May 2024 Chestnut Program Update
Submitted by Tom Dalluge

This update covers the winter and spring season to date.

We harvested 120 viable nuts from the Ostlund tree and 3 from the Sobkowski tree. This was the first time we had gathered viable nuts from either tree in three years of trying.

We found no direct evidence that our rudimentary efforts at cross pollinating trees succeeded but Ostlund production surprised us especially considering it was cutback by the power company during fertilization.

We owed much of our progress in 2023 to assistance from outside groups who had provided testing and promises of nut exchanges and to a patient mentor who had assisted in answering scores of questions during the year. To these scientifically oriented individuals we donated half of our yield. This spread the DNA pool of our trees and would get us nuts back in return to diversify our stock over time.

Late last year we learned we would not receive a reciprocal shipment of nuts from the American Chestnut Foundation. It became clear a few weeks later when the much hyped Darling-58 GMO chestnut was pulled from the approval processes due to poor lab practices early in the modification process.

We decided immediately to pivot and raise exclusively pure American chestnuts.

**Planting Days**

We stratified 61 nuts over the winter. 60 of the nuts came from Jerry Ostlund's tree and only one came from the Sobkowski tree. We took an iterative approach to planting. The first batch of 30 was planted March 8. A second batch of 15 was planted on March 22 with a final batch planted on April 11. The lone Sobkowski nut was planted on April 18.

The soil medium used for the plantings was a recommended mix of one third peat moss, sand and local soil. Research studies indicate that microorganisms that attach to the roots of healthy mature chestnut trees help prevent the onset of blight. The soil we used came from between two healthy mature chestnut trees and hopefully teems with that microorganism.

Our initial plantings on March 8 were done mainly in garden pots with 11 nuts planted in half gallon milk containers which had been suggested. The subsequent plantings were conducted in ideal containers, tree tubes.

Our results were decidedly mixed. Of the first 30 planted, only one has sprouted. Of the March 22 batch 9 of 15 sprouted. Nearly all of the April 11 batch has sprouted. The Sobkowski nut has not sprouted and due to its importance and its continued viability has been replanted.

The iterative process provided insights to guide us in the future. Our initial batch was watered from the top only. The first batch also received no initial fertilizer or soil enhancement.

Other insights gleaned were that the tree tubes are a more efficient and effective method for planting. They require much less space and will enable greater root growth than a potted seedling.

Watering and moisture became a learning. The milk cartons even with ventilation holes ended up holding too much moisture. Chestnuts do not like wet conditions. None of the 11 milk jug nuts sprouted.

Our first batch had been watered exclusively from the top. With the remaining batches, the tree tubes were watered from the top but also were given an initial period with water in the base of a catch pan. This allowed the deeper soils to absorb some moisture.

Watering was combined with plant nutrients in the latter batches and this appeared to be beneficial to germination. The plants are now watered weekly and receiving plant nutrition supplements.

One notable difference in the April 11 nuts was the decidedly pronounced difference in the size of the tap root generated during stratification. This last tranch required more care in planting to insure the tap root did not break.

A post Mortem conducted on nuts that did not germinate showed several things. Some of the nuts were planted too deep. They should only be 1-1.5 munches deep. Many were missing tap roots. Several showed signs of mold. 4-5 pots appeared to have been disturbed by mice in the garage while acclimatizing. Without question, the biggest factor reducing germination was use of milk cartons with insufficient drainage.

**Into the Summer**

We will have between 20-25 seedlings as the summer begins. We will need to continue diligently caring for the young plants and hardening them to outside weather conditions.

There are many things that we could do to further the chestnut preservation project. In most cases, it is a matter of obtaining the necessary people and talents to accomplish those tasks.

One step is already in place with interested Old Mission neighbor and beekeeper Tony Kramer siting a hive box between the Ostlund and Reiser trees to facilitate better cross pollination. We thank Tony for his generosity and interest in our project.

We can further this natural pollination effort by planting perennials that the bees favor to bridge the space between the Ostlund and Reiser trees.

We have spoken of preserving and protecting our existing chestnut trees. Unfortunately our words regarding preservation and protection have not been matched by sufficient deeds and actions.

Several of our existing chestnut trees need protection that comes from fencing or some other creative barrier to keep visitors from coming in contact with the trees and unknowingly spreading blight. The Maria tree gets stripped of its blooms every June because of its proximity to the Dougherty trail. It is the single most likely tree to pollinate the Sobkowski tree. The Maria tree needs a fence.

The Klein and Ora trees are mature trees that should bear fruit but they don't because over time, pine trees have grown into their canopy and cover 75% of the tree. A chestnut tree needs at least 40% of its canopy available to gather light to produce nuts. These two trees should pollinate one another easily - they stand 25 feet apart. But we have never gotten burrs from them.

Klein and Ora need to have trees nearby dramatically pruned to enable light to reach them. They are also near a trail and should be protected by signage and a barrier.

In June when the chestnut trees bloom, we would like to manually attempt to cross pollinate our two long lived trees. This requires bagging pollen from one tree and applying that bag to a site on the other tree.

Manual pollination is time consuming and low yield but it also insures the best chance at mixing the genetic material of two super trees.

Speaking of super trees, we hope to engage the Milarch Ancient Tree team based in Mesick to determine their interest in cloning the Ostlund and Sobkowski trees. David Milarch has had success cloning a number of other signature American trees and we hope to gain his interest in ours.

We will host the American Chestnut Collaborators in July to learn from them and gain new insights into growing pure chestnuts.

**Into the Fall**
As we head toward the fall, there are further opportunities for involvement and engagement.

September will bring harvest time. We will harvest our pure chestnut trees and also hybrid nuts for use in educational programs. We get as many if not more viable nuts by scavenging the ground around our large trees. The pure chestnut burrs have to be opened and viable nuts selected from those that are not.

In September, we can be preparing our seedling planting sites with soil and nutrient amendments ahead of planting.

In October and November we will plant our first batch of seedlings. At this time our thinking is to put seedlings near Ostlund and Sobkowski in hopes that within 3-8 years these young trees will be producing fruit and crossing with the older neighbor tree thus increasing its yield.

It isn't just a case of putting seedlings in the ground. These tender young trees need protection. A fine mesh tube driven to a depth of 18-24 inches will surround each seedling. This tube will protect the remnant of the nut kernel from rodents. A larger, heavier barrier will be constructed outside this rodent barrier to prevent deer and other large animals from grazing on the young shoots.

As winter approaches, we will assess our harvest of viable chestnuts and divide them up for winter stratification. We had 121 nuts last year and donated half to research partners. With our various efforts to improve cross pollination, a reasonable goal for this year is 200 nuts.

To get involved email Tom Dalluge at twdalluge@gmail.com. We will add you to our list of chestnut devotees and keep you informed of upcoming activities.