

Harvesting Chestnuts at Chestnut Charlie's

by Debbie Milks
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As I write this article we at Chestnut Charlie's are going through our annual trauma over recruiting and ensuring that we have enough crew for this year's harvest. This annual anxiety begs the question "Why hand harvest?

Why not use a mechanical option?"

Since every orchard situation is in some way unique having variations of size, site, location, cultivars, growing practices, marketing and grower's motivation, the answer is individual.

common the critical requirement of proximity to labor; in Amish country (Bob and Greg) or in wine country (Harvey) or in our case on the doorstep of a college/agricultural community. Before we go into the "how" for a manual harvest, we'll explain a bit



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We talked to Greg Miller of Empire Chestnuts, Bob Stehle of Wintergreen Tree Farm and Harvey Correia of Correia Chestnut Farm, all substantial operations which have hand harvested for many years. We have in

more about the "why" at our orchard.

The mechanical harvester challenge: Chestnut Charlie's is 20 acres of mixed plantings---primarily chestnut, but with other nut and fruit trees

See *Chestnut Charlie's*, p. 4



When you receive this newsletter many of you will have been harvesting chestnuts or maybe even completed the harvest. I hope your chestnut harvest is good this year and you are enjoying the fall season.

My message this time is to say thank you to the person that keeps CGA together as an organization. Chestnut Growers of America has been very fortunate to have an excellent Editor and Webmaster as Carolyn Young. She has single-handedly made our CGA Website an outstanding place for information about chestnuts. Carolyn has been and continues to be the best Editor for the CGA Newsletter that makes our organization publication the best. Each quarterly newsletter brings important ar-

ticles on chestnuts for the CGA members that she puts together for the chestnut growers' benefit.

A message to our CGA Board was received recently from Carolyn that she will retire with the April issue from her duties as Editor and Webmaster. As members of Chestnut Growers of America, is there anyone who would be interested in stepping into either the Editor or the Webmaster positions? We are looking for individuals who would like to do either position and could start interning with Carolyn over the next few months. We really need two people to replace one member who has done so much for our organization. Please send an email to me or Carolyn if you are interested in helping CGA.

I think we all owe Carolyn a debt of gratitude for all the hard work she has done to communicate to our chestnut grower members. She has developed and maintained an excellent website for all the members to have access to a wealth of information on chestnuts. Carolyn has consistently put together a quality newsletter every three months that we can all be proud of for our organization.

Remember the purpose of CGA 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.

I hope you all have a plentiful harvest in the fall 2015 and wonderful holiday season and many chestnut roastings.

Roger R. Blackwell

I must admit that when I started the newsletter back in 1999 I had ulterior motives. Ray and I were total novices in chestnuts and had no background in agriculture whatsoever. The six degrees we held were worthless here. But I had edited a magazine for a non-profit for a few years so I knew how to put a publication together. That publication was 88 - 100 pages bi-monthly. Doing a little quarterly newsletter seemed like a piece of cake in comparison. What it did was give me an excuse to ask every dumb question in the book about chestnuts to every grower/expert out there. And you know it's easier for a woman to ask dumb questions and get by with it than it is for a man. (Sorry gents!) One of my careers was teaching so passing on info is part of my DNA.

When asked how we were going to sell our chestnuts from our orchard I said, "On the internet, of course" when that wasn't being done. They looked at us like we had three heads. When I put our first site up I realized that CGA needed a site as well. Again, it was a way to pass on information. And so it went up early on.

I revised the CGA site to accommodate responsive design last year. It now accommodates photos and a short story about all the advertisers and it has well over 300 links to resources of use to growers. My disappointment is that **YOU** aren't using it. Only 39 members have ever even looked at it once.

Now it's time to pass the torch. If you're interested send me an email.

Carolyn

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Editorial Opinion

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The Editor reserves the right to reject or edit all material submitted for publication.

Crossing Chestnuts

Sandra Anagnostakis

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All of the species of the genus *Castanea* will cross with each other (see “Key”referenced at the end). This goes against all the rules that we were taught about what defines a species, but Van Fleet showed it to be true early in the 1900’s, and Richard Jaynes proved it in his doctoral thesis work in 1961. Some crosses work better than others, some result in offspring that are male sterile (form catkins that don’t bloom), but all possible hybrids have been made.

Amy Miller with her mother Dianne Dowd Miller and Paula Pijut published a paper detailing the embryology of chestnuts in the 103rd NNGA Annual Report (#3, September 2013). The female flowers look like little pineapples,



Arrow points to female flower.



Most male catkins bloom before females are receptive.

