



Growing Chestnuts in Cuneo

Adapted from a 2021 presentation by Guido Bassi, Agronomist and Orchardist, Cuneo, Italy

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**August 7-10, 2022
Reading, Pennsylvania**

Where is Cuneo?

Cuneo is in the northwestern corner of Italy, very close to France (Figure 1, page 8). Cuneo is a small town of about 57,000 people. It is mostly high mountains and hills, with vineyards that are home to some of the most famous wines in the world. The area is made up of mountains (about 50%), hills (about 25%), and high plateaus (about 25%). It has plains soil, but we are 500m high, so it is unlike other parts of Italy which are closer to sea level.

Cuneo's Climate and Agriculture

The climate determines the agriculture of any region. The climate in Cuneo is cold – it is almost an Arctic climate because of the mountains, which are very close to the town and fields. This does bring some problems. There is a lot of snow, a lot of

rain, mostly in spring, and in summer, hail and storms are very common.

Because of the climate, our main activity is livestock farming. The fields are mostly occupied by corn, cultivated lawns, forests, wheat, and vineyards. Hazelnut production is increasing. Chestnuts now occupy 13.6% of total farms and 2% of total cultivated surface. That number was much larger 50 years ago, but chestnut has lost importance since then. We now have about 20,000 ha of chestnuts. It used to be 60,000 ha – about a third of what it used to be.

Chestnut Production in Cuneo

Cuneo has 12% of the total cultivated chestnut surface in Italy. Actual nut production in Cuneo is about 2,000 metric tons (2,200 tons). We have lost about 90% of chestnut production over the

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THE CHESTNUT GROWER

Spring 2022

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

<i>President</i>	Roger Blackwell Milford, MI	(810) 923-2954 rblackwel@comcast.net
<i>Vice President</i>	<i>Currently Vacant</i>	
<i>Secretary/Treasurer</i>	Jack Kirk Richmond, VA	(804) 357-1137 jackschestnuts@gmail.com
<i>Director</i>	Sara Fitzsimmons University Park, PA	(814) 863-7192 sff3@psu.edu
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<i>Director</i>	Luke Wilson Gridley, CA	(530) 370-5533

Committees

<i>Editor/Webmaster</i>	Rita Blythe	chestnutgrowersofamerica@gmail.com
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Annual Membership Dues

Single membership, \$45; Household membership, \$55; Associate membership, \$60. Members receive *The Chestnut Grower* quarterly. Emailed newsletters are included. Mailed newsletters are an additional \$5 per year. A \$10 late fee is applied to membership renewals submitted after April 1.

Advertising Rates

Full page	\$20.00
Half page	\$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.

Editorial Opinion

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Message from CGA President Roger Blackwell, Chestnut Grower



Hello Chestnut Growers of America!

I hope you are all safe and well. Harrah, our organization will be having the Annual Membership Meeting in August this year in-person in Pennsylvania. This year's meeting will be a joint meeting

with Northern Nut Growers Association (NNGA). Our Boards for each group have agreed to have this joint meeting which will save money and time with both meetings held together at the same place. Obviously, we have information to share about chestnuts together.

CGA Board Member Sara Fitzsimmons, who is our host for the meeting in Pennsylvania, has collaborated with members of NNGA to coordinate an exciting and packed meeting for all of us from Sunday, August 7 through Wednesday, August 10th, 2022, at the Berks Campus at Penn State. Between the two groups you will find a diverse group of speakers to educate and inform about chestnuts across the country and what is happening in Pennsylvania with chestnuts. This newsletter has all the information about the annual membership meeting and how to register for the meeting.

Please help Rita Blythe, CGA Editor, in future months with new articles for *The Chestnut Grower*. She welcomes any information that can be for the benefit of the members. Send your ideas and/or articles to her at chestnutgrowersofamerica@gmail.com.

Please see the list of CGA Directors in this issue and thank them for continuing for the next year on the CGA Board.

I am sure you all are looking forward to having an in-person meeting and seeing how everyone is doing.

