

The CGA Annual Meeting is June 9-11, 2017

Now is the time to make plans to attend the 2017 CGA annual meeting at Greg Miller's orchard in Carrollton, Ohio!

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Catch up with fellow growers at social events, share tips and resources, and enjoy great food.

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Hear presentations from industry experts, tour the Route 9 Cooperative chestnut packing facility, orchards, nurseries, seedling trials, and more.

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Vote on CGA business and share your ideas to grow our organization.

Find complete program information and your registration form on page 11.

Winning the Battles with Phytophthora in Your Chestnut Orchard

By Bernie Hilgart, Washington Chestnut Company | chestnuts.wa@gmail.com

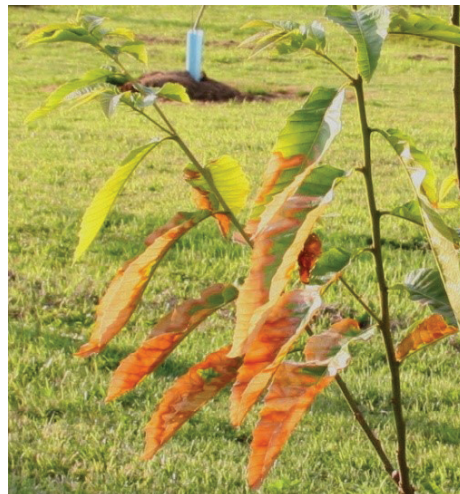
When someone we care about gets gravely sick, we are taken with sadness and an inner wish we could do something to help them out in their time of need. When there is a sudden onset of sickness that is beyond what we are able to handle ourselves, we turn to 911 services for help. Chestnut trees can suddenly become ill too. The problem is there is no chestnut tree 911 service.

One of the most devastating sicknesses for a chestnut tree is phytophthora. In a single growing season, a healthy chestnut tree can contract phytophthora, slide into poor health and die. Usually, phytophthora is a death sentence for a chestnut tree, but not always. As with humans, we look at the signs and

symptoms being presented in the affected chestnut tree. We look at the bark, leaves, growth, and visually the overall presentation of health. If you have just one chestnut tree, this visual evaluation is very difficult because you have nothing else to compare it against. If you have a chestnut orchard, then you would have many other chestnut trees to compare with.

Before we get into the details of diagnosing and treating phytophthora, we should make a differentiation between the two different phytophthora sicknesses in chestnuts. *Phytophthora cinnamomi* is also referred to as "ink disease" or "root rot". The pathogen *phytophthora cinnamomi* (or PC) is found just about everywhere in the USA. PC prefers heavier and wetter soils. The key word is "prefers", as PC can be found in dryer sandy or even rocky soils, waiting for the right conditions, such as an extended wet period in the growing season, often occurring in early spring.

The second form of phytophthora is *phytophthora ramorum* (or PR), also referred to as "sudden oak death". Chestnut trees are part of the oak family, so chestnut trees are highly susceptible to PR. The US Department of Agriculture has a quarantine on chestnut trees to prevent the spread of the PR pathogen. In the West, PR is found in Northern California and Southern Oregon. Like PC, PR likes the cooler wetter conditions found in the coastal areas. Both PC and PR are soil-based pathogens. Walking through an



Chestnut tree infected with *Phytophthora cinnamomi*

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PRESIDENT'S MESSAGE



David and his daughters, Jennifer and Elizabeth, in Washington, DC

Hello and happy spring to everyone!

I'm really looking forward to the annual meeting this year! This particular summer CGA convention could be a game changer for the industry. As Greg Miller posited in Missouri at the last conference, everything we now grow is obsolete. Unless we start to focus on improving what we grow, the industry will not grow. If we can grow the best chestnut, we can grow the best business. See page 11 for additional details about the meeting.

In other news, we are seeing significant improvements on the technology side of growing food, with increasing emphasis on mechanical harvesting due to uncertainty in the farm labor market. Chestnuts are so unique: you can't really pick them like apples or oranges and you can't shake the trees like for pecans or just about every other nut. We have by-hand pickers, mechanical sweeper-vacuums, long tractor-driven hosed-based vacuums and hand-held pickers with small screens to pick up the nuts. Is that as good as it will ever get?

My immediate vote is for the mechanical side: sweepers with fixed vacuums that can also switch to portable hoses for difficult terrain or difficult harvest floor conditions like too many leaves or twigs, or high grass, etc. This is the biggest cost issue for just about every grower. I have seen some walk away from the business because it gets too expensive to pick up nuts. (I wish we all had a thriving U-pick business like a few lucky people I know!) However, I do have a feeling things will change for the chestnut industry. After seeing automated robotic strawberry pickers pick the freshest berries off one strawberry plant every four seconds? Fifteen plants picked per minute? All day long without a break? Why not for chestnuts? If we can figure out how to grow better trees we can design better harvesters!

