



**CHESTNUT CHAT – Q & A**  
**CHAT # 19: CHESTNUT SUMMIT**  
**DATE: FRIDAY, DECEMBER 09, 2020**

QUESTION	ASKER NAME	ANSWER(S)
<p>since we'll need more than USDA's approval, what is the status of the applications to FDA, and EPA, and how do you anticipate USDA approval would influence/effect approval by those other agencies?</p>	<p>Jim English</p>	<p>We are in the process of preparing documentation for both the FDA and the EPA - we hope to submit both sometime early next year. The EPA's process is pretty complicated and will involve multiple steps, but we are optimistic that it will be feasible even though it hasn't really been applied for a restoration plant before. The FDA's process should be relatively straightforward, since it's focused on nut nutritional composition, and the lack of allergenicity compared to wild-type chestnuts. Most of that information is in the USDA petition, so it is pretty familiar. All three regulatory agencies work closely together, so they're well aware of each other's submissions, but their decisions are made independently.</p>
<p>My neighbor has a chestnut tree, which looks very healthy and has produced some burrs with smallish seeds. I picked up some and want to try growing some seedlings. How long do I need to stratify this in a cold place?</p>	<p>Barbara Evans</p>	<p>Here are several links to harvest and storage resources:</p> <ul style="list-style-type: none"> <li>• Harvesting, Handling and Storing Chestnuts fact sheet on TACF website: <a href="https://www.acf.org/wp-content/uploads/2020/02/FactSheet_HARVEST_February2020_rev.pdf">https://www.acf.org/wp-content/uploads/2020/02/FactSheet_HARVEST_February2020_rev.pdf</a></li> <li>• Harvesting and Storing Chestnuts, Chestnut, Fall 2018; pgs 29-30 <a href="https://www.acf.org/wp-content/uploads/2020/04/WEB-Chestnut_Fall2018.pdf">https://www.acf.org/wp-content/uploads/2020/04/WEB-Chestnut_Fall2018.pdf</a></li> <li>• How Not To Kill a Chestnut, The Journal of The American Chestnut Foundation, March/April 2013; pgs 22-23 <a href="https://www.acf.org/wp-content/uploads/2016/09/Volume-XXVII-No.-2-Mar-April-2013.pdf">https://www.acf.org/wp-content/uploads/2016/09/Volume-XXVII-No.-2-Mar-April-2013.pdf</a></li> <li>• Seed Stratification..., Chestnut, Spring 2019; pgs. 25-28 <a href="https://www.acf.org/wp-content/uploads/2020/08/FINAL_Chestnut_Spring2019.pdf">https://www.acf.org/wp-content/uploads/2020/08/FINAL_Chestnut_Spring2019.pdf</a></li> <li>• Troubles with Weevils? The Journal of The American Chestnut Foundation, September 2010; pg. 17 <a href="https://www.acf.org/wp-content/uploads/2016/09/Volume-XXIV-No.-3-September-2010.pdf">https://www.acf.org/wp-content/uploads/2016/09/Volume-XXIV-No.-3-September-2010.pdf</a></li> </ul>
<p>The difference in CP virulence in Oak and Chestnut is probably largely on the fungus side. CP produces effectors that are highly effective in overcoming chestnut defenses but less so for oak.</p>	<p>Bruce Jonathan Levine</p>	<p>live answered</p>
<p>There is some evidence of Sudden Oak Death (SOD) affecting the American chestnut with stem cankers. The study I am referencing did not list sample size for AC, but it's likely around 5 or less given the other values. A very</p>	<p>Jacob Pease</p>	<p>*By causing* not necessarily with. On the radar and concerning! There's no active research on SOD specifically, but we do have good connections within the <i>Phytophthora</i> research community if/when SOD becomes established in the east.</p> <p>Right now we're focusing on a cousin, <i>Phytophthora cinnamomi</i>. In the very alarming scenario in which</p>



**CHESTNUT CHAT – Q & A**  
**CHAT # 19: CHESTNUT SUMMIT**  
**DATE: FRIDAY, DECEMBER 09, 2020**

QUESTION	ASKER NAME	ANSWER(S)
limited sample size, but is SOD on TACF's radar and if so, in what regard? doi:10.1094/PD-89-0063.		we'd have to deal with Pramorum, we do have established locations and some protocols which would likely transfer over from our trials and work with P. cinnamomi.
Andy, could i call you for a follow-up on my question regarding the existing roots? Robbie Shaw	Robbie Shaw	Sure, feel free to email at aenewhou@esf.edu

