

Minutes - Juglans CGC Meeting

Tuesday, June 26, 2018

At Juglans Collections, Winters, CA and NCGR Office, Straloch Road, Davis, CA

Attendees:

Leigh Archer, Pat Brown, Greg Browne, Tom Burchell, Chuck Langley, Chuck Leslie, Katherine Jarvis-Shean, Dan Potter, John Preece, Dave Ramos, Steve Seybold, Jenny Smith; By Phone: Keith Woeste

Field meeting at Wolfskill walnut collection - observations and discussion

We met in the A and B Blocks and discussed the condition of the collection

Irrigation: Katherine Jarvis-Shean presented results of work she and her student assistant Leigh Archer have been conducting under California Walnut Board funding, in particular graphs of stem water potential measurements they have taken and discussion of irrigation options and repairing the irrigation system. Katherine discussed several sprinkler head options, including choice to avoid water on the trunks, and it was generally agreed that suspending the irrigation system off the ground will not be practical, particularly in view of anticipated further hedging. Putting the main lines underground, as we discussed last fall, to reduce exposure to animal damage, seemed to be the best option.

Hedging: We observed and discussed the results of the winter hedging done in February by Eric Nielsen and paid for with California Walnut board repropagation funding, and the recently completed brush removal. This hedging was recommended at the last CGC meeting to maintain light penetration in the canopy and to generate graftwood for repropagation. The recommendation was to follow up with summer hedging before July. We agreed to proceed with this as planned in the next few days, hedging at approximately the same height as the winter hedging so that summer brush removal would consist of mostly softer new growth, avoiding interference with the irrigation system during hot weather. Retaining propagation wood is not an issue this time because most trees have plenty of new growth and the plan to obtain new land for repropagation was not approved by the university. Height reduction hedging on those trees that still need this will be deferred until this coming winter's additional dormant pruning. It is anticipated that after that, pruning should continue annually to maintain canopy size and new growth and resulting removal of primarily new growth should go much more quickly.

Indoor meeting at the NCGR Office, Davis, CA

Introductions

Approval of previous minutes

Update of membership contact information

National Program Report – (Peter Bretting)

Report was distributed to members and Peter's PowerPoint was presented by John Preece

NGRL report (Gary Kinard)

Report was distributed to members and summarized by John Preece

Cryopreservation: There was discussion of the cryopreservation work at Ft. Collins. Chuck Leslie asked about the state of walnut cryopreservation which is included in John's CRIS. John noted that this falls under Gale Volk's tissue culture work and other crops were given higher priority. Previous work with cryopreservation of dormant buds by Maria Jenderek and which Burchell Nursery assisted with budding was not successful. Chuck Leslie expressed his opinion that John needed to push walnuts up the priority list.

GRIN: There was discussion of GRIN issues. John stated that the GRIN public side still doesn't work correctly due to security issues and members should ask Jenny Smith on his staff for help with GRIN if needed

Funding enhancement: We discussed an earlier group phone call that several members had with a representative of the Seed Trade Association regarding ideas about how to build industry support for repository funding. As we discussed at the last meeting, we need to build support for the clonal crops and the Davis repository funding in particular. There was discussion of how best to do this without violating lobbying restrictions on USDA employees and commodity board members. John agreed to see if he can arrange a meeting of nut crops research directors – Joe Grant (walnuts), Sebastian Saa (almonds), Bob Klein (pistachios), etc. to discuss options further.

Davis Repository Report – (John Preece)

Report was distributed to members and presented by John Preece

Budget and people

Budget issues continue to be the primary concern

Current staff retained on discretionary funds: Angie (nursery), Patty (Lab). Patty retained in particular for DNA work need to ensure accuracy of accession identification

Sergio (Wolfskill) will be leaving this year due to lack of funding

A previous visiting scientist from Xinjiang, China, will be returning, possibly for six months and a total of four additional visitors from Xinjiang will be spending time at the repository

Eleven walnut orders were sent out this year

Chuck Leslie reminded members that it's easy for local researchers to just collect their own material but that use of the collection for leaf samples, nuts, or propagation wood should all be reported to John so use of the collection fully documented and included in his annual reporting. Use of the collections that probably has not been reported includes collection of nuts and breeding use by recent SCRI projects, leaf samples for DNA extraction by Dave Neale's group, Pat Brown, and Chuck Langley among others, and current work by Sudhi needs to be reported as well.

Jeff Carstens at Iowa sent *J. microcarpa* seed from two exploration collections in the mid-west for primarily landscape crops.

John will send a list of these to Pat Brown, Steve Seybold, and any others interested.

Land for repropagation of the collection

A plan developed by the CGC land committee, in discussions with the Plant Sciences Department, to repropagate the collection on department land at Davis in exchange for land currently in use by NCGR at Wolfskill was rejected by the Dean of Ag. Options for land for repropagation of the collection will need to be revisited.

John stated that the Riverside repository is also having land issues with the university.