In other industries, we are seeing drones used for things like fertilizer sampling, soil moisture, or tree growth. We are also seeing the power of data over time to improve irrigation and fertilization programs, (like we saw in Stockton, California at Harvey's place two years ago). Combine the two and we see why people are researching this business, not for fun, but for profit!

In my previous message, I cited some sales basics with a promise to explore a bit further, as many new growers ask the question: how will I sell these chestnuts? (This is also a pitch for The Chestnut Forum, an excellent online information resource hosted by Carolyn Young, where everything that has ever been written about the chestnut, including sales techniques, can be found.)

First and foremost, good bookkeeping is essential to best understand revenue sources and overall expenses. This should not just be a tax time issue!

Then there are four basic ways to sell your product:

#1: Talk up what you are growing with your neighbors and friends, which you will always promote as the best in your area. You would be surprised how that can get people interested in coming by to look, which leads to basic U-pick sales. (U-pick can be the most profitable of all, especially if no harvesting is required.) You might find fall festivals in your area where you can roast up nuts and give away samples.

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Deadlines

<i>Issue</i>	<i>Deadline</i>	<i>Mailed</i>
Winter	Dec. 10	Jan. 1
Spring	Mar. 10	April 1
Summer	June 10	July 1
Fall	Sept. 10	Oct. 1

Editorial Opinion

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The Chestnut Growers of America thank Ray and Carolyn Young for many years of service

By Sandy and Ben Bole



For nearly twenty years, Ray and Carolyn Young have been dedicated chestnut growers and marketers. They have been innovative in developing processing methods for both fresh and dried chestnuts and dried chestnut products. They have travelled the world investigating chestnut production in Italy, Turkey, Croatia, Australia, and New Zealand. They even brought home a stone flour mill in their luggage when they decided to produce chestnut flour. Each trip supplied the material for at least one article in *The Chestnut Grower*, which Carolyn edited each quarter for 18 years. She also developed and maintained the CGA website, which includes items of interest for growers and buyers alike. Ray served as Secretary-Treasurer of CGA, and drawing on past experience, he ran a “tight ship” collecting dues, paying bills, and meeting the many other obligations of the association. Their dedication to CGA will be missed. 🍅

Ray and Carolyn Young with the copper chestnut tree plaque given to them by the Chestnut Growers of America as a token of appreciation for their years of commitment to our organization.

President's Message, continued...

Your local newspaper loves to do stories about local growers of fine foods, complete with photos! (Don't wear a tie.)

#2: Find a local co-op or start one with other growers. The power of many can lead to bulk sales to retailers in your area, and if there is enough quantity, bulk sales to major retailers, like Winn Dixie or Whole Foods. With a co-op you are putting more eggs in the basket to get someone to pay attention. Even restaurants and cruise ships have buyers!

#3: Get a website, which you can design yourself or pay someone. When you have enough product, your website (or your co-op website) will legitimize your operation in the eyes of the big-

ger buyers. If you want to sell direct to consumers, your website is your main driver of these type sales. But this is very work intensive! Two pounds per sale? 20 pounds per sale? Will you be able to ship 50 boxes or more every day? You will need a lot of boxes, labels, good record keeping, and especially good help (family help can be best).

#4: Focus on bulk sales with your own delivery system, or use common carriers if you are lucky enough to find a good one. There are many parts of the country that have no significant local chestnut growers or local retail outlets, where home-based buyers will buy 1,000 to 5,000 pounds at a time for their friends,

which means they have a lot of friends! How do they find you? Your website. Make it clear you are willing to do bulk sales at great prices. If they like what you have, they will come back for more!

Hope this helps! Always feel free to ask questions. We all do, and we always will. Especially at the annual conference. Make your plans now!

Take care.

A handwritten signature in black ink, appearing to read "DRE".

—David English

area where these pathogens are present is enough for them to be transported to new areas on footwear and even tires.

If your chestnut tree is suffering from an infection of PR, the outcome does not look good at this time because there is no known treatment for PR in chestnut trees. If it's PC, on the other hand, the tree might have a chance of surviving if it is cared for properly. Both PR and PC present in the affected trees have a similar presentation. There are early signs and late signs. If your chestnut tree is presenting the late signs, there may not be much hope for the tree. The early signs are often confused with other issues such as nutrient deficiencies. If there is an available history of the tree's health and the growing conditions that lead up to the point the tree starts looking sick, then differentiation between a nutrient deficiency and PC or PR becomes much easier. Take a look at other chestnut trees within 100 feet of the tree under stress. Nutrient deficiencies are likely to be present in the rest of the or-

chard, whereas phytophthora infections usually do not infect the entire orchard in a single season.