**PRE-SUBMITTED QUESTIONS THAT WE DID NOT GET TO ANSWER DURING THE SUMMIT WEBINAR**

*(ANSWERS WERE EMAILED TO THE SUBMITTER AFTER THE CHAT ; THESE ANSWERS WILL ALSO NOT APPEAR ON THE VIDEO)*

QUESTION	ASKER NAME	ANSWER(S)
I have planted 50 chestnut trees have lost 10 these trees will all get the blight something I am sure I will never get the blight free trees so am I just wasting my money and time trying to grow the American chestnut trees?	Ottis Wright	<p><b>TS:</b> Well, my first thought is getting 40 trees to survive out of 50 is actually very good, considering how fickle chestnuts can be to grow. However, in this case, I take it that regardless of the numbers you started with, you ended up with 50 survivors that are big healthy trees, growing well, no environmental issues beyond the blight infections? (if that's not true, then it may be a planting issue or a soil issue, etc.)</p> <p>Okay, assuming you have 50 big healthy trees that are now succumbing to chestnut blight and dying, the next question is, are they pure Americans, hybrids obtained through TACF, something else that came from somewhere else? If they are "pure" or wild-type American chestnut, then they will eventually succumb to the blight, but as an experience growing chestnuts, you have done an excellent job getting 50 to grow (think about gradually adding hybrids - you indicate that's not possible...because of the cost of the donation?). Anyway, keep the rest of your trees - and as they dieback they should also resprout, so you will likely always have some nice Americans on your land. Most people don't get to have that so, not bad. As they produce seeds you can replant some or at least harvest and roast - sharing fire roasted American chestnuts with friends would be cool. And of course, there will be opportunities to do breeding work with us. Stay connected and involved with your chapter. The day may come when we want to cross <i>your</i> trees with Transgenic pollen (if they are wild-type Americans).</p> <p>If, on the other hand, your trees are hybrids, we definitely made it clear when we sent them to you that blight resistance is variable among hybrids and we don't guarantee they will <i>all</i> be resistant. However, out of 50 trees, expect a range of resistance from good to poor - so the poor ones are getting blight, some more</p>



**CHESTNUT CHAT – Q & A**  
**CHAT # 19: CHESTNUT SUMMIT**  
**DATE: FRIDAY, DECEMBER 09, 2020**

QUESTION	ASKER NAME	ANSWER(S)
		<p>will probably get blight, other will probably be resistant, some will do really well. You'll likely end up with a small grove of trees with varying levels of performance and plenty will do pretty well.</p> <p>Next question is how did you get the trees? If you made a donation to TACF then you are probably eligible to get <i>some</i> replacements, and the resistance is always getting better, so the new crops look really good. Contact the person that helped you get the 50 trees and talk about possibilities; you can end up with a reasonably successful orchard. ---Indeed, your orchard already is reasonably successful.</p>
<p>How do you prevent chipmunk damage to in ground sprouts??</p>	<p>Morgan Mayfield</p>	<p><b>KC:</b> As for how to protect sprouts from chipmunk damage, we generally recommend a short (18") shelter around young trees, sunk a couple inches into the ground if possible, to prevent tunneling. This usually keeps most of the small critters at bay. Chipmunk populations did seem to explode this summer and I know some of our orchard managers have had trouble with them climbing the stakes that support tree shelters and still getting in. Usually they have a hard time then getting back out. If a shelter isn't enough, you could trap them or put out rodent bait - some of our growers use these methods for vole control.</p>
<ul style="list-style-type: none"> <li>• I am looking for information on chestnut trees as a pollen and nectar source for honey bees. My plans are to plant the four American Chestnuts in the middle surrounded by the Dunstan Orchard.</li> <li>• I have joined as a sponsor member and am to receive 4 seeds next year. Will they come to me ready to be planted or do I have to stratify them?</li> </ul>	<p>Henry Lowrimore</p>	<p><b>SF:</b> Regarding the 4 seeds you will receive; they will be ready to plant upon receipt. Just keep them refrigerated until you can get them in pots or in the ground.</p> <p>Regarding information on chestnut trees as sources of nectar or pollen, I'm not sure what kind of information you need there. I do know that bee keepers in Europe do keep bees near chestnut orchards and market and sell chestnut honey. The product is an acquired taste! If you've ever smelled chestnut pollen, there is most definitely a hint of that in the flavor.</p>
<ul style="list-style-type: none"> <li>• If a chestnut tree has multiple sprouts is it good or bad to cut out all but one or two? Why or why not?</li> <li>• This summer I had three well established American chestnut trees die back. All three were about 6 ft and five+ years old. They fully leafed out in spring and looked very healthy. In July or early August all</li> </ul>	<p>Frank Skalak</p>	<p><b>TS:</b> It's okay if it matters to you how they look, though it is not necessary for the tree. We usually don't prune them as long as the sprouts are not interfering with maintenance. If the extra sprouts create a "jungle" we prune them so as to make it easier to mow, but otherwise we leave them. Hypothetically, pruning can lead to blight infections, though the risk is probably low.</p>



