

# **Barley Crop Germplasm Committee Meeting Summary**

**January 9, 2026**

*Notes taken by Thomas Baldwin*

## **1. Attending Members**

- **Brigid Meints**, Organic Grains & Pulses Extension Specialist, Oregon State University, OR
- **Ramamurthy “Mali” Mahalingam**, Research Leader, Cereal Crops Research Unit, USDA-ARS, Madison, WI
- **Belayneh Yimer**, Research Geneticist, USDA-ARS, Aberdeen, ID
- **Ashley McFarland**, President, American Malt Barley Association (AMBA)
- **Taner Sen**, Director (Lead Scientist), Grain Genes Database; Acting Research Leader, Crop Improvement and Genetics Research, USDA-ARS, Berkeley, CA
- **Oswald Crasta**, National Program Leader for Grain Crops, USDA-ARS, Beltsville, MD
- **Nicholas Santantonio**, Small Grains Breeder, Virginia Tech, Blacksburg, VA
- **Max Fraser**, North America Barley Breeding Manager, Anheuser-Busch InBev
- **Ana Badea**, Barley Breeder, Agriculture and Agri-Food Canada, Brandon, MB
- **Thomas Baldwin**, Barley Pathologist, North Dakota State University, Fargo, ND
- **Harold Bockelman**, Curator, National Small Grains Collection (NSGC), USDA-ARS, Aberdeen, ID
- **Gary Kinard**, National Germplasm Resources Laboratory (NGERL), USDA-ARS, Beltsville, MD
- **Chris Richards**, USDA-ARS National Center for Genetic Resources Preservation (NCGRP), Fort Collins, CO

*Discussions lead by Brigid Meints*

## **2. Agenda Items**

### **2.A. NGERL Report**

#### **Report Scope and Timing**

The NGERL report presented covered activities from calendar year 2024 and was finalized in 2025. The 2026 report is not yet available.

### **GRIN System Updates (2024)**

- New features were added to support genetically engineered or modified materials, including checkboxes and filtering options (not expected to be widely applicable to barley).
- Images can now be incorporated into descriptor searches.
- A policy change eliminated SMTA requirements for non-propagative materials, regardless of destination or taxa.

### **Operational Challenges (2025)**

- Approximately 80% of the GRIN team departed due to buyouts.
- A hiring freeze persisted through much of 2025.
- A six-week funding lapse and shutdown occurred from October 1 to mid-November.
- System operations remained functional but were limited to maintenance, with minimal progress on new feature development.

### **Future Outlook**

- No calls for proposals or guidelines have been issued for FY26 plant explorations.
- Program timelines are approximately eight months behind schedule.
- Improvement is anticipated during the 2026 calendar year.

Gary Kinard emphasized that core GRIN functionality remains intact but requested continued committee support as staffing and funding challenges persist.

### **Countries of Concern**

Questions were raised regarding countries to which the National Plant Germplasm System cannot distribute material. Gary Kinard explained that the list is provided by ARS leadership, is not publicly posted, and changes frequently. He advised contacting program leadership for clarification regarding specific countries.

## **2.B. National Plant Germplasm System (NPGS) and National Small Grains Collection (NSGC)**

### **Current Status**

- Harold Bockelman officially retired two years ago but continues working half-time as a contractor through the New Solutions program.

- The NSGC is operating in maintenance mode but remains functional, with timely regenerations and regular seed distribution.
- The collection includes over 150,000 accessions across wheat, barley, oat, rye, triticale, rice, and wild relatives.
- The barley (*Hordeum*) collection includes over 36,000 accessions, including approximately 3,400 genetic stocks (GSHO series).
- Digital images (kernels and spikes) are available for most accessions.
- Some inactive genetically engineered materials donated from transposon studies are available with appropriate APHIS permitting.

### **Staffing**

- NSGC has six total positions, with three currently vacant: curator, technician, and Category 3 scientist.
- No firm timeline exists for filling vacancies, though hiring a research leader may be prioritized.
- Gongshe Hu is serving as Acting Research Leader in Aberdeen, ID.

### **Priority Hiring within NPGS**

The NPGS is constrained by long-term staffing shortages. At NSGC alone, half of all positions remain vacant, some for two to three years.