Here are some signs and symptoms of a PC infection:

- Leaves are smaller than normal, as much as 50% smaller (early sign)
- Leaves lack the deep green of a healthy tree, presenting a yellowing in the entire leaf (both early and late sign)
- Little or no new growth (both early and late sign)
- Very small buds or no buds at all develop on new growth (late sign)
- Bark at the base of the tree cracks and exposes the cambium layer (late sign)
- Tree experiences die-back (late sign)

As you can see, there are just a few early signs and several other late signs of PC infections. Aside from the signs



Late sign of PC infection

and symptoms, the recent history is very helpful and so is examining neighboring trees. PC can infect one tree and all the neighboring trees can remain unaffected, so the examining the neighbors may result in a failure to properly diagnose the problem. It does provide a basis for ruling out a nutrient problem, because a nutrient problem would very likely affect neighboring trees.

Early and late signs and symptoms are like arriving early and late to a party. If you are early, helping out can help make the party even better. Arriving late to the party might, as you know, bring on the stares. So it is with PC, getting there early can help with bringing the tree back to full health. Get there late and you might as well as put the tree down before the neighbors see it dying. No matter if it's late or early in the infection, doing nothing might be a good thing because adding nitrogen to the soil will make things much worse. Putting nitrogen on a tree suffering from PC feeds the PC infection, not the tree.

Let's turn to strategies to battle PC. Just like real battles, there are three strategies available to the orchardist: offensive, defensive, and the wait and hide strategy, hoping the battle will pass you by. Here are some defensive strategies:

- Don't plant trees in soils conducive to PC infections; deep sandy loam well drained soils at least 2 feet deep are best
- Don't fertilize a tree presenting PC symptoms
- Drain and tile water-prone parts of the orchard



Phytophthora cinnamomi killed chestnut tree

And now some offensive strategies:

- Prune 50% of the tree back, allowing the reduced root capacity to feed a much smaller tree
- Only apply fertilizers to the orchard once the soil temp is above 60F at 8" deep
- Apply phosphite to the leaves and the soil at the base of the tree

As you can see, there are not a lot of weapons to choose from in battling PC. If there is one weapon you must choose, then the first one above is the best choice: "Don't plant trees in soils conducive to PC infections". But, if you have a tree with a PC infection, then it's far too late for that choice. Next on our list are the fertilizer options. These are brought to us from the raspberry producers. There is one other not discussed yet: this new option is to make a raised bed or mound 18" high above the surrounding soils at least 4 feet across. This even works with getting a chestnut tree to grow in heavy soils. The bad part of this option is the chestnut tree will always do poorly even in the best of years. For the commercial chestnut producer, it's better to just avoid using heavy and or wet soils.

We won't discuss draining and placing tiles in a field because local laws would likely limit this option. The phosphite option is still available but lacks good scientific evidence of controlling PC infections, and it is not well understood how the phosphite helps to control PC.

Cutting the tree back is the last option in this list, and it should be considered the last option. Does cutting a tree back that much even really help? Yes, it does help, and often results in the tree coming back to full health over the next two growing seasons. The problem is, the tree is already suffering, and cutting it back may just kill it. Cutting a tree presenting signs of a PC infection back this much should only be done before the chestnut trees start blooming in early

"Early and late signs and symptoms are like arriving early and late to a party. If you are early, helping out can help make the party even better. Arriving late to the party might, as you know, bring on the stares."



Normal healthy chestnut tree

summer, because the tree still has stored reserves to recover. Sounds a little dangerous, doesn't it? Consider it the same as a major surgery. Doing a major surgery on a very sick person carries much greater risks than on a healthy person.

Let's get to the bottom line. If a chestnut tree gets infected with PC, is it a likely death sentence? From observations in many chestnut orchards, the chances of a tree surviving a PC infection if nothing is done is less than 25%. If all the options are utilized, except for the phosphite option, the chances of survival can be as

much as 80%. There is just not enough understanding of the phosphite option to provide a probable outcome.

Before closing, we need to discuss secondary infections. What is a secondary infection? This is when the host is infected with one pathogen, which weakens the host, and then a second infection from a different pathogen enters the host. For chestnut trees we can take the example of a PC infection and the intrusion of the shot hole bore. The shot hole bore carries a fungus that will very likely kill a chestnut tree already sickened by PC. If the tree was not already sick, the tree's own healing response system can usually prevent a full infection of the fungus. It's not just PC that can leave a chestnut tree vulnerable to a secondary infection; water stress from insufficient or excessive water can also leave a chestnut tree vulnerable to infections. 🍒

Preventing mold post-harvest: Guidelines for storage and sanitizing of chestnuts

By Dennis Fulbright, Michigan State University Department of Plant, Soil, and Microbial Science | fulbrig1@msu.edu

When chestnuts are in limited numbers, molds are not very common. But once the environment is altered by an abundance of chestnuts, molds begin to grow, first on the compromised nuts, then on the healthy nuts. Storage improvements, which include sanitizers, can enhance the quality of stored chestnuts as they wait for packaging and markets. They should be good through January.