Each female flower has three ovaries each with 12-18 ovules. The ovaries have styles which stick out the top of the flower, each with a sticky stigma at the tip to capture pollen. Usually, three of the ovules will be fertilized by a

Cont’d on p. 4



Linda Gail Black

CGA has lost a valuable board member with the death of Linda Black, Aug. 3, 2015, after a year-long battle with pancreatic cancer.

Linda was born in Memphis, TN. She attended Western Illinois University in Macomb and received her bachelor’s degree from Quincy University, Quincy, IL. She and Dale were married in 1992.

Linda and Dale worked hard to establish their Chestnut Ridge of Pike County orchard in Rockport, IL, and it is truly a showpiece.

She had an unending smile and was always ready to take on a new task, whether it was in her community or in the orchard. She organized CGA’s annual meeting in 2011 and it was definitely a five star event.

Linda is survived by her husband, Dale, her mother, her son and three daughters.

Memorial donations may be made in her name to Cancer Centers of America at <http://www.cancercenter.com/community-and-support/>.

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LETTERS TO THE EDITOR

Dear Editor,

I noticed two things in the Summer 2015 news letter that I would like to comment on.

1] Mike Gold's interesting article about wide gross income variances. All he has to go on is what growers report. It's important to remember that great differences in acreage makes a great difference in income and combined with the fact that some growers might have a reluctance to report their actual income for various reasons. I have found that regional areas make a huge difference in prices that customers are willing and can pay for chestnut products. It is also noteworthy that the co-ops have the lowest price of any outlet. When you have a perishable product, growers are better off to sell before spoilage occurs.

2] In the ACF's article on pot starting of American chestnuts there should have been a notational warning about the use of vermiculite. Even though the closure of the Libby MT mine years ago that contained asbestos which caused mesothelioma, vermiculite dust still has an MSDS rating and is capable of causing respiratory irritation in certain cases. When recommending use of any product adequate references should be available.

Lee Williams

Crossing Chestnuts, cont'd from p. 3

pollen tube growing down the stigma, but occasionally more are fertilized, resulting in multiple nuts in the bur.

The male flowers are borne on catkins, and most of them bloom before the female flowers are receptive.

Hybrid trees with parents of two different species are often "male sterile." In this case, the catkins form but the male flowers never bloom to produce pollen.



To make crosses between desirable parent trees, we first locate female flowers, and remove the leaves and catkins around them. The flowers are then covered with white, waxed paper bags closed with twist ties to exclude unwanted pollen.

See ***Crossing Chestnuts***, p. 9

Chestnut Charlie's, from p. 1

scattered throughout. The chestnuts all started as seedlings and although many are now field grafted, the harvest schedule is all over the place. Our site is light river bottom soil which is either dusty or muddy. We planted clover for fertility and we make a practice of returning as much plant material to the soil as we can including grass cuttings, prunings and deadfall. For all these reasons, mechanical harvesting would not work well for us. We'd be beating up the soil and/or creating mud ruts if we were to run a harvester over the entire orchard on a daily basis. Also, a machine would sweep up pecans, sticks and walnuts. And Charlie dislikes spending time fixing broken machinery, a sentiment echoed by Greg and Harvey.

Our Location Advantage

Our orchard is located just 3 flat, bikeable miles from city hall in downtown Lawrence, Kansas near the University of Kansas. Although we are not in the migrant labor track and are remote from other orchards, our community has a strong interest in locally produced foods, supporting a number of market gardeners. So we draw from KU and our gardener friends. But we do not have a typical harvest helper. We employ families, folks with desk jobs, retirees, underemployed graduates, high school kids, professor's spouses and fundraiser groups (last year the Troop 60 Boy Scouts and the Capital City Crushers women's roller derby team) and one Kansas state senator. About 60% of our helpers return year to year.

How We Find, Pay and Retain Helpers

Our recruiting tools include notices in our local food coop newsletter.

ter and local growers website, retro tear off tab "help wanted" sheets posted on campus and around town, and word of mouth from former helpers and fellow farmers. We start with 40-50 on the list and as the list grows longer, we explain that we call for help on a first come basis. We match our employees' schedules with the harvest need, calling only enough people to walk and pick the entire orchard daily. Our helpers are exclusively part time, working no more than 4 hours a day 3 to 4 days a week. Those who are able and want more work will cycle through the washing and inspection shed so no one job becomes too boring or burdensome.

At the beginning of the harvest, we have an orientation for the new folks. We take about an hour and explain our harvest methods and philosophy as well as taking care of the logistics of scheduling and paperwork.