John had explored moving the walnut collection to Parlier. At that location 15 acres would require \$35,000 annually for land costs plus propagation costs plus a GS3-5 to farm it. Expected cost would be ~\$100,000 annually and there is no money to do this. In addition there was no committee support to move the collection from the Davis area where it has the most use. John stated the current lease at Wolfskill is good until 2022.

Options will continue to be explored but temporary plan currently is to use the former Peach block south of the Juglans C Block for any critical repropagation of accessions dying or for new accessions that need to be planted on orchard spacing, to plant any other new material on very close spacing south of the canal and keep these hedged very short, and to do what can be done to continue to maintain the current A, B and C Blocks.

John briefly discussed issues with management and personnel conflicts between USDA and university at Wolfskill, conflict over use of bathroom facilities etc.

Chuck Leslie agreed to discuss this with Brad Hansen, chair of the department field committee, to see some of these issues can be resolved.

Kat Jarvis-Shean is planning a work party to repair irrigation lines on July 3rd, a Tuesday because water is only available to NCGR on Tuesdays and needs to be running to identify the leaks, and requested all available help. Her student assistant, who has also been helping with brush removal, will also participate. Kat requested, and Pat approved, use of walnut board funds for purchase of emitters and splitters for irrigation repair.

Evaluations of the collection

Pat discussed his work genotyping the collection by GBS – he collected leaf samples from all *J. regia* in the A, B and C blocks last year and plans to do *J. regia* in the D block and all the other species this year.

Dan Potter's previous work showed some species misidentifications – he can give that information to Jenny

Mohammad Arab, visiting scientist from Iran and currently in David Neale's lab, is collecting walnut leaf samples from international contributors for DNA extraction and genomic analysis, probably in cooperation with Pat Brown

Chuck Langley briefly discussed resequencing work in progress that has been funded in part with Plant Germplasm evaluation funding for CGCs.

Chuck Leslie announced that this year's CGC evaluation proposal by Sudhi Mysore to evaluate cherry leaf roll virus status and identify sources of resistance/tolerance in the collection was funded and discussed briefly the intended scope of this work.

Members were reminded that evaluation results should be entered into GRIN at the appropriate time and John reminded members the NCGR staff can assist with this

Exploration proposals

Steve Seybold expressed interest in funding for further collections of *J. microcarpa* and *J. major* in the southwest – related to interests in thousand cankers and work on landscape genomics of drought resistance. The application deadline is July 20th but he was also advised to discuss further with Karen Williams.

Vulnerability Statement

The Vulnerability Statement was substantially updated last October. Chuck Leslie reminded members to consider offering updates as appropriate and that evaluation and exploration proposals need to align with Vulnerability Statement priorities.

A one-page four-square summary of the Vulnerability Statement, put together largely by Peter Bretting with editing by several committee members, was distributed to members

Committee members were asked to look at the current version and offer revisions, particularly in their areas of expertise

Chuck will revise further as needed with committee input

Membership

Jenny Smith was designated by John Preece after the last meeting as the staff person responsible for the curation of the walnut collection and was added as a new member.

Chuck Leslie resigned as Chair after many years in this position and suggested Pat Brown, the new UC Davis walnut breeder, as a replacement. Following a short discussion he was unanimously approved as the new chair.

Next Meeting

Following a short discussion of alternatives it was decided to hold the next meeting at Davis, tentatively scheduled for the January 29, 2019.

Meeting was then adjourned.

Conclusions:

Davis NCGR continues to have serious budget and land issues that need to be addressed

Management of the walnut collections in particular needs additional financial and land resources

Insufficient land and money is severely inhibiting badly needed repropagation of deteriorating walnut material currently in the collection.

A plan developed by committee members in discussions with the Plant Sciences Department was not approved by UC Davis

Insufficient land continues to prevent acquisition of additional walnut germplasm of interest

Action items:

John will see if he can arrange a meeting of nut crops research directors to discuss options to increase funding for clonal repositories, nut crops in particular

John will work with the land committee and the university to find an alternative option for land for repropagation of the collection.

John will hedge and top the collection again this winter to achieve intended canopy size trees that are still too high and continue hedging annually in consultation with the CGC

Irrigation system will be repaired and maintained – Yolo-Solano farm advisor Kat Jarvis-Shean will take the initial lead in assisting NCGR staff with repair work and UC Walnut Improvement staff will also assist.

Kat and Leigh will continue to monitor irrigation needs by taking stem water potential measurements on several species in the A and B Blocks

Chuck Leslie will discuss USDA-UCD conflicts at Wolfskill with Brad Hansen

Pat Brown, Chuck Leslie, and Malli will work with John on a planting plan (spacing and genotypes) for any new walnut plantings on the old Prunus block site.

All members need to document and report their use of the collection to NCGR staff so the value and use of the walnut collection is fully represented in John's NCGR activity reporting.

John will send a list of *J. microcarpa* seed received from Iowa to Pat Brown, Steve Seybold, and any others interested in use of this material.