Postharvest decay of edible chestnuts reduces nut quality and can lead to severe economic losses. In Michigan, postharvest decay was identified as one of the major problems that negatively impacts fresh chestnuts, accounting for up to 25% of losses after harvest. Recently, several fungal species were isolated from fresh healthy Michigan chestnuts and chestnuts experiencing postharvest shell mold and kernel decay, including *Penicillium* spp., *Acrospora mirabilis*, *Botryosphaeria ribis*, *Sclerotinia sclerotiorum*, *Botrytis cinerea*, *Gibberella* sp., and *Coniphora puteana* (see photo below). Some of these fungi may simply grow across other healthy chestnuts while looking for those nuts

that are senescing. Some fungi simply leave dark spots on the hilum (the light spot on the shell of the chestnut). In some situations, the chestnuts covered with the white mantle of *Coniphora* can be washed off and put into StorOx™ and these nuts will remain good.

Worldwide, there are two major chestnut kernel pathogens—both fungal in nature. One is called black rot and it is caused by *Sclerotinia pseudotuberosa* and the other is called brown rot and it is caused by *Gnomoniopsis smithogilyvi*. They both occur in Europe, and only brown rot is of concern in Australia and New Zealand. They are considered serious pathogens that could threaten the industry. These are not just fungi that grow on senescing nuts in storage; they appear to directly invade the kernel as it develops during the summer months and rot the nut before harvest.

Bad and decaying chestnuts must be sorted. But you must reduce the number of poor chestnuts in the bin if you are to ultimately reduce the amount of mold. To do that requires setting procedures and

following guidelines. Here are several:

1. Grow the highest quality chestnuts using best growing practices including the highest quality cultivars for your area.

2. Keep the trees healthy for the entire growing season, providing water and nutrients at appropriate times.

3. Recognize that the first chestnuts to fall in September or October may be somewhat compromised. Harvest is a bell-shaped curve, with some falling early and late. The best quality is usually found in those that fall in the middle of the bell-shaped curve.

4. If you have both Chinese chestnut trees mixed in with European x Japanese hybrid cultivars like ‘Colossal’, there can be a physiological breakdown of the kernel that is not associated with microorganisms. We call it internal kernel breakdown (IKB). It is an incompatibility between these tree species when one pollinates the other. Stay with Chinese or European x Japanese hybrid cultivars, but not both.

5. Before harvest starts, the facility in which the chestnuts are to be stored must be thoroughly cleaned with food-safe chemicals that reduce microorganisms.

6. The temperature must be kept as close to 30 F as possible. This reduces the respiration of the chestnuts (less water loss, therefore less free moisture for microorganisms to grow). The chestnuts do not freeze due to their sugar content, and this temperature can reduce the number and amount of actively growing molds. The higher the temperature, the more moisture, the more fungi and bacteria, the more water loss and the better the environment is for mold growth. However, if the temperature slides accidentally below 28 F, the chestnuts will freeze and when they thaw, they will be dead and accumulate water-soaked off tastes and smells. They will be spoiled. Do not allow the chestnuts to freeze in their shells.

7. After the facility is cleaned and the temperature reduced and set, find bins in which to store the chestnuts that offer



This white mold is probably *Coniphora puteana*, a wood-rotting fungus that grows across the chestnuts during storage. It finds one poor quality nut, infects it, and then spreads to other poor quality nuts in the bin.

“Mold reduces chestnut quality and can lead to severe economic losses.”

some type of air flow. The alternative is to move the chestnuts in the facility at least once a week. This can be accomplished by “pouring” the chestnuts from one bin to another. The more often done the better the result. This will also stop the molds from moving from one bad chestnut to another in pockets. Think about the type of bins. Most large growers use apple bins that hold 800 to 1,000 pounds of nuts. But smaller growers might use crates that hold small fruit. Air movement is critical.

8. Harvest the nuts, wash, and float. The ones that float might be good, but they are usually more compromised than the sinkers. There are bad nuts in the sinkers too. As you move the chestnuts during storage, you may need to float them again. Cut open some of the sinkers and determine why the majority are floating. Air pockets, extra shell invading the kernel, or rot? You will get a sense as to why they float.