On the advice of a local labor attorney, we treat our workers as employees, not contractors. We pay by the pound with an increasing rate for more pounds picked. Really tough days when pickings are thin or the weather is brutal we will add a "hardship" bonus. Most workers accept a single check for the season, though we give interim advances if requested. We keep general track of hours just to ensure that we are covering at least minimum wage, but for most folks the average earnings are much higher. Harvey, Bob and Greg also pay by the pound, though payment practices vary. Bob pays daily in cash and provides a "bus" service to pick up the team. Harvey uses a crew boss so prepares a single check.

For the last several years we have provided a simple hot lunch (sometimes just beans and rice, nothing fancy) and we always have coffee,

tea, sodas and snack foods in our outdoor "Cafe Castagna". At the end of the season, we have a blow out harvest party and free gleaning for our helpers and their friends and family. We cook a lot of food and everyone gets chestnuts to use in a recipe for the harvest pot luck table.

Getting and keeping good help is a challenge in any work environment, but when you are offering only seasonal part time, no benefits work, there has to be some other motivation for folks to sign up and stay through to the end. What works? For some, the increasing pay rate and saving up for some special purpose. For others perhaps it is the sense of a team effort that we build with the orientation and lunch gatherings. For yet others the motivation of some individual goal; the row finished, the (personal) pounds lost, the teaching experience with the kids, the "more pounds picked than my brother". We offer all options!

All the Rules and Regs

Kansas makes it relatively easy to hire farm help. We are not required to get workman's compensation or unemployment insurance but we carry liability insurance. We collect I-9 forms and W4s and withhold taxes as required. Each worker must read and sign a "warning" disclosure sheet that explains what is expected of them and the natural hazards on the farm (bees, sharp burrs, poisonous mushrooms, ticks etc) as well as instructions in Good Agriculture Practices (GAP). Kids younger than 13 must have an adult to supervise in the field and no one under 16 is allowed in the inspection shed.

People Are More Fun Than Anybody

Of course dealing with workers is not all sweetness and light. Schedul-

ing takes a lot of time. We are disappointed when someone fails to show up or leaves early or picks for an hour then decides that is enough for the season. And cutting 50 paychecks and preparing the same number of W-2s is a pain. But our conversations with Harvey, Greg and Bob kept slipping into great anecdotes about our help and revealed the same satisfaction that we have working with people and handing out paychecks. Hiring helpers has resulted in a marketing bonus with our expanded community of chestnut enthusiasts as well as new friends and no end of stories.

Is a Manual Harvest Efficient and Cost Effective?

For us, yes. After subtracting the waste nuts and culls and adding payroll taxes, we pay about .75 cents a pound to collect the marketable nuts. This may sound high for harvest but we ask our workers to pick up everything, burrs and all nuts regardless of quality. We expect a thorough clean harvest will help prevent weevil infestation. The helpers tread lightly on the ground so we are able to harvest in the mud and don't have to deal with dust when it is dry. We don't have to spend time or effort preparing the orchard floor for a mechanical harvester.

It is hard for us to explain the "how" without the background of the "why", but we hope we've offered some ideas for others who are considering a manual harvest. You are welcome to write or call and we can provide a copy of our disclosure sheet and answer any questions you might have.





WANTED

Job 1: Editor of The Chestnut Grower

Requirements:

- Publish four newsletters a year to be mailed on or about Jan. 1, April 1, July 1, and Oct. 1*
- Responsible for having newsletters printed for those members who want publication in print*
- Responsible for mailing printed copies*
- Responsible for sending PDF version to those requesting online version using only the most recent version of the CGA database provided by the Secretary/Treasurer*
- Knowledge of and experience in using Adobe InDesign and Photoshop*
- Ability to seek out information of use and interest to chestnut growers*
- Responsible for getting copyright permission for reprints*
- Responsible for providing Webmaster with PDF version of each issue*
- Submit bills for expenses to Treasurer for reimbursement*

Job 2: CGA Webmaster

Requirements

- Ability to use Dreamweaver for site maintenance*
- Ability to use FTP to upload files*
- Knowledge of and experience in using HTML and Photoshop*
- Responsible for uploading new members to Authpro database for members only page*
- Responsible for deleting unpaid members from Authpro database*
- Responsible for maintaining all website pages*

Interested and have questions? Email Carolyn at Carolyn@ChestnutsOnLine.com

No questions and want to volunteer? Email one of your board members:

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Chestnut Weevil, a Potential Pest of Michigan Chestnuts

