



2019 Annual Chestnut Market Survey: Higher Yields and A Market with Potential

By Dr. Mike Gold and Dr. Zhen Cai, Center for Agroforestry, University of Missouri | goldm@missouri.edu / caiz@missouri.edu

The Annual Chestnut Market Survey was initiated by the Center for Agroforestry at the University of Missouri and Chestnut Growers of America in 2010. The aim of this annual survey is to keep track of the growth of the chestnut industry over time and provide chestnut growers with information on the current and potential chestnut market. The 2019 Annual Chestnut Market Survey added several new questions to collect production information from orchards that are at least 15 years old, production information from chestnut cooperative members, and chestnut cooperative marketing information. In April 2019, the questionnaire was sent out to 136 current CGA members. In total, 63 useable surveys were collected with a response rate of 46%. This response rate is higher than the rate in 2018 (39%). We appreciate our members for their continuous support of the Annual Chestnut Market Survey. Below are our findings from the 2019 survey:

In This Issue

- 1 Annual Chestnut Market Survey Results
by Mike Gold
- 2 Planting Chestnuts for Deer?
by Tom Wahl
- 6 Annual Meeting Photos, Meet the Board,
and 2019 Board Meeting Summary
- 8 Hemming's Chinese Chestnuts
by Sandy Anagnostakis
- 10 AIMS Project Sample Collection Protocol
by Jeanne Romero-Severson

Production Operation

Of all the respondents, 92% are chestnut growers, sellers, or value-added producers; 3% are chestnut researchers/educators; and 5% are new orchard growers. Nine of the respondents are members at chestnut cooperatives, including Chestnut Growers, Inc. (5 respondents), RT 9 co-op (2 respondents), and Prairie Grove Chestnut Growers (2 respondents). Chestnut orchards owned by our respondents are located in 24 states (see Table 1, page 4). Respondents who are cooperative members have their orchards in Illinois, Ohio, or Michigan.

Approximately 44% of the chestnut orchards owned by our respondents are at least 15 years old. Among respondents who are co-op members, 62% reported that their chestnut orchards are at least 15 years old. In terms of orchard size (see Table 2, page 9), our respondents own a total of 824 acres of land planted in chestnuts, and 397 acres (48%) of them are in commercial production. Co-op members reported that they own a total of 247 acres of land planted in chestnuts.

In terms of chestnut orchard size, more than half of our respondents (54%)

Continued on page 4...

THE CHESTNUT GROWER

July 2019

About Chestnut Growers of America, Inc.

The purpose of Chestnut Growers of America is to promote chestnuts, to disseminate information to growers of chestnuts, to improve communications between growers within the industry, to support research and breeding work, and generally to further the interests and knowledge of chestnut growers. CGA advocates the delivery of only high-quality chestnuts to the marketplace.

CGA began as the Western Chestnut Growers in 1996 in Oregon where about 30 or so chestnut growers understood the need to join forces to promote chestnuts in the U.S. Eventually they realized that they needed to be a national organization and solicited memberships from every grower in the country, which took the membership to over 100. The name of the organization was changed to Chestnut Growers of America, Inc., and it was granted 501(c)(5) status. Annual meetings take place around the country in an effort to make it possible for a maximum number of people to attend. A newsletter, *The Chestnut Grower*, is published quarterly and distributed by mail and/or email. CGA maintains an extensive resource site available only to members containing information helpful in growing and marketing. Visit chestnutgrowers.org for more information.

Board of Directors

President	Roger Blackwell Milford, MI	(810) 923-2954 rblackwel@comcast.net
Vice President	Derek Waltchack Birmingham, AL	(205) 223-2607 dwt@shanwait.com
Secretary/Treasurer	Jack Kirk Richmond, VA	(804) 357-1137 jackschestnuts@gmail.com
Director	Steve Jones Selah, WA	(509) 697-4160
Director	Greg Miller Carrollton, OH	(330) 627-3181
Director	Tom Wahl Wapello, IA	(319) 729-5905
Director	Luke Wilson Gridley, CA	(530) 370-5533

Committees

Editor/Webmaster	Rita Belair	chestnutgrowersofamerica@gmail.com
------------------	-------------	--

Annual Membership Dues

Single membership, \$35; Household membership, \$45; Associate membership, \$50. Members receive *The Chestnut Grower* quarterly. Emailed newsletters are included. Mailed newsletters are an additional \$5 per year. A \$5 discount applies if payment is postmarked or submitted through the website by Feb. 15.

Advertising Rates

Full page, camera ready	\$20.00
Half page, camera ready	\$15.00
Quarter page	\$10.00
Business card (4 issues)	\$15.00
Classifieds	FREE

Email ads to chestnutgrowersofamerica@gmail.com. Send payment for ads to Jack Kirk, 2300 Bryan Park Av., Richmond, VA 23228. Make checks payable to Chestnut Growers of America, Inc. OR visit www.chestnutgrowers.org/paydues.html to submit payment online via PayPal.

Deadlines

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

Editorial Opinion

The views, articles and advertising appearing in *The Chestnut Grower* do not necessarily reflect the attitude nor policy of Chestnut Growers of America, Inc., its members, officers, Board of Directors, or Editor. Chestnut Growers of America, Inc., and this publication are not responsible for errors and/or misrepresentations in advertising. The Editor reserves the right to reject or edit all material submitted for publication.

© 2019. Original articles may be reprinted with written permission of the author and this publication.

Message from CGA President Roger Blackwell, *Chestnut Grower*



Thank you all for attending and having a great time at our 2019 Annual Chestnut Growers of America Meeting at the WK Kellogg Biological Station in Hickory Corners, MI. I want to thank all the presenters and Michigan State University for all the resources provided to make an informative chestnut

meeting. The highlight of this meeting was staying at a unique venue which gave us all many opportunities to network throughout our stay and learn from each other.

