they were not labeled as susceptible. Scientists collecting data on accessions from the collection are encouraged to send data on all accessions evaluated.

### **Report on the meeting of the CGC Chairs in Fort Collins, CO, June 2008**

Rusty Smith attended it on behalf of Istvan Rajcan and submitted a report, which was presented in absentia. It is included in full in the Appendix.

### **Discussion about Patent issues (initiated by Silvia Ciazio)**

A discussion ensued regarding issued Patents whose general and specific claims may severely limit scientific research. A question was raised regarding whether the breath of modern patent claims is fundamentally a benefit or detriment to society? A suggestion was made to include an Intellectual Property session during a future Soybean Breeders Workshop meeting. If you know of a well-qualified individual who would volunteer to present information to better educate the Breeder community on IP issues, please forward that information to the Workshop Chair.

Election of new officers. Istvan Rajcan has completed his two year term as Chairman and passed it on to the current Vice Chairman, Vince Pantalone.

Jeff Thompson representing private breeders north has been elected as new Vice Chairman.

## **Appendix**

### **Minutes from Crop Germplasm Committee (CGC) Chairs Meeting June 2, 2008, 3pm.**

By Rusty Smith

-There are no appropriations by congress for 2008. There is limited funding, especially for evaluation. There is a CSRES "White Paper" related to this at their web site. Grants may be available for specialty crops.

-Although Jeff Dahlberg (the former sorghum curator and currently the Crop Germplasm Committee Chair for Sorghum) was not present, he had some concerns placed on the agenda and discussed. Jeff was concerned that ARS Cat IV Research Leaders are being changed to Cat I scientists and that therefore they will need to do research. Jeff is opposed to this because doing research will take time away from their germplasm work. The problem is that it is otherwise hard to get Cat IV scientists promoted.

-Also from Jeff; there are non-Federal as well as Federal curators.

-There was concern that the US does not promote itself as a leader in germplasm maintenance. Agriculture in the US is so successful that it is taken for granted.

-Global Trust was mentioned, but I have no specific notes about it.

-There will be an integration of data bases. They intend to completely redo GRIN. It is now written in Oracle.

-There was some discussion that some companies may start to screen and patent genes from wild germplasm. I think this was another concern of Jeff Dahlberg, but he was not there to discuss it.

-MTAs were mentioned, but I have no notes about them.

### **Minutes from Joint CGC and Plant Germplasm Operations Committee (PGOC) meeting, June 3 and 4, 2008 (all day both days).**

-There are 40 Crop Germplasm Committees.

-Large companies (names mentioned were DuPont, Monsanto, and Syngenta) are applying for patents on plant genes. Jeff Dahlberg made it to this meeting and finally got his chance to discuss it with everyone). Jeff was very concerned about this, but there was not much discussion about it. National Program Leader Peter Bretting commented that there was nothing USDA could do, as it is outside of their domain.

-Jeff discussed his current position with me during a break and indicated that he is employed by the sorghum commodity group as the CGC chair. He believes that he is able to do more for the sorghum committee because he has a longer term and fewer competing assignments; the committee is his primary concern. He is able to lobby congress, unlike Federal employees. Jeff has increased the sorghum germplasm budget considerably because he is an industry representative and can directly lobby congress. He recommends that all CGCs have commodity representation.

-Standard Material Transfer Agreements (SMTA) were discussed.

-GRIN-global will replace GRIN and will be funded by external grants—global crop diversity trust. Bill Gates gave 35 million dollars to the global crop diversity trust and personally read USDA's grant proposal. Apparently GRIN-global will initially be available in four languages. Current versions of GRIN-global are now running and Pete Cyr would like to receive comments from users about the new system. For making comments, see the bulletin board at <http://cool.ars-grin.gov/gringlobal/forums/>

-The ups and downs of Association mapping were discussed.

-There are now 130 CRISs in National Program 301. For the last program review, 88% received moderate or higher ratings on their proposals.

-Seed of some crops deteriorate more quickly in liquid nitrogen than in freezers.

-Peter Bretting spoke and said that budgets will shrink or stay the same. He said that ARS does not have the authority to charge for services. Project plans are not public records. There will be a continuing resolution through Feb/Mar 09 (looks like he called that one pretty well). He went on to say that ARS is not authorized to collect materials from Park Service land because ARS and The Park Service can't agree over the MTA. The practice of ARS has been to freely give material to 3<sup>rd</sup> parties, whereas the Park Service seems to want to get income from what it has (no one from the Park Service was there for comment). Hence, ARS cannot put materials from the Park Service into its collections.

-We toured the NCGRPs storage facility for plant materials. I have to say I was mightily impressed and proud to be a part of such an organization that has the foresight, will, and ability to preserve some of the true treasures of nature and the means of survival and well being for the world's people.