9. The next step is sizing. If you make your own grader, try not to use materials that can scratch the shells.

10. Before you bring the chestnuts into the clean storage refrigeration unit, treat them with a sanitizer. There are several that have reputations for sanitizing chestnuts such as bleach or Chlorox, but these are not as effective as hydrogen peroxide as called hydrogen dioxide or ozonized water. The materials most growers are using now is called StorOx™ or SaniDate™, and the company producing them is BioSafe. It is organically certified. Do not expect it to be safe to handle; hydrogen peroxide is a strong oxidizer, and it will burn your skin. You will need to mix it and follow the instructions.

This material kills what is on the chestnuts. It sanitizes the chestnuts. It does not stop the chestnuts from becoming infected from other sources once it has been used on them. You may need to re-treat the chestnuts four times in a season depending on how well you cleaned your facility, the quality of the chestnuts, the temperature at which you hold the chestnuts, and the ability to move the chestnuts.



Co-op storage facility for chestnuts brought in by members. This facility is cleaned and sanitized, and the temperature is lowered each year before the chestnuts are brought in to the facility. These chestnuts will have been treated with the sanitizer before entering this refrigeration unit. Also, the chestnuts in each bin are poured into empty bins at least once every three weeks.



Chestnuts being treated with SaniDate™. An apple bin is dropped into a vat of SaniDate™. Floating chestnuts should be removed.

Efficient application, monitoring and examination for microbial spoilage is one of the most important aspects of chestnut production. If you are treating in your own facilities, you must develop strategies to maximize product coverage and ef-

ficacy. Hydrogen peroxide in combination with peracetic acid (Storox™; SaniDate™) has been adapted by chestnut producers to better reduce postharvest mold and kernel decay. 🍅

Chestnut and Wild Mushroom Stuffing

INGREDIENTS

1/3 pound fresh chestnuts
 8 tablespoons (1 stick) unsalted butter
 2 1/2 cups sandwich bread, such as rye, sourdough, or pumpernickel, crust removed and cut into 1-inch cubes
 2 1/2 cups wild mushrooms
 1 medium onion, diced
 4 stalks celery, diced
 2/3 cup fresh parsley, coarsely chopped
 3 tablespoons plus 1 teaspoon fresh thyme leaves
 1 1/2 to 2 cups chicken stock or low-sodium chicken broth
 2 large eggs, lightly beaten
 1 tablespoon fine sea salt
 2 teaspoons freshly ground black pepper

PREPARATION

Preheat oven to 350°F.

Using chestnut knife or sharp paring knife, make large X on flat side of each chestnut through shell but not meat. Soak chestnuts in bowl of warm water to cover by 2 inches for 15 minutes, then drain well. Arrange chestnuts in 1 layer in shallow baking pan, then roast in middle of oven until shells curl away at X mark, about 15 minutes. Peel away shells from chestnuts while still hot. In large pot boiling water, blanch chestnuts 2 minutes, then drain. Using kitchen towel, rub chestnuts to remove skins. Coarsely chop and reserve. Leave oven on.

Butter 9- by 13-inch casserole dish with 1 tablespoon butter.

On foil-lined baking sheet, toast bread in 350°F oven, tossing occasionally, until lightly browned, about 15 minutes. Place in large mixing bowl and set aside. Leave oven on.

In heavy, large skillet over moderately high heat, melt 4 tablespoons butter. Add mushrooms and sauté, stirring, until golden brown, 7 to 8 minutes. Add another 2 tablespoons butter and heat until melted. Add onion and celery, and sauté until translucent, 6 to 7 minutes.

Add mushroom mixture plus chestnuts, parsley, and thyme to bread and gently stir to combine.

In heavy, small pot over moderate heat bring chicken stock to gentle boil. Pour into bread mixture and gently toss to combine. Stir in egg, salt, and pepper. Transfer to casserole dish. The stuffing can be prepared up to this point and kept, covered and refrigerated, up to four hours. Bake until golden brown and heated through, about 30 minutes. Serve hot.

Yield: 10 servings

Recipe created by chef Traci Des Jardins of San Francisco's Jardinière as part of a special menu she created for Epicurious's Wine.Dine.Donate program.

This recipe can be found on Epicurious.com at www.epicurious.com/recipes/food/views/chestnut-and-wild-mushroom-stuffing-240486.

New Protective Screening Technology: Thinking outside the box in the citrus orchard world

By David English, President | chestnutsrus@yahoo.com

I recently came across an article in the Florida Grower January 2017 issue that amazed me. A citrus grower has planted 20 acres of trees under protective screening! I was somewhat surprised trying to imagine 20 acres under a screen designed to keep out the invasive bugs that hurt the citrus industry, and yet still get the needed pollinators.