**CHESTNUT CHAT – Q & A**  
**CHAT # 19: CHESTNUT SUMMIT**  
**DATE: FRIDAY, DECEMBER 09, 2020**

QUESTION	ASKER NAME	ANSWER(S)
<p>the leaves turned brown and tree died back. I see nothing that looks like chestnut blight nor have I have never seen trees die back so quickly from blight. Other American chestnuts within 20 ft or less were unaffected. We had relatively wet spring and dry summer. I was told by a forester that a fungal disease was likely cause. Does this diagnosis make sense?</p> <ul style="list-style-type: none"> <li>On maybe a related issue I have also seen some native chestnut sprouts die with no sign of blight. Is this the same issue?</li> </ul>		<ul style="list-style-type: none"> <li>Hard to say without seeing the trees and maybe sending samples to the lab, but here are the most common explanations: <ul style="list-style-type: none"> <li>anthracnose caused by a wet year. It's been a problem for a lot of trees this year, including chestnuts. It's caused by a variety of fungi. Not really a problem, the trees should be fine next year.</li> <li>the soil pathogen Phytophthora. It's an invasive soil pathogen that kills chestnuts. It requires a soil test, but first wait to see if the trees leaf out or resprout from the base. if they do, it's not Phytophthora. If they completely die, it could be.</li> <li>Ambrosia beetles have made their way north and likely infest trees in OH. I'm attaching a fact sheet for your consideration. Look for the signs of ambrosia beetles next spring. If they show up, you'll have to take action. Follow the guidelines attached (How to deal with Ambrosia Beetles).</li> </ul> </li> <li>Possibly. You are certain it's not blight obviously? Then it very well can be one of those issues described above. Of course, hard to know. Monitor and hopefully you'll figure out if it's one of these issues.</li> </ul>
<p>I have a grow tent and lamps – how can I get my trees to reproduce in one year?</p>	<p>Adam Savell</p>	<p><b>JW:</b> How we get them to flower in one year under high light is to</p> <ul style="list-style-type: none"> <li>Start growing seedlings in pots in Dec-February after a minimum of two months of storing seeds in the refrigerator (do not freeze) for cold stratification.</li> <li>We start the seeds in 1 or 2 gallon pots so they have room to grow healthy and robust and roots and crowns to support flower development. We plant in a mixture of peat/perlite and vermiculite (eg. Jolly Gardener C/25). We add miracle gro plus (long term release), and micronutrients (and chestnut-synergistic mycorrhizae as available).</li> <li>After plants have grown for a minimum of 3 weeks under ambient light, we start light treatments. Chestnuts flower during the longest days of the year. Therefore, to stimulate them to flower, we grow them under a 16-hour light 8-hour dark cycle. The LEDs to buy are 2000w and have a switch for blue (leaves) or red (flowers) – once you have lots of leaves, switch off blue and move the red LED closer because it is only 1000W</li> </ul>