By Erin Lizotte
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The most important insect pest of chestnut trees in the central-eastern United States is the lesser chestnut weevil (*Curculio sayi*). Large chestnut weevil (*C. caryatrypes*) is also an important pest, but is less prevalent. These pests have not yet been a significant problem for Michigan producers, but as acreage expands in the state, growers need to be actively scouting for chestnut weevil. Large and lesser chestnut weevil are native weevils and are host-specific, only infesting tree species in the genus *Castanea* (American chestnut, Chinese chestnut, European chestnut and chinquapin). Lesser and large chestnut weevil both lay eggs on developing nuts and the larvae feed within the nut, compromising the kernel. If left unchecked, these weevils can infest and destroy the majority of nuts produced in an orchard. The natural range of these pests mirrors the natural range of American chestnut (*Castanea dentata*) in the Central and Eastern United States. When the American chestnut stands collapsed due to chestnut blight (*Cryphonectria parasitica*), the populations shrunk to small pockets of the United States where chestnuts are present. The prevalence of these pests in Michigan is unknown at this time, but weevil larvae have been found in chestnuts at harvest.

Lifecycle

Michigan producers have had very little experience with chestnut weevil and at this time no formal research has been done on the lifecycle of this pest in Michigan. However, based on research out of Kentucky and Missouri as well as the experience of Michigan growers, we can make some educated estimations about the chestnut weevil's lifecycles under Michigan conditions.

Lesser chestnut weevil adults likely emerge from the soil during two separate periods in Michigan, once in spring around bloom (May-June) and again in late summer and early fall just before burs open (September-October). Weevils that emerge in the spring can be observed feeding on catkins. When the catkins decline, the population disappears. It is unknown if these spring weevils return to the soil or move off to feed on other plants. In September-Fall 2015



Larger chestnut weevil is 3/8-inch long, the snout is 3/8 - 5/8-inch long. Photo credit Todd Leuty OMAFRA.

October, a second wave of lesser chestnut weevil emerge. As burs begin to open, the majority of egg-laying occurs for both the spring- and fall-emerging adult weevils. Eggs are typically deposited in the downy lining surrounding the nut and hatch in approximately 10 days, at which time the larvae feeds on the kernel and develops within the shell. After two to three weeks, larvae chew an exit hole in the nutshell and drop to the soil. The majority of the weevils will overwinter as larvae the first year, pupate in the soil the following fall and overwinter as adults. The total lifecycle is completed in two to three years.

Large chestnut weevil adults likely emerge in August or September under Michigan conditions and begin laying eggs in immature burs almost immediately after emergence (well before lesser chestnut weevil begin laying eggs). Eggs hatch in five to seven days and the larvae feed and develop within the nut for two to three

weeks before chewing a small exit hole and leaving the nut. The large chestnut weevil larvae usually exit the chestnut before the nuts drop to the ground and overwinter in the soil. Pupation and adult emergence takes place the following summer, a small population of larva may overwinter a second winter before pupation. The total lifecycle is completed in one to two years.

Identification and Detection

Lesser and large chestnut weevil both have robust bodies and are dark brown or tan with brown mottling or stripes. Lesser chestnut weevil is 1/4-inch in length, with a snout of equal or greater length. The body of the large chestnut weevil is 3/8-inch long, the snout is 3/8- to 5/8-inch long.

Scouting for chestnut weevils should begin just before bloom. Passive traps (circle traps on the trunk or pyramid traps, one per acre) can be used to capture ascend-

Continued on next page

Chestnut Weevil, *cont'd from previous page*
ing weevils; these traps should be set well before bloom occurs and checked twice a week. Scouting for weevils using a limb-tapping technique can also be done. Place a light-colored sheet under the limb you are sampling and tap the branch with a padded pole or stick. Jarring the branch causes the weevils to drop from the tree onto the sheet. Weevils “play dead” when disturbed, so don’t be fooled if they all appear dead; they will reanimate within a few seconds. Chestnut weevils are substantial in size and should be easily visible if present. Growers should sample at least 10 branches per acre. Scouting locations should include both the edges and interior of orchards as well as any hotspots that are identified.

Management

There are chemical, cultural and postharvest treatments available to control chestnut weevils. Ideally, a combination of cultural and chemical management would control the pest and eliminate the need for postharvest treatment which can diminish quality and the marketable yield.