The current systems are 20 feet high. They call it CUPS, Citrus Under Protective Screening. The systems use less water, less chemicals, less fertilizer, and no bactericides, which checks off several consumer issues. There is less water required because there is less evaporation under the screen. The screens are rated to withstand 80 mph winds and are fully insurable because they are constructed under a certified engineering protocol.

They see four times the production on one acre compared to four acres planted outside.

Could chestnuts see similar increases under this type production? The 50-mesh netting diffuses sunlight, which could help prevent sunburn on chestnut trees. Is it hard to imagine 5-10 acre chestnut orchards (in snow free areas?) under taller structures in areas where certain pests are a problem for chestnut growers?

Other members I talked to pointed out that while this is a fascinating approach, the citrus trees are planted at a very high spacing per acre and are probably quite dwarf in height. Mike Gold noted that to apply this approach to chestnut trees as we currently grow them, you would need an absolutely massive (35 foot

high?) structure, plus only a fraction of the number of trees per acre would be covered compared to the citrus orchard. Greg Miller said that it was hard for him to imagine how such a screen could increase yields enough to justify the cost. And it wouldn't work for growers who see snow and ice storms.

I was impressed by the technology that is now out there and thought it might be useful to share, if only to keep you on top of what is happening in the orchard world, and to get you thinking outside the box. Who knows...with global warming, someday we might look back at this idea and wonder why our industry didn't start trials sooner. 🍓

Read more about it here: www.growing-produce.com/citrus/planting-citrus-under-protective-screen-goes-commercial

Establishing or expanding your chestnut orchard?

Improved chestnut cultivars are a sound investment

Utilizing improved grafted chestnut cultivars is critical to economic sustainability for chestnut growers

By Erin Lizotte, Michigan State University Extension, and Dennis Fulbright, MSU Department of Plant, Soil, and Microbial Science

In today's market, all commercial fruit and nut tree orchards should be established with cultivars that have been selected by horticulturalists for superior qualities. These cultivars are not produced through seed, but are cloned by grafting or budding onto seedlings that will support the chosen cultivar. In this manner, a single tree with beneficial traits can be copied millions of times by simply cutting small branches from the chosen tree and attaching it onto the stem of planted seedlings. Conversely, seedlings are the result of sexual recombination between a known mother tree and an unknown father, resulting in endless variability and unreliable characteristics, making them suboptimal for commercial production.

There are many benefits of using grafted cultivars compared to seedling trees. Cultivars allow growers to consider and select for specific traits based on grower needs and goals. Cultivars are predictable in performance and can be selected to optimize production. Important characteristics that may help a grower select between cultivars include harvest time, pollen production and nut size, all of which are unknown in seedling populations.

Grafted trees also come into bearing much earlier. Regardless of their size or age, grafted cultivars are mature when planted and therefore initiate nut production immediately with substantial yields within five years. This earlier production allows growers to recoup their establishment costs and start generating revenue quickly. With seedling trees, it is well known that many trees do not go into production for many years if ever. This means that the fertilizers, pesticides, irrigation, etc. given to non-productive trees in the seedling orchard are wasted resources, costing money and compromising the environment with little or no return.

Additionally, since cultivars are grafted from mature tissue, they usually drop leaves at the appropriate time in the autumn and are less prone to related winter injury. Young seedling trees tend to hold onto leaves well into winter, which can accumulate ice and snow that can break limbs, further damaging productivity.

So why would anyone plant seedlings? The answer is simple: Cultivars are more expensive. However, the premium cost of grafted cultivars is recouped quickly through faster, increased and more reliable nut production. The chestnut cost of production has shown that growers producing superior chestnut cultivars can recoup their investment in as little as six years and have the potential to see substantial returns on their investment over time. Research has shown that seedling orchards produce far fewer nuts and take longer to begin bearing. It is impossible to create a representative economic model, as there is too much variability in the germplasm.

Despite advertising touting "superior seedlings," there is no known method to predict the quality of chestnuts from seeds until they are mature. Most of the seedlings will not be superior. This is due to the shuffling of genes during the sexual crosses leading to the development of the seed. The only use for seedlings in a commercial orchard is as rootstocks for improved cultivars.

Another reason growers have not planted grafted cultivars is the belief they are more susceptible to chestnut blight. We know that chestnut blight susceptibility is tied to species and has nothing to do with the method of propagation. There are grafted cultivars that are completely resistant to chestnut blight, and conversely there are seedlings that are very susceptible to chestnut blight. Additionally, great strides have been made in managing chestnut blight in orchards; it



Orchard of grafted chestnut cultivars in Michigan. Photo by Erin Lizotte.

is simply not an insurmountable issue. Like all pests, chestnut blight simply requires monitoring and timely management.