Thank you to all the speakers who presented on various topics currently of interest to chestnut growers. It was very good to hear from Dr. Jeanne Romero-Severson with an update on the Ancestry Informative Marker for Chestnuts (AIMS) Project and how we can help to continue the research. Louise Labbate gave a great presentation on the progress of the Asian gall wasp moving into Michigan. At least we know a natural predator (*Torymus sinensis*) is following the AGW. Dr. Monique Sakalidis presented more information on chestnut diseases and specifically the research her department will be conducting on brown rot disease. Our own MSU Extension Agent, Erin Lizotte, gave specific information on many of the chestnut pests we have in Michigan and how to control them. After lunch, Mario Mandujano discussed the processes he is using on chestnut tissue culture. Next, Dr. Mike Gold presented the 2018 chestnut market survey results. It would have been nice to see more growers respond to the survey, and growers will have another opportunity to respond next year. Then Dr. Dan Guyer discussed the postharvest heat treatment for chestnuts in eliminating the chestnut weevil and brown rot. Much more research is needed on this process. Next, Jordan DeVries talked to us about food safety on the farm and what we will need to do to maintain produce safety for the consumer. Finally, Luke Wilson brought information from Washington, D.C. concerning the issues about the classification of chestnut as a tree nut and therefore an allergen. What can we do to change this classification? It seems there is not proof that chestnuts are a nut tree allergen.

Please mark your calendars for next year as we plan to have our Annual CGA Meeting in Pennsylvania. The tentative dates for the meeting are June 12, 13, and 14th, 2020. In closing this message, I wish to thank Sandy Bole for her many years as a Board Director for CGA. She has been an outstanding member of our organization and will be missed on the Board.

Have a wonderful summer and many pounds of chestnuts in the coming harvest season!

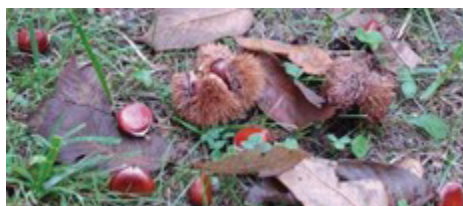
Roger

Planting chestnuts for deer? You may want to consider these alternatives.

By Tom Wahl, Red Fern Farm, Wapello, IA | tom@redfernfarm.com

Numerous articles and advertisements in outdoor and hunting magazines are promoting the idea of planting chestnuts for wildlife. It is true that chestnuts bear heavy crops of nuts that are very attractive to a wide variety of animals.

On the other hand, some of the claims aimed at deer hunters are wild exaggerations, or downright lies. Chestnuts do not make good trees for attracting deer during most deer hunting seasons. Chestnuts tend to ripen very early for a nut crop. They begin as early as late August in the Deep South, and even in the North they are usually all finished up by the middle of October, well before most deer seasons.



Deer love chestnuts, but they fall to the ground too early to be useful as an attractant during most deer hunting seasons. Photo courtesy of Red Fern Farm.

Chestnuts are very attractive to deer, but only for about one month out of the year. After that, the deer will be off looking for other food. A few late-ripening chestnuts are available as grafted trees, and while these may be useful to both deer and deer hunters in the Deep South, such trees are utterly useless in the North. Chestnuts ripen and fall early for a reason - the nuts are absolutely ruined by freezing temperatures. Once the temperature of the nut falls to 24°F, the embryo is killed. When the nut thaws, it begins to decay.

At that point, even the squirrels won't eat it. How often does your deer season start before the first hard freeze in the fall?

The American Persimmon is actually a much better choice for attracting deer to a property and then holding them there through the hunting season. Persimmon fruit is just as attractive to deer as chestnuts are - maybe even more so. While some persimmons ripen and drop their fruit at the same time as chestnuts, others produce a massive crop of fruit that begins dropping from the tree in November and continues all winter, right up until early spring. Freezing temperatures do not damage the fruit, and wildlife will continue to consume it all winter long. Deer are known to bed down near persimmon trees and listen for the sound of falling fruit. Hunters report deer often come running from several directions at the sound of a persimmon hitting the ground.

One thing to keep in mind is that persimmons come in male and female. Normally, only female trees produce fruit,



Persimmon fruit on the tree. Persimmon fruit is attractive to deer and does not have the same timing drawbacks as chestnuts. Photo courtesy of Red Fern Farm.



Dwarf chinkapin oak acorns are another excellent choice for attracting and holding deer. Image via Wikimedia Commons.

and normally only when there is a male tree in the vicinity.

Another tree that is exceptionally good at attracting and holding deer is the dwarf chinkapin oak, *Quercus prinoides*. Most oak trees don't begin bearing acorns until they are at least 10 to 15 years old, and then only bear a good crop once every few years. Dwarf chinkapin oaks can begin bearing as early as 3 years old and tend to bear a heavy crop every year. Furthermore, their acorns are among the sweetest and most attractive to wildlife of all acorns. The acorns are not damaged by freezing weather and remain palatable all winter long. The trees are broadly adaptable and will thrive just about anywhere except on poorly drained soil.

If you are interested in attracting and holding deer on your property during hunting season, please feel free to contact me. 🍓

Mark Your Calendars!

For the Chestnut Growers of America 2020 Annual Meeting, to be hosted next year in Pennsylvania. Tentative dates:

June 12 - 14, 2020

More details coming soon!

2019 Member Directory

An updated Member Directory was sent to all CGA members via email. If you have any corrections to your listing, or if you would like to receive a printed copy, please send a request to the editor at chestnutgrowersofamerica@gmail.com.

Continued from Page 1...

indicated that they have less than 10 acres of chestnuts planted compared to 51% in 2018 survey results (Figure 1). Approximately 40% of respondents indicated that they had plans to expand their orchards by establishing 236 acres of new chestnut orchards with an estimated 10,740 trees planted (increased from 157 acres of new chestnut orchards but number of trees decreased from 15,000 according to the 2018 survey results) (see Table 3, page 9).

