



CHESTNUT CHAT – Q & A
CHAT # 18: CLONING AND EMBRYOGENICS
DATE: FRIDAY, NOVEMBER 13, 2020

QUESTION	ASKER NAME	ANSWER(S)
I am American Indian non-enrolled. I was wondering whether you were working with any Federally or State recognized Tribes in order to restore the American Chestnut in their home reservations.	Scott	live answered - I am with Conestoga Language and Culture Authority. I would be interested in partnering with TACF in some way if possible. We are located in what is now Pennsylvania.
Sara, Any update on USDA	paul	live answered
To speaker - are there any labs that you know of working on tissue cloning of chinquapin?	Meg Allen	We have started cultures of Ozark chinquapin and regenerated plants, but have not tried Allegheny chinquapin.
hello from England I'm over here working, but from Ky	boyd	Welcome Boyd, thanks for joining us!
Are American Chestnuts being grown in arboretums (arboreti?) internationally? Are there soil environments that contain microbiomes that are more conducive to blight resistance?	Meg Allen	Hi Meg -- We have not partnered with Arboreta internationally, though I know some do have examples of <i>Castanea dentata</i> . Yes, there are definitely soil environments which are more conducive to blight resistance. There's a recent paper from Van Drunen 2018 from Canada which covers some of the abiotic (not microbiome) variables. We have not isolated any biotic components exclusively, but certainly mycorrhizae play a role. And some <i>Bacillus</i> and <i>Trichoderma</i> have been implicated in controlling <i>Cryphonectria</i> .
by rooted cuttings do you mean grafting?	Meg Allen	No. It would be like taking that scion, which would be used for grafting, then having that make roots on it's own. I call that "the holy grail" for chestnut propagation.



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		chestnuts can graft, but we have very little to no success with rooted cuttings.
How susceptible is chestnut propagation to somaclonal variation?	Anita Klein	live answered
Wow the forestry industry must LOVE that species	Meg Allen	sorry that's not a question
If you treat chestnut with chemicals that disrupt DNA methylation, can you get older chestnuts to make roots?	Anita Klein	live answered
Do any of the agrobacterium tools incorporate fluorescent proteins as markers?	Meg Allen	live answered
What is the OXO gene?	Scott	live answered
Have comparative transcriptomes or microRNA evaluations of the chestnut hybrids been done?	Meg Allen	live answered
So, basically with the "cloning", it means that one seed produces multiple seeds?	Scott	live answered
plant epigenetic issues?	Jim C	live answered
My impression of the blight progress is that it doesn't destroy the tree until it has reached a rather advanced sapling stage. How do you determine that the superior cloned trees are actually resistant? (forgive my weak chestnut biology background...)	Meg Allen	<p>Hi Meg - blight can infect a chestnut at any stage, including the seed. We typically test resistance by infecting a tree - either in seedling or tree form - by inserting the blight fungus into the tree.</p> <p>Waiting for natural infection, you generally need to wait until about age 20 for a tree to be infected, but that's just a function of luck. While trees can be infected at any age, they generally become infected about age 5 - 10. Some last</p>



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		longer than others, but that's not necessarily a function of resistance.
Is WUSCHEL gene complex like stem cells found in animals?	Scott	live answered
what is the intent of the cryo therapy on breeding samples?	Robbie Shaw	live answered - sure that makes sense but what about the hybrids?
do you have papers on your cryopreservation? Want to learn more...	Jim C	live answered
Did you try to juvenile mature plants by any methods?	Burak Akyüz	live answered
why not just focus on resistance to the pathogen?	Carl & Wendy Good	Hi Carl & Wendy - Can you elaborate on your question a bit? focusing on that versus what?
Ted William's youngest son had his body frozen, for 'regeneration'.	Anita Klein	live answered
there are surface chemicals that the pathogen uses to identify and infect the cells. There is a metabolic system that creates these surface chemicals. It can be interrupted through genetic manipulation or chemicals that inhibit the binding.	Carl & Wendy Good	live answered
why don't you look into this chemistry.?	Carl & Wendy Good	live answered
My doctoral research used such mechanisms in microbes	Carl & Wendy Good	live answered