Finally, the last reason some may hesitate to plant improved cultivars is a misconception that they don't taste good. This is probably referring to how nuts of the cultivar 'Colossal' taste right from the tree. A 'Colossal' grafted nut usually does not taste as good as a Chinese grafted or seedling nut that falls fresh from the tree. After a couple of weeks in refrigeration, which is expected in any commercial scale chestnut operation, the process of curing is completed, starches turn to sugar, and 'Colossal' has a much better taste. In fact, grafted 'Colossal' chestnuts have been some of the most sought after chestnuts on the market due to size and taste. In a Missouri taste test, Michigan-grown 'Colossal' nuts were considered the sweetest nuts of the entire test, beating out Chinese chestnuts and other 'Colossal' nuts from California and Missouri.

To start out with the best possible plan for success, growers either establishing or expanding a chestnut orchard should include superior and improved chestnut cultivars. 🍂

This article was originally published by Michigan State University Extension (see more at www.msue.msu.edu).

For Sale / Seeking

CGA members can post equipment or other items they want to buy or have for sale, free. Send your submissions to chestnutgrowersofamerica@gmail.com.

SEEKING: Scion wood of Bergantz chestnut. Exchange possible. Contact: Davor Juretic, juretic.davor@gmail.com.

FOR SALE: Chestnut Orchard, 71 Dunstan hybrid trees planted in 1994 on 1.1 lake front acres - beautiful home site, located in Dyer County, Tennessee. For additional information call Joe Welborn (901) 828-7957.

FOR SALE: Tifone Orchard/vineyard sprayer. 400 liter, PTO driven sprayer with adjustable new spray heads, adjustable fan, new gear oil, and new uncut drive shaft for exact PTO requirements. Call/email for details/photos/questions: David English (850) 566-7092, chestnutsrus@yahoo.com.

****YOUR AD HERE****

Reminder: If you haven't already, renew your CGA membership for 2017!

To renew: Download a fillable form from the CGA website, www.chestnutgrowers.org/resources.html. Complete the form and then email it to Jack Kirk, secretary/treasurer, at jkirk@essexbank.com. You can then pay your dues through the website by visiting www.chestnutgrowers.org/paydues.html. **OR** fill out the hard copy of the form included with the January issue and send with a check made payable to Chestnut Growers of America, Inc. to Jack Kirk, 2300 Bryan Park Ave., Richmond, VA 23228. ~Thank You~

Annual Meeting Presentations:

Economics of starting an orchard – my experience from me buying land to the chestnuts paying me – Bob Stehli, Wintergreen Tree Farm, Mantua, OH

Using DNA markers to benefit the chestnut industry, especially chestnut breeding - Jeanne Romero-Severson, Notre Dame University, South Bend, IN

Implementation of a cooperative chestnut breeding program – Greg Miller, Empire Chestnut Company, Carrollton, OH

Report from the Center for Agroforestry – Mike Gold, University of Missouri, Columbia, MO

2017-2018 Slate of Officers:

President: Roger Blackwell

Vice President: Derek Waltchack

Sec/Treas: John Kirk

Directors: Sandy Bole, Greg Miller, Tom Wahl, Luke Wilson

The nominating committee was headed by Derek Waltchack. According to the bylaws the slate shall be considered to have been elected unanimously if no written petitions are received. These directors and officers will take over at the conclusion of the annual meeting.



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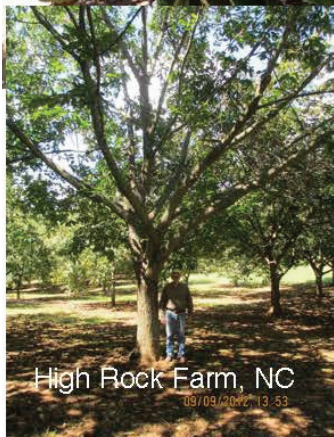
email: chestnuthilltreefarm@gmail.com



Wilson Orchards, VA



Delmarvelous Orchards, DE



High Rock Farm, NC



Chestnut Ridge of Pike County, IL

You won't want to miss the Chestnut Growers of America 2017 Annual Meeting!