The majority of our respondents (72%) grow chestnuts using conventional methods compared to 28% using organic production. Of those respondents who use conventional methods, 79% use inorganic fertilizer, 58% use insecticide, and 92% use herbicide. However, 89% of the co-op members surveyed indicated that they use conventional methods during their chestnut orchard management. Approximately 27% of the organic chestnut producers indicated that their products were certified by the USDA.

Harvest and Yield

Chestnut yields had a great increase (increased by 29%) in 2018 compared to 2017. A total of 469,706 pounds of chestnuts (30% were from co-op members) were harvested in 2018. 90% of the chestnuts harvested were from orchards that are at least 15 years old. On average, orchards that are at least 15 years old produce around 961 pounds of chestnuts per acre, compared to 209 pounds per acre produced by orchards that are less than 15 years old.

The percentage of respondents who

harvested at least 10,000 pounds of chestnuts decreased (30% in 2018 vs 21% in 2017) (Figure 2). A higher percentage of respondents who harvested less than 100 pounds of chestnuts were observed in 2018 (11%) compared to 2017 (8%). Most of our respondents (53%) picked up their chestnuts by hand, and 28% of respondents indicated they use a nut wizard to harvest chestnuts. Respondents also used other methods to harvest chestnuts, such as a commercial sweeper and harvester, Vac-system, and U-pick. Only 25% of respondents reported their yields were higher compared to the previous year, 70% reported the same, and 5% reported lower. Respondents also mentioned that matured trees, good weather, good pollination, and the application of fertilizer increased the yields of chestnuts. Bad weather and beetles were the factors that most hurt yields.

Marketing

Value-added chestnut products producers only accounted for 10% of our respondents, and 48% of our respondents sell fresh chestnuts. Most of our respondents (59%, declined from 71% according to the 2018 survey) indicated they produced and marketed chestnuts by themselves (Figure 3). The percentage of respondents who marketed all their chestnuts through a grower cooperative increased (11% in 2018 vs 4% in 2017).

Income from Chestnuts

18% of our respondents (compared to 22% in 2017) indicated that they had an annual gross sale income from chestnuts that was greater than \$50,000 in 2018 (excluding shipping and delivery) (Figure

Table 1. Locations of chestnut orchards owned by 2019 survey respondents.

State	# of orchards	State	# of orchards
AL	1	NE	1
CA	4	NY	1
FL	1	NC	3
GA	1	OH	2
IA	5	OK	2
IN	1	OR	3
IL	7	PA	1
KS	1	SC	1
MA	1	TN	1
MI	6	VA	3
MO	6	WA	4
MS	1	WV	1
		Total	58

4). There was a higher percentage of respondents (4% higher) who had an annual gross sale from chestnuts less than \$5,000 compared to the percentage in 2017. Since the majority of our respondents did not sell value-added chestnut products, only 7% of the respondents earned 1%-25% of their gross annual income from selling value-added products, and only 5% indicated that value-added products contribute to more than 50% of their sales.

Market Outlets and Prices

Growers sell fresh chestnuts and value-added products through different outlets (Figure 5), including marketing cooperatives, farmers markets, restaurants/chefs, distributors/brokers, health and natural food stores, grocery stores, wholesalers, online, and on-farm sales. The

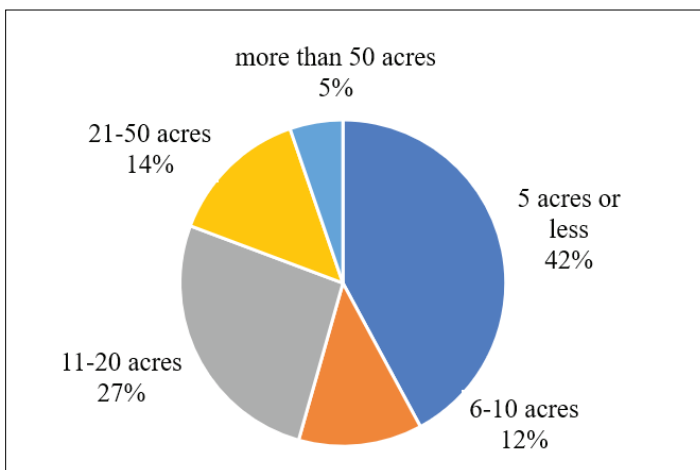


Figure 1. Sizes of chestnut orchards owned by 2019 survey respondents.

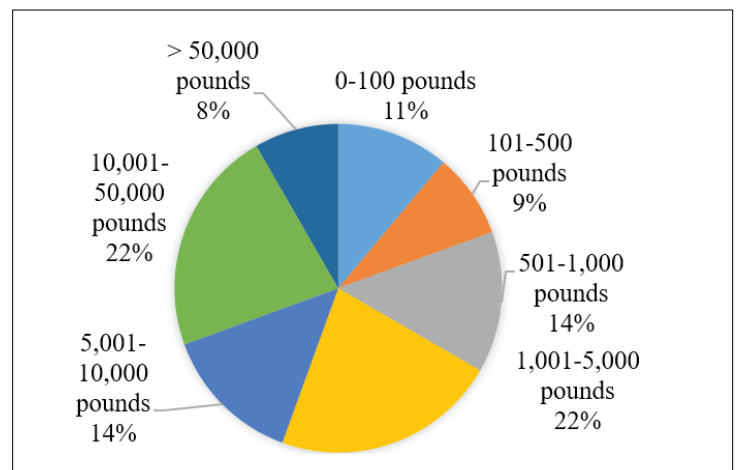


Figure 2. Number of pounds of chestnuts harvested by respondents in 2018.