**CHESTNUT CHAT – Q & A**  
**CHAT # 19: CHESTNUT SUMMIT**  
**DATE: FRIDAY, DECEMBER 09, 2020**

QUESTION	ASKER NAME	ANSWER(S)
		<ul style="list-style-type: none"> <li>• Pest control is one of the biggest challenges for rapid induction of flowering. We gently wash off mealy bug infestations with soapy water as needed.</li> <li>• If you get some trees to flower, this website has useful instructions on collecting and drying pollen, checking its viability, and applying pollen to female flowers:  <a href="https://ecosystems.psu.edu/research/chestnut/breeding/pollination">https://ecosystems.psu.edu/research/chestnut/breeding/pollination</a></li> </ul>
<p>If I collect chestnuts from a local tree, how long do they need cold stratification before planting?</p>	<p>Barbara Evans</p>	<p><b>KC:</b> Regarding stratifying nuts, I hope you found the resources I included in the Q&amp;A online (also pasted below). But the short answer is that chestnuts don't technically need to stratify, but cold storage in damp peat moss will keep them in the best shape until you are ready to plant them. Chestnut nuts are low in fats and dry out very quickly so if left out for a while they will dry up and won't sprout. The standard for storage is damp peat moss (about a 10:1 peat-to-water ratio) in a colder corner of the fridge. This should keep them from drying out or getting moldy (another common storage issue). They are likely to sprout in cold storage and you can plant them in pots indoors whenever you are ready, or outside once the soil warms up a bit.</p>
<p>I planted 12 hybrid chestnuts this spring and have had 6 successfully grow. These were planted directly in the earth and had a three-foot-deep leaf augured hole filled with aged leaf mulch and earth. Surrounded by ground cloth and 4-foot fence. Good success or not?</p>	<p>Donald Privett</p>	<p><b>SF:</b> 50% germination and growth is OK. We tend to like to see closer to 80% or higher. There's lots of things that can go wrong in planting and growing chestnuts, though. Without a lot more information about the site and the planting methods, as well as an "autopsy" of the planting site, I don't know that I can offer much more to help identify the cause of mortality.</p> <ul style="list-style-type: none"> <li>• What kind of hybrids did you plant and where did you get them from?</li> <li>• Did you plant nuts or seedlings? <ul style="list-style-type: none"> <li>- If you planted nuts, a 3 foot augured hole is waaaaaay too big. This may have contributed to lack of germination as they could have been too deep.</li> <li>- If seedlings, how big were the seedlings? Were they bareroot or containerized?</li> </ul> </li> <li>• Do you have additional information on the tree's/nuts pedigree/parentage?</li> <li>• Did the other 6 all germinate, then die? Or did they just fail to germinate?</li> <li>• What date did you plant?</li> <li>• How much water/rain did they get?</li> </ul>



