**Small Fruit Crop Germplasm Committee Minutes**

Monday 23 March 2020 from 11:00 pm EDST

Teleconference

**1-888-844-9904**

**Access: 8421683#**

1. CGC Administrative
   1. Roll Call

**Present**

Kim Lewers

Massimo Iorizzo

Penelope Perkins-Veazie

Barbara Smith

Jill Bushakra

Melanie Schori

Juan Zalapa

Michael Dossett

Dimitre Mollov

Tim Rinehart

Kyle VandenLangenberg

Nahla Bassil

Jason Zurn

Courtney Weber

Lise L Mahoney

Kim Hummer

Vance Whitaker

Gary Kinard

Margaret Worthington

Hamid Ashrafi

**Not Present**

Jack Okamuro

Roy Scott

Beatrice Amyotte

Patrick Edger

Mark Ehlenfeldt

Patrick Moore

James Olmstead

Phil Stewart

Nicholi Vorsa

Jeffrey D. Carstens

Marty Reisinger

* 1. Minutes from FY19 already approved and posted on-line. Need someone to take FY20 minutes *(Jill Bushakra volunteered to take minutes)*.
  2. Web site: <https://www.ars-grin.gov/npgs/cgclist.html#Small>
     1. Check minutes, evaluation priority lists, vulnerability statements, descriptor lists
     2. Check your membership information

*Some links do not work (meeting dates and locations, meeting briefings)*

* 1. Membership
     1. All the 2016 memberships were up for renewal (every three years). Penelope Perkins-Veazie, Massimo Iorizzo, Patrick Edger, Nicholi Vorsa, Juan Zalapa, and Kyle VandenLangenberg said they are willing to serve another three years and were voted back into the Committee.
     2. Suggested new members?
        1. *Margaret Worthington of U Ark accepted*
        2. *Kim H. suggests Adam Wagner, an industry blueberry breeder. Kim H. to send contact info to Kim L.*
     3. Chair position is coming up next year if anyone wants a challenge.
        1. *Kim L. offers advice to anyone who wants to take on this role.*
     4. Should we create four sub-chairs to help with the Vulnerability Statements.
        1. *Vulnerability Statements need to be updated at least every 5 years. Sub-committees not needed. Kim H. volunteered to contact each participant to update their areas.*
  2. Next Meeting Venue (with NCCC212 or conference call?)
  3. Mark Hoffman and Gina Fernandez at NCSU are hosting in 2020. The meeting will be held sometime during the first week of October.
     1. *Courtney, Michael, Kim L. and Jill voiced that an in-person meeting would be helpful. Kim L. to contact Gina Fernandez about having a space for this meeting at the next NCCC-212. Kim L. e-mailed Gina 3/24/2020.*