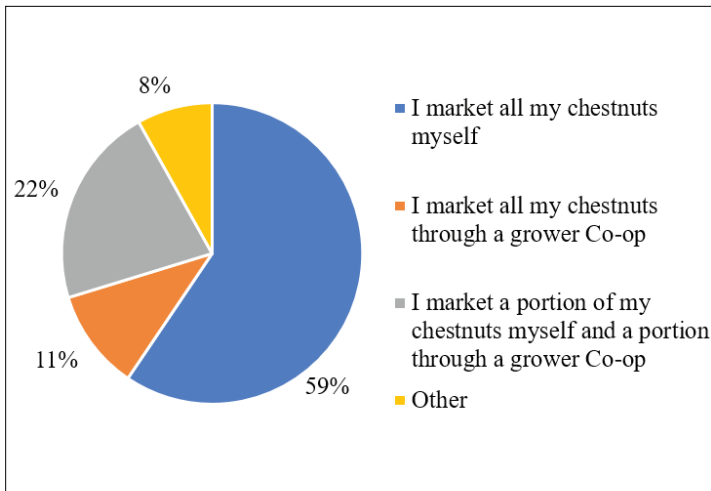


Figure 3. How respondents marketed their chestnuts in 2018.

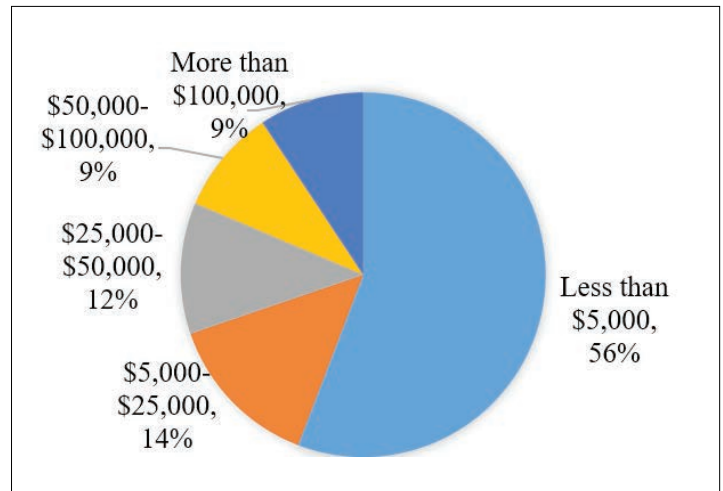


Figure 4. Approximate annual gross sale income from chestnuts in 2018, excluding shipping and delivery.

percentages of respondents who marketed their chestnuts through grocery stores, online, and wholesalers has increased this year. The percentage of respondents who marketed their products through marketing cooperatives and health and natural food stores has decreased. Table 4 (see page 9) provides chestnut prices at different outlets since 2015.

Demand for Fresh Chestnuts and Value-added Products

51% of respondents indicated they observed an increasing demand for fresh chestnuts compared to the previous year. In terms of the supply and demand in the current market, 46% of respondents indicated that demand exceeds supply (10% lower than the previous year). 20% of respondents indicated that they don't know about the relationship between demand and supply (12% higher than the previous year).

A question on respondents' perceptions about the demand for value-added chestnut products was also asked; however, only 5 respondents answered this question. 44% of respondents reported that there is a strong demand for value-added chestnut products, and 8% reported a weak demand.

Information on Chestnut Cooperatives

This year we also obtained some marketing information from chestnut cooperatives. Three cooperatives participated to our survey, including Route 9 Cooperative, Chestnuts Growers, Inc., and Prairie Grove Chestnut Growers. These cooperatives have a total of 104 members. In terms of number of chestnuts

sold, cooperatives reported that, in total, 342,590 pounds were sold in 2018, 188,454 pounds in 2017, and 322,473 pounds in 2016. Most chestnuts were sold to Georgia, Illinois, Iowa, Michigan, Minnesota, Massachusetts, New York, and Virginia. A very small percentage of chestnuts (0.33%) sold by cooperatives are organic. Chestnuts sold by cooperatives have a retail price between \$3/lb and \$7/lb, and a whole sale price between \$2.5/lb and \$4.2/lb. Outlets of those chestnuts include restaurants/chefs (\$4/lb), distributors/brokers (\$3.45/lb), groceries (\$3.60/lb), and online consumers (\$5.07/lb).

Conclusion

2018 was a good year for chestnut growers. Chestnut yields increased by almost 30% this year compared to the previous year. However, 90% of the

yields are from chestnuts orchards that are at least 15 years old. Although co-op members only account for 16% of our respondents, 30% of the chestnut yields are from co-op members.

The chestnut market still has great potential. Higher chestnut yields this year suggest an increasing supply of chestnuts; however, chestnut market prices did not decrease accordingly. This may suggest that, in the current chestnut market, supply is still below demand. Most growers are also optimistic about the current chestnut market demand. Many growers are still planning to expand their chestnut orchards and plant more chestnut trees. 🍅

Please find the remaining tables associated with this article on page 9, as well as the results for chestnut production from the 2017 USDA census.

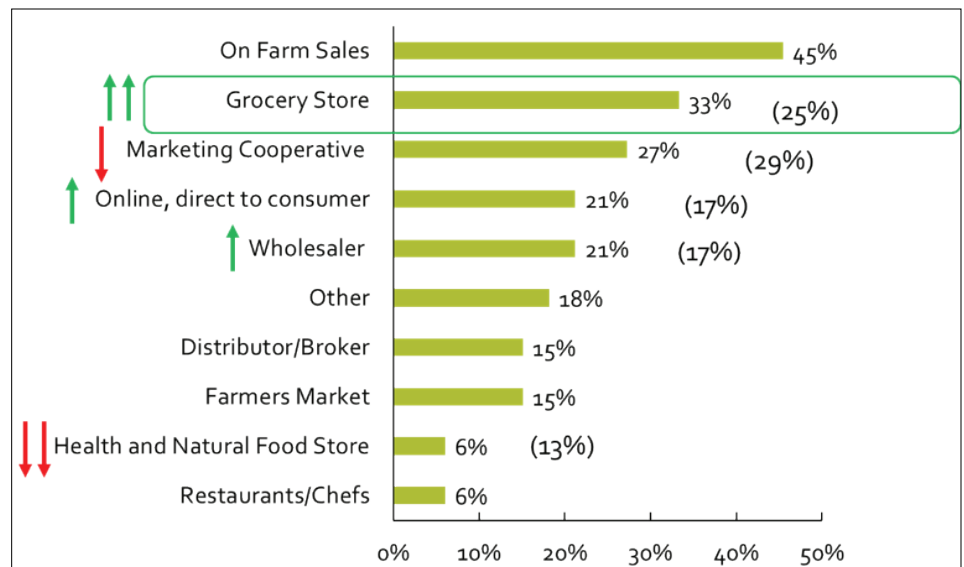


Figure 5. Market outlets for fresh chestnuts and value-added products (numbers in parentheses are data from the previous survey).

