

Soybean Germplasm Committee Meeting February 14, 2022

The Zoom meeting was called to order by chair Thomas Hoffman.

Members present were:

Thomas Hoffman, Chair and Private Breeder North (Corteva, Johnston, IA), (chair 2020-2022, private breeding term 2016-2022)

Anna Locke, Vice-Chair and Physiologist (USDA-ARS, Raleigh, NC) (vice-chair 2020-2022, physiologist term 2020-2023)

Roy Scott, *ex officio* Nation Program Staff representative

Adam Mahan, *ex officio* Curator (USDA-ARS, Urbana, IL)

Benjamin Bartlett, Secretary and *ex officio* Assistant Curator (USDA-ARS, Urbana, IL)

Rusty Smith, *ex officio*, Associate Curator (USDA-ARS, Stoneville, MS)

Dechun Wang, Public Breeder North (Michigan State University, East Lansing, MI) (term 2016-2022)

Bob Stupar, Genomicist (University of Minnesota, Minneapolis, MN) (term 2020-2023)

Milad Eskandari, Canadian Breeder (University of Guelph) (term 2015-2021)

Lilian Miranda, Private Breeder South (BASF, Pikeville, NC) (term 2016-2022)

Leon Sun, Pathologist (BASF) (term 2020-2023)

Qijian Song, Molecular geneticist, genomicist (USDA-ARS, Beltsville, MD) (term 2020-2023)

Krystel Navarro, Pathologist (Corteva, Johnston, IA) (term 2020-2023)

Members not present:

Jennifer Jones *ex officio* SmithBucklin/United Soybean Board representative (Chesterfield, MO) (No longer with SmithBucklin/USB, need to find replacement)

Zenglu Li, Public Breeder South (University of Georgia, Athens, GA) (term 2016-2022)

Incoming members present:

Aaron Lorenz, Public Breeder North (term 2023-2026)

Benjamin Fallen, Public Breeder South (term 2023-2026)

Innan Cervantes Martinez, Private Breeder South (term 2023-2026)

Others present:

Peter Bretting (USDA National Program Leader, Crop Production and Protection)

Anne Gillen (USDA-ARS Research Geneticist and Uniform Soybean Test coordinator)

Thomas Hoffman summarized the agenda for today's meeting and had everyone introduce themselves.

Thomas Hoffman asked for approval of the previous meeting's minutes. The minutes from the meeting on Feb 18, 2021 were approved.

Adam Mahan presented the annual report on the Soybean Germplasm Collection, which he had also emailed to the committee. Additional comments on the report are summarized below:

Soybean researchers in India requested a large portion (5,000 accessions, ~25%) of the collection, which served to increase the amount of seed packets distributed compared to the 5-year running average (~20,000). International seed requests require additional regulation to ensure proper transfer of germplasm material.

Perennial soybean remains challenging to increase seed production in the greenhouse, with a goal of increasing 100 accessions per year. Limited greenhouse space, long plant maturation times, and low seed production prevent greater seed production.

Adam is encouraging email requestors to register and submit seed requests via GRIN to streamline the order fulfillment process. Most new acquisitions for the collection are private varieties with expiring PVPs. Perennial soybean sequencing will be conducted at Cornell. Adam predicts that a separate processing setup will be required to handle the large number of roundup ready varieties coming off PVP in the next few years. Adam discusses plans to digitize the Collection's 50+ years of deteriorating paper records. Aaron Lorenz mentions that some libraries offer digitization services. Anne Gillen suggests asking the National Agricultural Library if they could help. Regarding the winter nursery, Krystel Navarro asks if materials are sent to Puerto Rico; Adam replies that Randy Nelson had moved from PR to Costa Rica because of seed quality issues. Adam asks if NIR can be used for fatty acid estimates, specifically for high/low tails. Anne Gillen says no, based on her experience. Adam might reach out to Jason Gillman for guidance. Milad opines that high/low tail info from NIR might be useful for breeders. Aaron Lorenz says he can distinguish high/low for oleic but not linolenic on NIR. Adam invites more input via email. Roy Scott asks Adam for information on his fatty acid analysis needs [AL note: Adam and Roy had this exact same exchange in 2021, according to the minutes]. Adam mentions that maintaining perennial species in the collection could be important because most are from Australia, and Australian perennial-focused soybean scientist positions are not being refilled—risk of losing genetic resources if the US doesn't collect and preserve germplasm. Thomas Hoffman asks if there is a strategy being developed to handle incoming transgenic varieties. Adam says he will start by dedicating a smaller thresher to the transgenic varieties. Adam points out that while this would not keep transgenic traits separate, one of the most critical problems with seed contamination is shipping seed internationally with USDA's guarantee that it is not transgenic. Leon Sun asks how data for GRIN are selected when there are multiple, differing reports. Adam replies that GRIN can handle either two separate reports or average values from multiple reports.

Adam Mahan reported on facility needs and potential facility upgrades for the soybean germplasm collection, summarized below:

The Soybean Germplasm Collection is housed in an aging USDA building on University of Illinois ground. UI may eventually demolish older buildings in that part of campus, so USDA has been hesitant to invest in facilities upgrades. UI leadership has begun to more actively pursue options for demolition and rebuilding in this area of campus, with a possible long-term goal of moving all "field laboratory" space off of main campus, about 2 miles south. ARS personnel at UI, including Adam and Benjamin, are taking stock of their current facilities—square footage, type of square footage, cold storage, etc. to be prepared, in case funding for facility upgrades becomes available and/or UI eventually proceeds with plans to demolish the current Germplasm Collection building. Currently the Germplasm Collection has ~900 sq ft of cold room space, of varying quality (Goal is 40°F/25% humidity for storage).

[Roy Scott and Peter Bretting leave the meeting at this point.]

Thomas Hoffman asked for nominations for new Vice-Chair. Krystel Navarro volunteered, if her term as a breeder can be extended/renewed. Bob Stupar and Krystel Navarro ask for a list of who is leaving the committee this year; Thom says that he will email this out to everyone.

Thomas reviewed the Committee by-laws: there is a paragraph that states the assistant curator will perform certain responsibilities, some of which are also described as Vice-Chair responsibilities. Benjamin Bartlett says he is willing to record minutes and keep track of committee membership. Thomas says that he will rewrite the paragraph to

reflect that organization of elections for SCGC members is the Vice-Chair's responsibility. He asks if the Committee is ok with that and there is no dissent.

Thomas Hoffman asked for any other business; none is brought.

Thomas Hoffman ends the meeting.

Adjourn

Submitted by Anna Locke, Vice-Chair and Physiology representative