1. CGC germplasm evaluation grants
2. Report received from Stringer, Sampson (2014, 2016): “Screening Small Fruit Germplasm for Resistance to Southern Populations of Invasive Spotted Wing Drosophila, SWD (*Diptera: Drosophilidae*)” He says, “The manuscript was accepted for publication in the Journal of Economic Entomology, and I am finishing my final revisions.”
3. Report received from Basil (2017): “Assessing genetic diversity in the cultivated strawberry (Fragaria ×ananassa) collection at the National Clonal Germplasm Repository” The USDA-ARS national collection includes 560 diverse Fragaria ×ananassa accessions of modern and historical U.S. and foreign cultivars and breeding selections. An initial core subset of 447 Fragaria cultivars (304) and world species (143) was identified in the 1980s by the curator and the Small Fruit Crop Germplasm committee members to represent maximum genetic diversity. Very little has been done to characterize these accessions genotypically. Pedigrees are unknown for many. Since the original core designation, an additional 160 cultivated strawberry cultivars were received by NCGR. The objectives of this study is to genotype the entire F. ×ananassa collection, assess genetic structure and diversity, confirm pedigrees within the collection, and identify a core collection based on genetic data. The Knapp group has already genotyped 211 of these accessions with the IStraw35 Axiom strawberry array. We submitted DNA from the remaining 332 accessions for genotyping with a new strawberry array that contains 5,809 markers in common with the IStraw35 Axiom and ~40,000 SNPs well distributed across the new ‘Camarosa’ genome assembly. Data for the shared markers were curated for call quality, missing data, and minor allele frequency resulting in 4,033 markers. K-means clustering analysis revealed eight sub-populations associated with different geographic breeding centers. Two core collections, one representing a uniform distribution of the gene space and the other representing maximum genetic diversity of the gene space, were created. Pedigrees were also confirmed for some triads and sports present in the collection. Current efforts are focused on finishing pedigree validation, uploading the genotypic data for public use to GDR, and preparing a manuscript describing the findings.
4. Report received from Bassil, Zurn, Mahaffee, and Dossett (2018): “Characterizing Resistance to Powdery Mildew in Red Raspberry” An article is in press in Acta Horticulturae for The ISHS Rubus and Ribes Symposium, and it has one paragraph that describes this project- In summary, here is a paragraph describing it: Developing an in vitro assay for assessing powdery mildew resistance in red raspberry: A detached leaf protocol used to phenotype grapes was adapted for raspberries and 30 R. idaeus accessions with genotypic data at the MLO locus were chosen for evaluation. In short, the protocol consisted of disinfesting *R. idaeus* leaves collected from a PM free greenhouse at the NCGR. Leaves were placed in isolation chambers and inoculated by dislodging PM spores from infected plants. The spores were allowed to settle on the leaves. The isolation chambers were maintained in a growth chamber and observed at 10 and 12 days post inoculation. The pathogen was found to grow best on whole plants at a 19 °C temperature. A total of 8 of the 30 accessions were found to be susceptible to powdery mildew using the assay. Inconsistent results were observed with the susceptible check suggesting further protocol/environment optimization is needed.
5. Report received from Hummer (2019) “Phenotyping diverse strawberry cultivars” was sent with a proposal to renew funding.
6. New proposal (FY2020): Two proposals were submitted (Hummer; Horth). The proposal that received the most votes was Hummer’s, which was submitted 03/27/2020 to the National Program Staff.
   1. *Two proposals are up for consideration. Kim L. had not received all ratings as of this meeting and the two proposals were tied. Courtney, Michael, and Lise asked for a couple more days to review. The proposal ratings are due Friday, March 27. Typically, priority is given to proposals that have not previously been funded. The two proposals are on genotyping strawberries, one proposal in the field with 280 genotypes, and one proposal under hydroponic conditions with six genotypes. Kim H. suggests potentially combining the two since the hydroponic proposal uses genotypes included in the larger study.* *Massimo commented that the ability to spend the funds by December might be a consideration for granting the funding. Kim L. said that this would not be a problem for either proposal and that Kim H. is an investigator on both proposals.*
7. Please include in the acknowledgements, “Partial funding for the evaluations were provided by the USDA/ARS National Plant Germplasm System.”
8. Evaluation Research Priority List – Anything to add or give higher priority?