Scenes from the weekend in Michigan...



Chestnut growers swap stories from the past year at the Friday night social gathering.



The 2019 annual meeting brought a great turnout from newer and veteran growers alike.



Michigan State researcher Mario Madujano presents on progress being made producing chestnut trees in vitro (tissue culture). Many other informative presentations were also given.



The "Show & Tell" session after dinner on Saturday provided everyone with the opportunity to continue socializing and bring up topics for feedback from the group.



The Kellogg Biological Station conference facilities enabled the group to eat all meals together in the dining hall.



Roger Blackwell and Corey Allen explain the order of operations at the Chestnut Growers, Inc. chestnut co-op receiving operation in Clarksville, Michigan on a Sunday field trip.

Meet the Board: 2019 - 2020 CGA Board of Directors



Roger Blackwell, President
New Era Chestnuts, LLC
Milford, Michigan



Derek Waltchack, Vice President
Alpine Farms
Birmingham, Alabama



**Jack Kirk, Secretary/
Treasurer**
Rocky Creek Chestnut Farm
Richmond, Virginia



Greg Miller
Empire Chestnut Company
Carrollton, Ohio



Tom Wahl
Red Fern Farm
Wapello, Iowa



Luke Wilson
Wil-Ker-Son Ranch
Gridley, California

Welcome to Steve Jones

Steven R. Jones, Ph.D., grew up in Girard, IL, a small town in central IL. Along with his brother and two cousins, Steve owns and operates



the family farm near Blandinsville, IL that has been in the family since 1835. After high school he attended Western Illinois University in Macomb (B.S. degree in Animal Science in 1972), Auburn University in Alabama (M.S. in Animal Nutrition) and Oregon State University (Ph.D. in Ruminant Nutrition in 1978). Steve has been active in dairy nutrition and management for all of his professional career. Colossal Orchards, Inc. was established in 1990 in Selah, WA, a bedroom community of Yakima. The orchard was named after the Colossal variety of chestnuts, and the first planting occurred in 1992. Additional acreage was added in 1998, and the total planted chestnut acres were 18. Colossal Orchards mechanically harvests and processes its chestnut crop. The nuts are marketed to the public, produce wholesalers, and major grocery chains such as Kroger and Wholefoods. Additional acreage was added in 2019, and more acres will be added as tree availability permits.

2019 CGA Board Meeting Summary

The CGA Board of Directors met at the annual meeting in Michigan on Sunday, June 9, 2019. Board meetings are open and members are welcome to attend. Your feedback is welcome on any of these topics; contact information for board members is listed on page 2. A summary of this year's meeting follows:

Change in Dues

Jack Kirk, CGA treasurer, determined that a \$10 raise in dues across the board would balance the books for CGA. The board voted unanimously to raise all member dues by \$10 per year. Starting in 2020, individual memberships will be \$45, household memberships will be \$55, and associate memberships will be \$60. Printed newsletters are still an additional \$5 per year. In order to encourage prompt renewal of memberships from year to year (many members do not renew on time), a \$10 late fee will be applied to membership dues after February 15, with the understanding that a number of reminders will be sent out before that deadline. In addition, members will have

the option to purchase a membership for three years at once, instead of having to renew every year. Jack Kirk will be individually contacting members who have not yet renewed this year. Non-members who attend future annual meetings will automatically be granted a one-year membership.

Next Annual Meeting

The 2020 annual meeting will be held in Pennsylvania. Since last year's meeting was on the West Coast, and this year's in the Midwest, an East Coast location was desired. Sara Fitzsimmons, Regional Science Coordinator for the American Chestnut Foundation, attended the meeting and volunteered to help coordinate next year's meeting with Penn State University. There is a small group of people in Pennsylvania who are trying to build a chestnut grower group there, and Penn State has excellent conference facilities. The tentative dates for the 2020 meeting are June 12-14, although there was some discussion about moving the meeting to a different time of year or combining a future meeting with NNGA.

Silent Auction

Next year, the silent auction at the

annual meeting will be promoted in the registration materials and members will be encouraged to bring items for the auction. It is an easy and cost-effective way to raise extra money for the organization.

Change in Board of Directors

Sandy Bole has stepped down from the board after many years of service. Many thanks to Sandy. Since Sandy is from Oregon, we wanted to add a new director from the Northwest region. Steve Jones, a long-standing CGA member from Selah, Washington was solicited and has agreed to serve on the board.

Newsletter

The editor is always looking for articles and article ideas for the newsletter. A suggestion was made to add a listing of upcoming events of interest to chestnut growers in the newsletter. Send any article ideas or notices of upcoming events to the editor at chestnutgrowersofamerica@gmail.com. 🍓

Hemming's Chinese Chestnuts: A Treasure Trove of Data from 90-year-old Trees

By Sandra L. Anagnostakis, Emeritus, The Connecticut Agricultural Experiment Station | sandra.anagnostakis@po.state.ct.us

Ernest Samuel Hemming of the Eastern Shore Nursery in Easton, MD planted Chinese chestnuts in 1930. He got them as seedlings from the U.S.D.A. Plant Introduction Station in Bell, MD. The seed was from a 1926 collection from northern China, known as PI #70314. Easton is in Zone 0, with soil described as "clay loam", and temperatures can go down to -5°F in the winters. He planted the trees in a single row, north to south, so that they all got the same amount of morning and afternoon sun.