Sanitation is an important part of managing these pests. Collecting and destroying fallen nuts will remove developing larva from the orchard. Insecticide applications for control should target the two later windows of potential adult activity: August-September (large chestnut weevil adult emergence) and September-October (lesser chestnut weevil fall adult emergence). Growers are cautioned against applying pesticides during adult activ-

ity in May-June (lesser chestnut weevil spring adult emergence) as bees are often foraging in the orchard at that time. Carbaryl (Carbaryl 4L, Sevin 4F, Sevin 80S, Sevin XLR Plus, Sevin SL) is the only insecticide labeled against chestnut weevil. The manufacturer recommends making four weekly applications beginning in late July to control adults when the burs are present and vulnerable. However, based on the development of chestnuts under Michigan conditions, growers may want to wait until August

to begin applications. Growers will have to carefully budget the three to four applications of carbaryl available as the period of bur exposure is long. Applications should only be made in response to positive identification of the weevil with regular scouting.

Thorough and frequent scouting is essential for optimal management, particularly with the lack of information regarding chestnut weevil behavior and prevalence in Michigan. Well-timed applications, good sanitation practices and scouting will be the key to successful chestnut weevil management in Michigan.

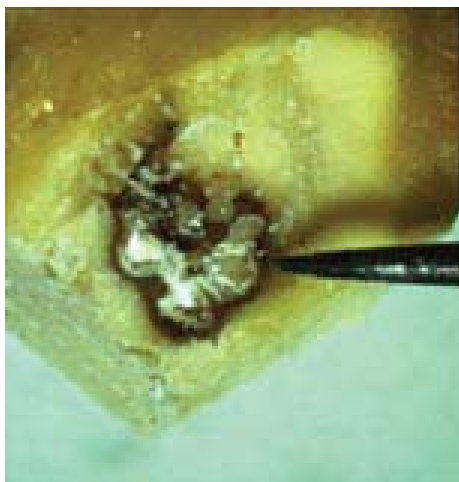


Lesser chestnut weevil are 1/4-inch in length and appear orange to brown in color with a snout longer than the length of their body.

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Left: Lesser chestnut weevil eggs.



Right: Chestnut weevil larva emerging from the chestnut shell

NOTICE

The January issue of *The Chestnut Grower* will not be mailed until Jan. 10. (Your Editor will be lollygagging in Africa.)



I always put the “used” catkin into the bag before replacing it over the flowers so that the earwigs that inevitably inhabit the bag can carry some extra pollen to the flowers.

Bags are replaced, and the “names” of the parents of the cross written near the twist-tie



We always leave a few female flowers open on the tree, and when the catkins connected to those female flowers start to bloom we know that the female flowers are receptive.

We can then remove the bags and brush bloomed catkins across the stigmas, or brush on collected anthers with a soft paint brush.

When using catkins, end. Writing near the closed end of the bag is chancy, as the bags often split as the burs mature.

If there is a threat of severe weather, we cover the branches with crosses with “onion bags.”

Another advantage of onion bags is that they will hold the nuts that ripen, fall out of the burs, and fall out of the split bags!

Knowing both the mother and father of each nut allows us to make decisions about the value of various combinations, and we hope that new combinations will produce even better cultivars of chestnut adapted to our growing conditions. A



key to the species of chestnut can be found at: <http://www.ct.gov/caes/chestnutkey>



Chestnut, Apple & Fennel Pork Pies

Filling

7 oz. course chopped pork
2 oz. course chopped smoked back bacon
1 small apple, chopped
3.5 oz. chopped cooked chestnuts
½ tsp nutmeg
1 tsp toasted fennel seeds
A few fresh sage leaves, chopped
Salt & Pepper

Hot Water Pastry

8 oz. plain flour
Pinch of salt
2.5 oz. butter
2 oz. milk
2 oz. water
Egg to glaze

Pre-heat the oven to 350°. Mix all the filling ingredients together and season well with the salt and pepper.

Make the pastry. Place the butter, milk and water in a pan, or microwavable glass bowl, and heat until the butter has melted and all is well combined. Stir in the flour and salt with a spoon or knife, then remove from the bowl and knead until the dough stays together. Return to the bowl and cover with cling film to keep in the heat.

Divide 2/3 of the dough into six pieces. Roll into balls and then flatten into the muffin tin, overlapping the edges. Using a rolling pin on a floured surface can help with this process.

Pack each dough case firmly with the filling, piling it high.

With the remaining dough make six lids for the pies.

Use the beaten egg to brush around the edge of the lids and place on top of the pies, crimping to seal.

Brush with beaten egg and prick the pies to allow the steam to escape.

Place the muffin tin on a baking tray and put in the oven for 30 mins. After this time, carefully, (they're hot), remove the pies from the case and place them directly onto the tray. There may be some spilled fat/juices on the baking tray that you should mop up prior to doing this.

Removing them from the case is important as this allows the outside of the pies to brown and crisp up.

Put in the oven for another 15 – 20 minutes. Allow to cool slightly and serve, warm or cold. *Recipe source unknown.*



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