   1. *Kyle asked to add the Fragaria pathogen Pestalotiopsis clavispora* (Vance confirmed that is the correct name and added the taxonomy may be updated and he would keep us informed.) *This cause of crown and root rot has recently become more aggressive in Florida. It may be able to reproduce on Rhododendron and seems to have come from an Appalachian plant nursery. The current chemistries are not effective on this strain/species and the organic acreage in Florida took a big hit. Natalia Perez, pathologist, is working with Vance on researching this pathogen.* Kyle also suggested we star Lygus, two-spotted spider mite, fusarium, and macrophomina. All were added to the Priority List or starred.
9. Small-Fruits Breeding Programs – Any at risk?
   1. *None listed at this time. Steven Knapp at UC Davis is retiring (maybe in 2 years?). This program is unlikely to be cancelled.*
   2. *Corvallis recruited Michael Hartigan to begin as the Rubus breeder to fill the gap until a permanent position can be hired to succeed Chad. The money from the Blueberry Commission to hire a blueberry breeder should be available soon.*
10. Crop Vulnerability Statements and “Quad Charts” keep updated every five years. Publish in Genetic Resources and Crop Evolution or HortScience
    1. *See note under D. iv. 1.*
       * 1. *Fragaria* – Kim Lewers (revised 2018 + quad chart 2018) UNH program added and Kim Lewers asked Gary to post it on the CGC web page.
         2. *Vaccinium* Kim Lewers e-mailed Vaccinium breeders for a list of all breeders.
       1. Blueberry – (revised 2016 + quad chart 2018) Mark Ehlenfeldt
       2. Cranberry – (revised 2017) Juan Zalapa, Nick Vorsa
          1. *Rubus* – (revised 2015 + quad chart 2018) Michael Dossett: progress on dividing into two, but they have been one statement since 2015. Kim Lewers asked Courtney Weber for help drafting breeding program descriptions to update this single Rubus Vulnerability Statement for 2019-2020. The Rubus Vulnerability Statement will remain in place until it is replaced by BOTH a Raspberry VS and Blackberry VS.
11. Raspberry Michael Dossett
    1. *Michael had been working with Chad to divide Rubus into red raspberry and blackberry since the germplasm is completely separate.*
12. Blackberry Margaret Worthington
    1. *Michael can help Margaret with the blackberry statement.*
       * 1. *Ribes* – (revised 2018) Are there any breeders in the US?
       1. *No US breeders, but Dick McGinnis Berry Crops (*[*mcginnis@berrycrops.net*](mailto:mcginnis@berrycrops.net)*) has released a couple of white pine blister rust resistant cultivars. Jill contacted him about these genotypes last week and has not heard back.*
13. National reports–
    1. Office of National Programs (ONP) report - note education effort
       1. *Tim reports that HCRU picked up $3 million in funding increases including the blueberry commission money for a blueberry breeder to succeed Chad and for the vice-Bob Martin position. They are hoping to advertise both positions together. Tim has been working on educating the commodity groups on the importance of supporting the germplasm system and providing money for improved maintenance.*
       2. *Kim L. asked about the Plant Genetic Resource program outlined by Peter Bretting, but Tim did not have any new information on this*.
    2. National Germplasm Repository Lab Beltsville (NGRL) report - any questions?
       1. *Gary reported that there are no major access issues with either the GRIN-Global Public Website or the Curator Tool, although there have been some issues with the VPN/internal access, probably from the increased demand on the network from everyone working remotely.*
       2. *Shipments are going out as possible, though some sites, including Illinois, are closed. Orders are still coming in and in the cases where the germplasm site is closed, the clients are being contacted directly.*
       3. *The Public Website upgrading development is on-going with the hope of a release in April/May.*
    3. National Clonal Germplasm Repository - Corvallis (NCGR) report
       1. *Kim H. reports that NCGR-Corvallis received a base funding increase from $1.5 million to $1.6 million from Congress through the Department of Agriculture.. This is a result of both the cranberry interest groups and the blueberry interest groups lobbying Congress to include a germplasm increase along with breeding increase. This will pay for additional technical assistance.*
       2. *Corvallis also received $13.5 million facilities repair grant  (no-year money) for the wholesale replacement of headhouse, greenhouses and screenhouses. The process was supposed to begin in May, but this will likely be postponed.*
       3. *Hoping to hire a curator to succeed Joseph Postman. In the meantime, Barb Gilmore is Acting Curator..*
       4. *Kim H. has been uploading descriptor data and images to GRIN. She requests info from anyone who sees anything missing and if you have info you want added.*
       5. *Kim H. also expressed sincere appreciation for the ARS Program Leaders, Dr. Tim Rinehart and Dr. Peter Bretting for their support of the National Plant Genetic Resource program and the NCGR-Corvallis in particular.*
14. Adjourn
    1. *Adjourn called for by Michael Dossett, 2nd Penny Perkins-Veazie at 1:20 minutes.*