Sam paid his kids \$0.05 a pound to collect the nuts, and his son Mike told me that they had no trouble telling which nuts came from which tree because they were all different. Since Sam had an inquiring mind, he kept track of the yield of each tree, and reported it to the NNGA from time to time. You will find his notes in many of their previous Annual Reports. It is rare that we have data to show how Chinese chestnut trees produce, year after year, and how well they survive in what is probably an ideal climate for them.

Sam died in 1986, but Mike Hemming still runs the nursery, and met me there on



Hemming Tree #12.

September 13, 1998 to talk about his father and show me the trees. I talked to Mike again in 2018, and he told me that there were 10 trees still alive, now 90 years old. I photographed the surviving trees in 1998, and below is their description.

1. At the south end of the row is tree #6, which has a strong central leader.
2. Next are trees #7 and #8, which have small crowns, and had a lot of damage from the big ice storm in 1993; #8 had a heavy crop of burs in spite of this.
3. #9 had ripe nuts dropping already (13 Sept.), and was the only tree that did.
4. #10 is a rather small tree.
5. #11 is next to the farm stand and has light colored leaves and looks in poor condition.
6. Then #12, which is my personal favorite. It has a round crown, dark leaves, and very good chestnut blight resistance.
7. #13 has a strong central leader, dark leaves, and little chestnut blight.
8. #14 has a very thin crown and looks in poor condition.
9. #15 has one dead branch, lots of chestnut blight cankers, and yellow leaves all over.
10. #16 at the North end of the row has a thin crown and dark leaves but very few burs.

Figure 1 shows rainfall on a graph of average yield during the early collections, so that you can see that there is not a lot of effect. After 1974 the trees were irrigated. Figure 2 has the number of pounds from trees 10 and 12 through the years of Sam's data. Figure 3 shows the average weight per nut of samples from each tree that Mike Hemming sent me in October 1998.

I hope that all of Sam's descendants realize what a treasure trove of information Sam left for us. Perhaps this will inspire others to collect data on their trees and their yields for our next generation of nut growers. 🍂

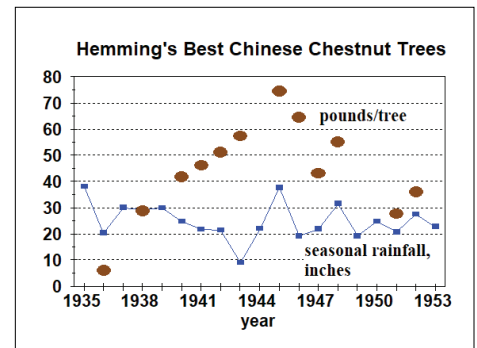


Figure 1. Rainfall and average yield during the early periods of data collection.

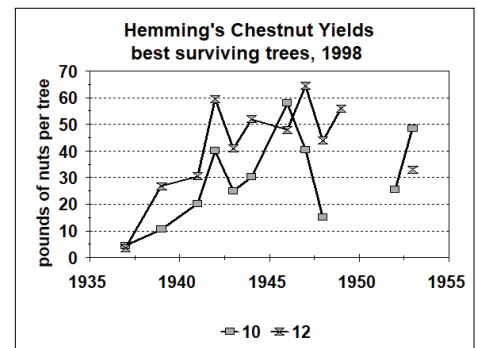


Figure 2. Weight of the nuts from Hemming's two trees (tree #10 and tree #12) for the early years when nuts were collected and weighed. Both of these trees were still alive in 2018.

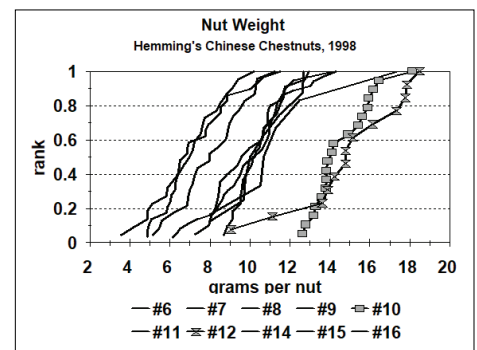


Figure 3. Nuts collected in 1998 from Hemming's 11 surviving Chinese chestnut trees were weighed and "ranked." For instance, if 20% of a lot weighed six grams, the graph point is at rank 0.2 and grams 6. Ranking allows us to compare lots of seed when they contain different numbers. Two lots were rather small (#14 and #15), one intermediate (#11), five rather large (#6, #7, #8, #9, #16) and two outstanding (#10 with square points and #12 with double-triangle points on the graph).

Continued from pages 4-5...

Table 2. Total acres planted in chestnuts and number of acres for commercial production.

	2018-2019	2017-2018	2016-2017	2015-2016
Total acres planted in chestnuts	824 ac (19 ac/respondent)	663 ac (15 ac/respondent)	554 ac (17 ac/respondent)	655 ac (12 ac/respondent)
Commercial production	397 ac (9 ac/respondent)	239 ac (6 ac/respondent)	279 ac (8 ac/respondent)	384 ac (6 ac/respondent)

Table 4. Chestnut prices at different market outlets.

Outlet	Price Range			
	2018-2019	2017-2018	2016-2017	2015-2016
Marketing Cooperative	\$1.60-\$2.80	\$1.50-\$4.50	\$1.00-\$3.75	\$1.90-\$4.00
Farmers Market	\$2.00-\$6.75	\$4.00-\$6.00	\$5.50-\$7.00	\$2.00-\$7.00
Restaurants/Chefs	\$3.50-\$5.50	\$3.50	\$5.50	\$3.50-\$5.50
Distributor/Broker	\$2.85-\$5.50	\$3.50-\$4.10	\$1.00	\$0.75-\$3.25
Health & Natural Food Store	\$4.00-\$4.60	\$2.25-\$5.75	\$4.65	\$4.25
Grocery Store	\$3.10-\$6.00	\$3.25-\$4.10	\$1.00	\$2.00-\$6.00
Wholesaler	\$2.00-\$7.00	\$3.50-\$4.00	\$1.82-\$3.81	\$1.00-\$5.80
Online, direct to consumer	\$5.00-\$6.75	\$5.50-\$8.00	\$3.50-\$8.40	\$3.50-\$6.85
On-farm Sales	\$1.00-\$6.50	\$2.00-\$8.00	\$2.50-\$8.40	\$2.00-\$7.00

Table 3. Respondents' plans on expanding their orchards or not.