Program

Friday 9 June	5:00 – 9:00 pm	Welcome Reception at Route 9 Cooperative Food, snacks & beverages Self-guided, close-up tour of chestnut packing facility
Saturday 10 June	8:00 am	Meet at Route 9 Cooperative building Tour nearby orchards, ages 4 years to 45 years
	9:30 am	Travel to Greg Miller's home (20 min) Tour nursery, seedling trials, orchards
	11:30 am	Travel to FFA Camp Muskingum (15 min)
	12:00 noon	Lunch at Camp Silent auction
	1:00 – 5:00 pm	Presentations CGA Business – David English, President
	5:30 pm	Catered dinner at camp Silent auction winning bids announced
Sunday 11 June	8:00 am	Board of Directors Meeting at Microtel Inn & Suites
	10:00 am	Optional tour of Japanese chestnuts, American hybrids, and/or chinkapins at Greg Miller's

Locations

Route 9 Cooperative: 4300 Germano Rd SW, Carrollton, OH 44615

Greg Miller's home: 3276 Empire Rd SW, Carrollton, OH 44615

FFA Camp Muskingum: 3266 Dyewood Rd SW, Carrollton, OH 44615

Attendees are encouraged to car-pool for the events on Saturday to save time and help with parking logistics. There is plenty of parking at the co-op facility for the Friday evening reception.

QUESTIONS: e-mail Greg Miller at empirechestnut@gmail.com

FLYING: Nearest airport is Akron-Canton (CAK) (50 min drive); second nearest is Pittsburgh (PIT) (75 min drive)

SUGGESTED HOTELS: All are within 15 min drive to all meeting & tour locations

Microtel Inn & Suites
1030 Canton Rd NW
Carrollton, OH 44615
330-627-1133 (direct)
Special group rate of \$69; just mention "Chestnut Growers of America"; limited rooms at this price, book early

Days Inn
1111 Canton Rd NW
Carrollton, OH 44615
330-627-9314 (direct)

Candlewood Suites
1296 Canton Rd NW
Carrollton, OH 44615
330-627-1200 (direct)

Cut here and return this form with your check made payable to Chestnut Growers of America, Inc. and mail to Jack Kirk, 2300 Bryan Park Ave, Richmond, VA 23228. Or download an e-version of this form from the CGA website, fill it out, and email to Jack Kirk at jkirk@essexbank.com, then pay registration fees online at www.chestnutgrowers.org/paydues.html. Registrations need to be received by Monday, May 29. On-time registration fee includes Friday evening welcome reception, Saturday refreshments, lunch, conference facilities, and Saturday dinner.

Name _____ Member _____ Non-Member _____
 Name _____ Member _____ Non-Member _____
 Name _____ Member _____ Non-Member _____

_____ Number of members @ \$65.00 each = \$ _____
 _____ Number of non-members @ \$75.00 each = \$ _____
 TOTAL ENCLOSED \$ _____

Saturday dinner menu: Breaded baked chicken, mashed potatoes, gravy, California mix, rolls, dessert
 _____ "X" here if you would like a vegetarian entrée

I plan on donating something for the silent auction to be held on Saturday _____ YES _____ NO

_____ I am planning on a Sunday visit to see Greg Miller's Japanese collection, American hybrids, or chinkapins

Address: _____ City: _____ State: _____ Zip: _____
 Phone: _____ Email: _____

Washington Chestnut Company

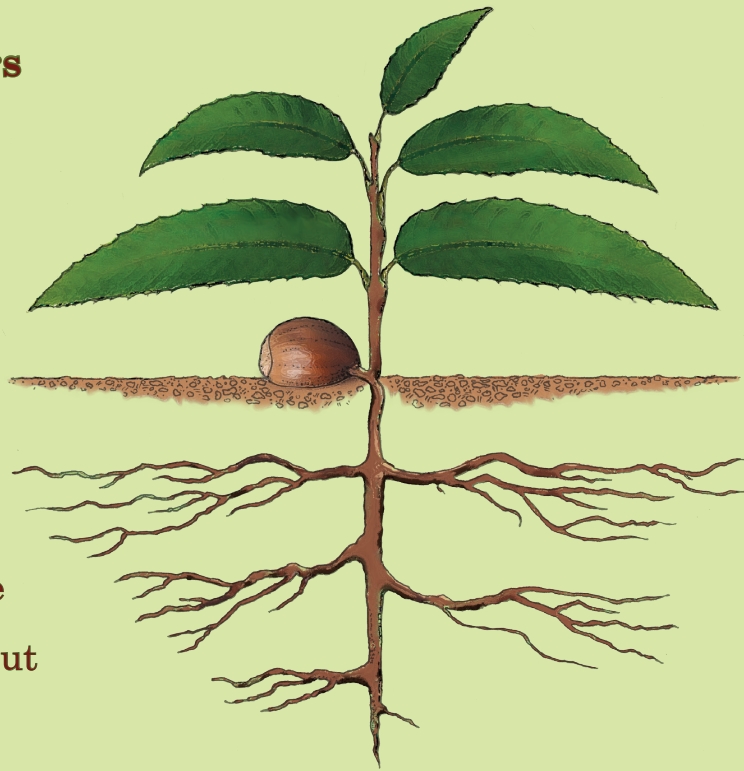


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Szego
Regis Montis
Regina Montis
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Marrone di Marradi
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