**CHESTNUT CHAT – Q & A**  
**CHAT # 19: CHESTNUT SUMMIT**  
**DATE: FRIDAY, DECEMBER 09, 2020**

QUESTION	ASKER NAME	ANSWER(S)
		That should get us started to identifying any possible issues you might face in subsequent plantings.
<p>What is the best/easiest way for a hobbyist to propagate chestnut cuttings?</p>	Erick Schnell	<p><b>SF:</b> Unfortunately, it is all but impossible to propagate chestnut cuttings. Those genotypes which have been successful rooted via cuttings are very specific and required a ton of work to find those rare genotypes which can be propagated by cuttings. And those then require a ton of input and work to get them to root.</p> <p>Here are links to a few recent papers on the subject which may help you get a sense of the challenges facing this work:::</p> <ul style="list-style-type: none"> <li>- <a href="https://www.mdpi.com/1999-4907/11/8/826/pdf">https://www.mdpi.com/1999-4907/11/8/826/pdf</a></li> <li>- <a href="https://www.mdpi.com/2223-7747/9/11/1543/htm">https://www.mdpi.com/2223-7747/9/11/1543/htm</a></li> <li>- <a href="https://cdnsiencepub.com/doi/abs/10.1139/cjfr-2019-0002">https://cdnsiencepub.com/doi/abs/10.1139/cjfr-2019-0002</a></li> </ul> <p>Finding an easy way to root American chestnut cuttings is what I call the Holy Grail for our program. It would make this research so much more robust and really help speed along research and restoration. I've worked with many hobbyists who have tried and failed over and over trying to make this work. I don't necessarily want to stop your curiosity for this work. But recognize that the path is likely very steep and paved in failure. You may not reach a successful destination.</p>
<p>We have a number of nut producing trees at this point and only one that is suffering from blight. Should we remove it? Either to prevent spread or to prevent a non-resistant tree with cross pollinating with the others? If removal is the recommendation are there any particular steps we should take (season, disposal, etc.).</p>	Hayes Nuss	<p><b>KC:</b> Regarding removing a blighted tree from your collection, it's kind of up to you. I'm not sure what other types of chestnut trees you have planted and how susceptible they might be. But blight can certainly spread from one tree to another. We find it often at high rates on trees in our orchard plantings. If the blight canker is accessible, you could try mud-packing to keep the tree going (see attached), or you could certainly cut the tree down and allow it to re-sprout. Working with blighted trees while they are dormant can help reduce the chance of blight spread. Burning or removing any blight-infected material is the best way to keep it from spreading, however within the native range blight is going to be generally "around".</p> <p>As for whether it's an issue to allow it to pollinate with your other trees, that's another question where it depends on what you have planted and what your goals are for nut production. If you are mostly interested in eating chestnuts, or providing food for wildlife, it really doesn't matter. If you are looking to plant resistant nuts, then you may consider removal. That said, chestnuts get blight and if they get it isn't so much an indication of resistance or susceptibility, as is how they respond to the infection.</p>



**CHESTNUT CHAT – Q & A**  
**CHAT # 19: CHESTNUT SUMMIT**  
**DATE: FRIDAY, DECEMBER 09, 2020**

QUESTION	ASKER NAME	ANSWER(S)
<ul style="list-style-type: none"> <li>• I have started a chestnut farm with around 400 Dustan chestnut (American) and little over 600 Chinese chestnuts trees on a 13 acres I was wondering if I need to do anything else with trees?</li> <li>• I would like to know what I've got to be a member.</li> </ul>	Dennis Taylor	<p><b>TS:</b> So, Chinese chestnuts perform very well in a variety of sites (not nearly as fickle as American chestnuts!) and Dunstan chestnuts are essentially Chinese chestnuts, so the same applies to them.</p> <ul style="list-style-type: none"> <li>- The main thing is to assure the soil is good (not hard packed - if hard packed it should be, or should have been, sub soiled. But you can always plant daikon radish around each tree in late summer (never early summer) to help break up the soil). You can also fertilize to push growth, just send a soil sample to your state extension agency. They will test your soil and give recommendations for fertilizer needs, if any.</li> <li>- Other than that, you should be good to go. For any other details, refer to the planting guide attached. there are lots of useful tips. Of course, this is written for American chestnut, your trees will be much easier to work with.</li> <li>- So, what is your plan with this planting? Are you hoping to grow chestnuts commercially? If so, perhaps you should reconsider planting a cultivar that has been bred for such purposes? Average Chinese, including Dunstan's, do not make great cultivars - they are not as delicious and they are difficult to peel compared to cultivars. for great guidance on growing nuts commercially you should contact the folks at the Northern Nut Growers Association for advice: <a href="https://nutgrowing.org/">https://nutgrowing.org/</a></li> </ul> <ul style="list-style-type: none"> <li>• To become a member of The American Chestnut Foundation, please visit our membership page: <a href="https://support.acf.org/membership">https://support.acf.org/membership</a></li> </ul>
What is the preferred layout and spacing of a nursery?	Steve Shepherd	<p><b>KC:</b> Chestnut planting spacing depends on what all you are planting and why. The minimum for any planting is usually 8'x8'. If you have equipment to get down the rows another common spacing is 7'x15'. For long-term orchard spacing with Chinese chestnut (or nut-production cultivars) 20'x20' or even 40'x40' can be used. Some of our plantings use a plot-based design with tighter spacing w/in plot and wider between plots.</p> <p>In general, you want to consider the longevity of the trees and planting (ie - are they blight-resistant varieties or are they likely to get blight and die back, persisting as smaller trees), and then the type of equipment you want to be able to get into the orchard for maintenance or other access. And if you are fencing, similar consideration for a buffer between the trees and fence.</p>