	2018-2019	2018-2019 (Co-op, N=9)	2017-2018	2016-2017	2015-2016
Yes	40%	44%	39%	45%	43%
No	60%	56%	61%	55%	57%
New Acres	236	27	157	66	167
New Trees	10,740	3,050	15,000	3,490	8,127

2017 USDA Census Data. See more tables posted on the member page of the CGA website. "D"=Withheld to avoid disclosing data for individual farms.

Table 31. Fruits and Nuts: 2017 and 2012 (continued)

[For meaning of abbreviations and symbols, see introductory text.]

Geographic area	Total		Bearing age acres		Nonbearing age acres	
	Farms	Acres	Farms	Acres	Farms	Acres
CHESTNUTS						
United States Total						
United States.....2017	1,587	4,228	841	2,185	975	2,043
.....2012	919	3,784	591	2,406	526	1,378
States, 2017						
Alabama.....	34	48	10	(D)	24	(D)
Arkansas.....	24	20	5	(D)	22	(D)
California.....	88	370	72	326	25	44
Connecticut.....	22	16	9	(D)	18	(D)
Florida.....	115	323	94	277	44	45
Georgia.....	29	98	13	51	21	47
Idaho.....	6	(D)	3	(D)	3	(D)
Illinois.....	42	111	25	(D)	24	(D)
Indiana.....	30	22	17	11	17	11
Iowa.....	68	333	37	135	50	198
Kansas.....	13	40	10	38	4	3
Kentucky.....	40	69	17	(D)	30	(D)
Louisiana.....	7	9	3	2	4	7
Maine.....	6	20	6	(D)	(D)	(D)
Maryland.....	20	23	6	(D)	14	(D)
Massachusetts.....	10	7	9	(D)	3	(D)
Michigan.....	143	675	70	360	94	316
Minnesota.....	8	(D)	1	(D)	8	4
Mississippi.....	23	49	3	2	21	47
Missouri.....	59	143	28	(D)	44	(D)
Montana.....	2	(D)	-	-	2	(D)
Nebraska.....	1	(D)	1	(D)	-	-
New Hampshire.....	6	(D)	6	(D)	-	-
New Jersey.....	26	65	16	32	15	33
New Mexico.....	13	2	3	(D)	13	(D)
New York.....	59	145	33	38	36	107
North Carolina.....	69	45	30	(D)	43	(D)
North Dakota.....	1	(D)	1	(D)	1	(D)
Ohio.....	75	332	40	163	47	170
Oklahoma.....	11	(D)	-	-	11	(D)
Oregon.....	48	202	41	140	14	62
Pennsylvania.....	131	157	88	71	58	86
Rhode Island.....	3	1	3	1	-	-
South Carolina.....	38	58	15	32	30	26
South Dakota.....	1	(D)	-	-	1	(D)
Tennessee.....	83	110	25	27	62	84
Texas.....	22	84	11	10	17	75
Utah.....	2	(D)	-	-	2	(D)
Vermont.....	17	11	4	2	17	9
Virginia.....	62	299	24	154	48	146
Washington.....	51	76	31	54	29	22
West Virginia.....	50	153	29	21	30	132
Wisconsin.....	29	31	5	(D)	26	(D)

AIMS Project Collection Protocol

To send chestnut tree samples to Dr. Jeanne Romero-Severson for analysis in as part of the AIMS project, please refer to the following protocol. A list of samples already in the queue and those in storage is available on the members-only page of the CGA website. If you would like to see certain samples prioritized for genetic analysis, please let Jeanne know by sending an email to jromeros@nd.edu.

Tissue types

Twigs

Twigs are our standard tissue type. Collect 4-5 undamaged living twigs no larger than a standard-sized pencil in diameter, each 4-6 inches long. Twigs suitable for scion wood or slightly smaller are suitable for DNA extraction. The best time for twig harvest is when the tree is fully dormant, but spring and summer twigs are also good. Autumn twigs are the least desirable.

Leaves

Collect 2-5 undamaged, intact, fully expanded leaves. Leaves may be harvested from late spring until the end of July. Do not send the tiny, unexpanded leaves of early spring or any autumn leaves *even if they are green*.

Packaging

Package twigs in individual zip lock bags (one bag per tree) with the ID marked on the outside of the bag and on a slip of paper inside the bag. The ID you give the tree will be recorded in our database so please print in neat block letters. Twig samples from the same tree can go into the same sample bag. *Do not send both twigs and leaves unless we have requested both.*

Storage

Twigs will remain good for a week or two if kept refrigerated. Never freeze twigs. After two weeks, the DNA quality can deteriorate if the samples are stored in

a portable cooler or small refrigerator. If we receive twigs refrigerated longer than two weeks, we will test a few samples to check DNA quality. Mostly dead or completely dead twigs have DNA that is broken into tiny pieces too small to genotype using standard methods. Leaves need to be shipped within a few days of harvest. Same day is best if possible.