Oswald Crasta noted efforts to prioritize critical positions across NPGS, working with stakeholders to elevate urgency. We are coordinating with other National Program Leaders to compile a list of approximately 33 critical vacancies nationwide. This list will be shared with stakeholders and used for advocacy efforts in Washington, DC.

Industry representatives emphasized that NPGS functions are irreplaceable. Max Fraser noted that private breeding programs depend heavily on these resources and strongly support prioritizing these federal positions.

Participants agreed that farmer-focused advocacy groups, such as the National Barley Growers Association, would be particularly effective in communicating the importance of NPGS to policymakers, aligning with FY26 priorities around farmer profitability.

## **Impact and Utilization of the Barley Collection**

- The barley collection supports both public and private breeding programs.
- Industry has utilized germplasm for disease resistance breeding, including powdery mildew resistance.
- Genetic resources have clearly contributed to pre-breeding pipelines, though better mechanisms are needed to document downstream impact.

## **Structural Challenges Identified**

- The flow of germplasm between ARS pre-breeding, public breeding programs, and private industry has become increasingly compartmentalized.
- A reduction in ARS breeding programs has weakened historical pipelines from germplasm to variety release.
- Public breeders face competing demands between germplasm development and commercial variety development.
- Private breeders require elite pre-breeding material that maintains yield and quality standards.

## **Proposed Improvements**

- Strengthen coordination between public breeding programs and private industry.
- Develop a barley-focused equivalent of the maize GEM (Germplasm Enhancement of Maize) program.
- Focus pre-breeding on elite materials suitable for direct integration into commercial pipelines.
- Improve clarity among public programs regarding objectives (germplasm development vs. variety development).
- Increase engagement from stakeholder organizations to guide priorities.

## **Crop Vulnerability Statement (CVS)**

- The current CVS dates to 2004 and requires updating.

- Ashley McFarland initiated the update process several years ago; a six-member committee has been working on revisions.
- Progress was slowed by position changes and personal circumstances.

### **Publication Plan**

- The committee will submit a condensed, peer-reviewed version to *Genetic Resources and Crop Evolution (GRACE)*, following the model used by apple and pear committees.
- The original ~60-page document is being streamlined, with emphasis on tables and figures.
- A longer PDF version will be posted on the GRIN Crop Germplasm Committee website after journal submission to avoid copyright conflicts.

### **Timeline**

- A polished draft will hopefully be circulated to the full membership by the end of January.
- Journal submission will follow shortly thereafter.
- Future updates will be handled via addenda rather than full rewrites, with the goal of maintaining relevance for approximately a decade.

### **Coordinated Barley Nurseries**

Discussion focused on improving data return and standardization from cooperative nurseries.

### **Key Issues Identified**

- Seed was distributed, but data return was inconsistent.
- Data formats and timelines varied widely.

### **Resolution**

- A standards document outlining timelines and data requirements has been developed.
- All spring nurseries beginning this year must comply.

- Data will be stored in the Triticeae Toolbox (T3), with usability improvements underway.
- Short coordination meetings will be held with nursery leads.
- Pilot testing will involve six breeders this season.
- The group agreed to prioritize implementation over further deliberation.

Nicholas Santantonio emphasized the need for rapid implementation with iterative improvement. AMBA noted plans to hire a technical director by March 1 to coordinate nursery efforts and stakeholder responsiveness.

### **Barley Pest Initiative (BPI) and Resilient Barley Initiative (RBI)**

#### **BPI**

- Currently in year five with \$3.75 million in funding.
- Concerns were raised that funding is too diffuse, with limited documentation of outcomes and economic ROI.
- There is duplication in screening efforts and vulnerability due to understaffed ARS positions.

#### **Proposed Actions**

- Reallocate funding toward high-performing programs.
- Coordinate screening nurseries as a unified effort.
- Initiate quarterly stakeholder meetings starting in June.
- Conduct economic analyses of disease losses to support impact assessment.

#### **RBI**

- First year of funding with \$1 million.
- Emphasis on avoiding fragmentation by creating focused “hubs of innovation.”
- Proposal to allocate funds for a dedicated coordinator at a land-grant university.
- Potential hubs include pre-harvest sprouting research and winter barley acceleration programs.