



The American Chestnut Foundation
Spring Meetings
Remote via Zoom
March 26, 2020

Science and Technology Committee Meeting
March 26, 2020, 1pm-4pm

Committee Members in Attendance- Steve Barilovits, Gary carver, Brian Clark, Tracey Coulter, Hill Craddock, Deborah Delmer, John Dougherty, John French, John Hempel, Carolyn Keiffer, Tom Klak, Bruce Levine, Greg Miller, Dana Nelson, Allen Nichols, Jeanne Romero-Severson, Jim Searing, Paul Sisco, Brad Stanback, Kim Steiner, Jared Westbrook, Ross Whetten, Ben Jarrett (Staff, minutes)

Review and Approval of Prior Meeting Minutes

The previous meeting minutes were reviewed and approved by the committee.

New Business: Revised S&T Committee Charter

Chair Steve Barilovits communicated that there are proposed changes to the charter of the Science and technology Committee. In summary, the proposed changes would remove references to the Science Advisory Committee from the charter and make general language updates to bring the charter up-to-date with current functions of this committee. These changes need to be put forth to the Board of Directors for a vote.

Public Comment Period Update

Lisa Thomson introduced Board Member Jim Searing to discuss the upcoming USDA public comment period. Searing highlighted that the public comment period will likely begin within the next thirty days and encouraged the committee to submit scientifically significant comments as well as reach out to their scientific peers to comment.

Searing communicated that the most important comments will be scientific in nature and help validate the science SUNY-ESF has completed and put forth in the petition for Darling 58's deregulation.

Lisa introduced Jim Searing, board member as of 2019. Navigated us through anti-GE folks. Jim has been helping with the public comment period.

Dr. Deborah Delmer asked if there is a possibility that the public comment period will be delayed due to COVID-19 pandemic. Searing believes that it has slowed the process down, but is still confident that the public comment period will begin in the next 30 days.

Science Presentation

Dr. Jared Westbrook began his presentation with an overview of the backcross program and how Meadowview has progressed in completing selection in the B3F2 orchards and the methods used since blight has been proven to be a polygenic trait. Westbrook showed information that blight resistance is very environmentally driven and genomic selection combined with progeny testing has proven to be the best way to continue.

Westbrook shared an update on mapping hybrid genomes to find areas associated with blight resistance. All 12 chestnut chromosomes seem to have areas associated with blight resistance. Clapper x Graves crosses do not seem to increase resistance - instead blight resistance seems to be directly correlated with the percent of Chinese chestnut in the hybrid genome.



Westbrook laid out steps for increasing resistance via traditional breeding and how to conserve and utilize trees that do not have enough resistance from tradition breeding by breeding with OxO. He presented some information about cisgenic chestnuts in Virginia.

To conclude, Westbrook emphasized the need for germplasm conservation, finding new sources of American chestnut, and tempering expectations of resistance with traditionally bred material.

Questions from Zoom chat were addressed by Westbrook. In response to a question on how TACF is deciding how resources (staff, materials, money) are being distributed between the traditional breeding and biotechnology approaches, Westbrook explained that TACF is shrinking efforts on traditional breeding and plan to ramp up OxO breeding pending regulatory approval. Utilizing genomic technologies to help TACF make accurate and faster decisions is key.

When asked about the problem of the loss of American growth habit in hybrids, Westbrook referred attendees to Dr. Greg Miller's presentation from the Summer 2019 Chapter Science Meeting. Westbrook also brought up the possibility of finding more sources of Chinese chestnut from China that has forest-type growth habit.

Westbrook fielded more questions on CRISPR and chestnut, chestnut physiology, and systematically screening Chinese chestnuts for form in the US before wrapping up.

Chapter and Field Work

Sara Fitzsimmons presented on how the regions moving forward with the four large science initiatives. To maximize blight resistance in chapter breeding programs, all regions have begun phenotyping orchards throughout the range to match up genotypes to determine what trees to continue breeding traditionally. Work has been done in multiple chapters to identify other sources of resistance and gave an update on the recurrent selection program from Pennsylvania.

Fitzsimmons then gave an update on the range-wide germplasm Conservation efforts through scion collection for cloning and the landscape genomics project. She also updated the committee on chapters that are making OxO crosses under USDA APHIS permits. The Southern Region has continued making progress with Phytophthora resistance screening in partnership with USFS and Clemson University at Resistance Screening Center in Asheville, NC. Lastly, Fitzsimmons shared information about various reintroduction projects and some concerns about the tradeoffs between resistance and "Americanness" in traditionally bred material.

Promotion and Outreach

Board Member Jay Cude is the new chair of the Promotion and Outreach Committee. Cude introduced himself and expressed interest in working with the Committee to go update and revise the strategic plan. In particular, he expressed the need to fill in parts that were not completed when the plan was created. Jay invites members of this committee to join the Promotion and Outreach Committee

Georgia Phytophthora Update

Committee Member Dr. John French gave an update about progress being made in Georgia to grow Phytophthora resistant chestnuts.

The Committee meeting adjourned at 3:13PM