Shipping

Include a bill of lading with the shipment summarizing what you know about the samples: GPS location, suspected species and any other information you would like to include. **Send this as an email attachment as well (see address below).** Package all the bags and the bill of lading in a Styrofoam or other insulated box with one or two frozen cold packs, **not loose ice**. When the weather is warmer than 50°F during the day, please do not ship by 2-day mail. Boxes in the back of a delivery truck can quickly heat to cambium-killing temperatures. We will return your containers and cold packs if you request it. If the day high temperature is below 40°F when you ship, a USPS un-insulated box will do if you include a small frozen ice pack wrapped in newspaper and the twigs in their Ziploc bags. Pack snugly and send by next day mail. Ship on Sunday through Wednesday. Do not ship on Thursday or Friday. Ship to:

Megan Reid
Lab Technician
Department of Biological Sciences
320 Galvin Life Science Bldg
Notre Dame, IN 46556
Phone: 574-631-4019

Please send email to mreid5@nd.edu when you send the shipment. Include the tracking number *and a spreadsheet listing the sample ID* and the other information.

Upcoming Chestnut Events

Northern Nut Growers Assoc. & North American Fruit Explorers Annual Meeting

July 28 - 31, 2019 | NAFEX / NNGA | Graduate Hotel, Iowa City, IA

The joint annual meeting of the Northern Nut Growers Association and North American Fruit Explorers is open to all people with an interest in nut and fruit trees. This multi-day event includes technical sessions, field tours, an exhibit hall, and many networking opportunities.

More information and registration at <https://nutgrowing.org/nnga-2019-annual-conference/>.

Washington Chestnut Company

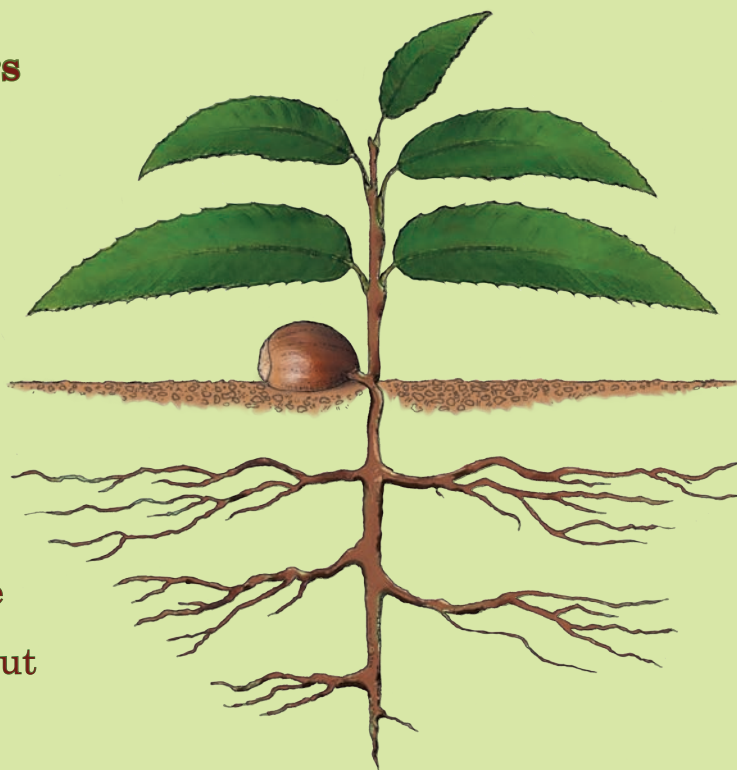


Quality Chestnut Trees from a Reliable Source!

Washington Chestnut Company has become an industry leader in the propagation of chestnut trees. The chestnut trees we offer are grown in the Pacific Northwest, free of exposure to chestnut blight and gall wasps.

Available Cultivars

Colossal
Bouche de Betizac
Prococe Migoule
Maraval
Marsol
Marigoule
Marrisard
Bisalta #2
Bisalta #3
Belle Epine
Gillet
Szego
Regis Montis
Regina Montis
Marrone di Comballe
Marrone di Marradi
Pure American Chestnut
Bergantz
...and more!



Our web site has full descriptions of each cultivar and lots of help with growing chestnut trees.

www.WashingtonChestnut.com

Washington Chestnut Company
6160 Everson Goshen Rd., Everson, WA 98247
Phone (360) 966-7158



Chestnut Growers of America
 16 Pond Road
 Deering, NH 03244

THE CHESTNUT GROWER

July 2019



Our Nuts are Bigger!



DUNSTAN CHESTNUTS™

- Proven growth and production throughout the U.S. for decades
- Completely blight resistant
- Large, sweet, easy to peel nuts, better tasting than European hybrids

www.chestnuthilltreefarm.com
 1-800-669-2067

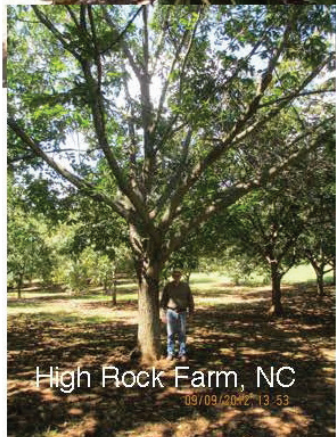
email: chestnuthilltreefarm@gmail.com



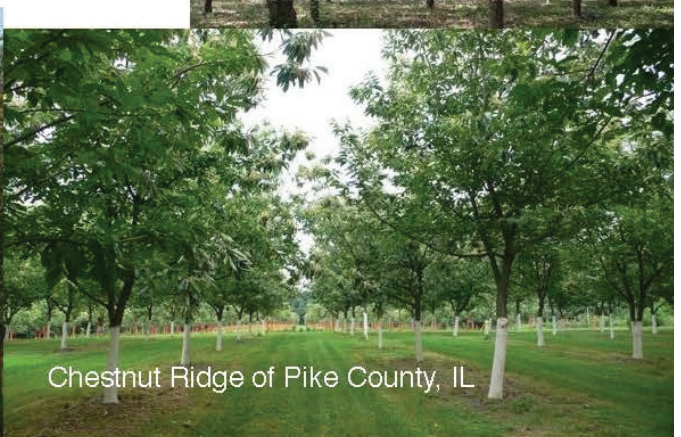
Wilson Orchards, VA



Delmarvelous Orchards, DE



High Rock Farm, NC
09/09/2017 13:53



Chestnut Ridge of Pike County, IL