# Hard Winter Wheat Coordinated Project FY22-23 Planning Meeting Report
## Monday, May 10th, 2021
## Met Via Zoom

### Attendees

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|---|---|
| Amber Hoffstetter, USWBSI-NFO | Katherine Frels, UNL |
| Sunish Sehgal, SDSU | Michelle Bjerkness, USWBSI-NFO |
| Mary Guttieri, USDA-ARS | Ali Nafchi, SDSU |
| Francois Marais, NDSU | Jessica Rupp, KSU |
| Shaukat Ali, SDSU | Jinfeng Zhang |
| Xiwen Cai, USDA-ARS | Dalhoe Koo |
| Bernd Friebe, KSU | Amir Ibrahim, Texas A&M |
| Guihua Bai, USDA-ARS | Reid Christopherson, SD |

**8:00 AM - 8:15 AM  Opening Remarks and Introductions**
16 people were in attendance.

**8:15 AM - 8:20 AM Approval of Agenda**
No changes were made to the agenda.

**8:20 AM - 8:30 AM  Update HWW-CP on the steering committee meeting.– Sunish Sehgal**

**8:30 AM - 9:00 AM – Updates on FHB and Current Conditions**
- **TX:** Amir Ibrahim Nursery in College Station – good pressure, uniform.  4.7 m acres wheat in 2020 (increase from 4.5 m in 2019).  Were at 7 m acres in 2014-15.  Conditions are good – lost a few trials to the arctic blast. Snow provided protection to some trials. 28% of current acreage excellent or good – consistent with previous years.  90% of TX HRW, 8% SRW, 2% spring wheat.  Performance of TAM205 in commercial production and FHB nurseries is consistent with FHB1.
- **KS:** Jessica Rupp – FHB nurseries:  identifying varieties performing better than resistant checks.  Have been slow to get full data out because DON data was just returned last week.  Have report reading to go out that covers TX, OK; KS, NE; private nurseries. Collecting FHB isolates from farmer fields, and testing them for their degree of pathogenicity.  Doing sequencing to characterize in collaboration with John Fellers (USDA-ARS).  Trying to ensure that nurseries incorporate relevant FHB isolates. Identified FHB mostly in eastern 2/3 of state, mostly in the south.  Mary Guttieri:  new to group - here to learn and engage in role as Lead Scientist in Hard Winter Wheat Genetics Research Unit.
- **NE:** Katherine Frels is new small grains breeder – FHB mostly a challenge in eastern third of state and a growing concern.
- **SD:** Reid Christopherson too early to assess FHB and rust issues. Could use rain in SD. Crop is 7 to 10 days behind.

- **ND:** Conditions started getting favorable for FHB in first half of July- too late to impact the winter wheat.  But impacted the Spring wheat.  Currently conditions are very dry – and only 8% of winter wheat is judged as good or excellent.  Have lost all off-station winter wheat trials.
- **MT:**  no representation available

**9:00 AM – 9:30 AM – HWW-CP PI's Project Summaries/Updates**
- *Amir Ibrahim- TAMU*
  Mist nursery with corn spawn going well.  Very good pressure. Also have an irrigated nursery following corn at Bushland.  Now using DHs to target FHB1.
- *Bernd Friebe + Dal-Hoe Koo- KSU*
  DON values returned – FHB6 reduced incidence and DON 50% in Overland background, but no effect in Lyman.

- *Guihua Bai – USDA Genotyping Lab*
  Presented on MRASeq (GBS replacement method) and have transitioned to Illumina system. Pyramiding *Fhb1* with 5A and 2DL QTL and 5A QTL in Everest and Overland backgrounds.  *Fhb7*:  developed a KASP marker.
- *Jessica Rupp – KSU*
  Expanded FHB nurseries; have backed off the inoculum to 4 g/plot – still a heavy infection.  This year trying 3.5 g/plot.
- *Kaherine Frels – UNL*
  Breeding program has utilized MAS to introgress *Fhb1*, and expand the prevalence in the germplasm.  Presently introgressed into six elite/new genotypes – at $BC_3$. Have a graduate student working on genomic prediction models for FHB – project at an early stage. Xiwen Cai will move to Lincoln soon to add to the ARS effect in Lincoln to contribute the work on FHB resistance focusing on *Fhb7*.
- *Sunish Sehgal – SDSU*
   Several new varieties released in last two years. Initiated *Fhb1* + *Sr2* in coupling, at $BC_1$-$F_2$. Also working with *Fhb6.* Graduate student initiated genomic selection:  data from 2019 to 2020 – prediction accuracy ranging from 0.23 to 0.42 with different models in 2 different years.
- *Francois Marais – NDSU*
  Concentrated on getting *Fhb1* and *Qfhb.5A* into elite material.  Have 17 lines – 6 with *Fhb1* and 3 with both *Fhb1* and *Qfhb.5A* resistance, and one with *Qfhb.5A* resistance only. Observing significant genetic background effects on FHB1 utility. Using MAS heavily to select for FHB resistance QTLs and confirming in greenhouse.
- **MT:** Transitioning breeders.

**9:45 AM - 10:15 AM Participants discussed future needs of HWW-CP**
1.      DH capacity at low cost:  outsource (HPI or TAMU)- 5 crosses per breeder.
2.      Need for coordinated high throughput phenotyping platform at field, greenhouse and seed lab level.

**10:15 AM -10:45 AM Discussed and Updated HWW-CP Research Priorities/Objectives**

No major changes. Restructured associated activities under the second objective to include a distinct bullet for the HT phenotyping efforts.

**10:45 PM - 11:00 PM Participants discussed a rough overall HWW-CP budget**

General intent is to maintain existing funding level requests from each program. New Investigators are encouraged to apply.

RFP will be issued on standard schedule – 1st week in June with deadline for LOI approx. June 24.  CP chairs will notify PIs that submit LOIs by approx. Jul 29.  EPS system will open in August.  All pre-proposals due approx. Sept 20.  Will be encouraging 4-year term project submissions.

**Meeting Adjourn 11:00 am CDT**