Best regards,

A handwritten signature in blue ink that reads 'Roger Blackwell'.

Roger

Northern Nut Growers Association / Chestnut Growers of America

2022 Annual Conference / Meeting Highlights

OVERVIEW

The joint annual conference of the Northern Nut Growers Association and the Chestnut Growers of America will take place **August 7-10, 2022 on the Penn State Berks campus in Reading, Pennsylvania.** The campus is located on 258 acres next to Gring's Mill Recreation Area. It is an easy walk between the dorms, meal venues, and the meeting facilities. Parking is free at both the dorms and meeting site. For more information about the Berks campus visit berks.psu.edu/penn-state/penn-state-berks-glance. Reading is part of the Pennsylvania Dutch country (visitpaamericana.com). The conference is open to everyone with an interest in nut trees.

CONFERENCE SCHEDULE

Sunday, August 7th

Sunday includes the NNGA and CGA Board meetings. Conference attendees can pick up their registration packets after 2 pm. A welcome reception with hors d'oeuvres will be held that evening. The cost of the reception is included in the registration fee. Reception is followed by a member-sharing Show & Tell session. This ever-popular event will include presentations from individuals who have tried new equipment, new techniques, promising selections or cultivars, had some recent success, or failures. Attendees are encouraged to highlight their nut tree related innovations and information in quick 10-minute talks. If you are interested in presenting your success and/or failures, please sign up on the registration form to add your name and topic, or contact Jerry Henkin directly at 914-282-1371 or email sproutnut@aol.com.

Monday, August 8th

Monday will be the first day of technical presentations. An optional supper on the Berks campus will be offered for \$20 per person. Supper will be followed by the annual NNGA/CGA Auction that evening. Free, but bring your checkbook, cash, or credit card! The annual auction is a lively event to raise funds for our research grants. Auction items have included artwork, handmade donations, plant material, nut kernels, baked goods and/or gift certificates. Donations of above items are most welcome; this is an excellent way to advertise your product. Proceeds will be divided between NNGA and CGA. Members are welcome to bring homemade treats for the auction or to share during breaks. Please label your treats if they are nut, dairy, or gluten free.

Tuesday, August 9th

Tuesday will be the second day of presentations. The annual banquet will be that evening. The cost for the banquet is **\$30.00**. Crowning of the Big Nut will be part of the fun. The NNGA 30-minute business meeting will precede the banquet and will include the election and short updates on research projects, finances and membership.

Wednesday, August 10th

Wednesday will be an all-day field trip. The cost is **\$20.00** per person for snacks, drinks, and lunch and **\$30.00** per person for a seat on the bus. We encourage you to join us on the bus and avoid having to worry about traffic or getting lost. Estimated one-way drive time from PSU Berks campus is 1.5 to 2 hours! This is a good time to interact with fellow nut enthusiasts by riding the bus.

Tour options include either a tour of the Rutgers hazelnut plantings or tours of operating chestnut orchards and American chestnut plantings. Full descriptions can be found on the next page or on the website along with several post-conference tour options.

EXHIBITS

Exhibits will be in two designated rooms directly across from the main conference and meal sites. The rooms will be locked when not attended. Exhibit fees include one full registration or table rental with no staff.

MEALS AND LODGING

Sunday's welcome reception, Monday, Tuesday, and Wednesday's breakfast, and Monday and Tuesday's lunch are included in the registration fee. Other meals, including the banquet, are extra (see registration form for prices). All meals will be served on the Berks campus. There are numerous other restaurants in Reading (visitpaamericana.com/dining).

Penn State Berks dorms are within easy walking distance of the meeting site. and offer dorm-style lodging. There are both double- and single-occupancy rooms available. All options include basic bed linens, towels, and toiletries. All beds are twin bed types. These dorms have both Wi-Fi and air conditioning.

Alternative lodging near the Berks campus includes the Hampton Inn (610-374-8100), Homewood Suites (610-736-3100), and the French Creek State Park campground.

REGISTRATION

Registration is now open. **Register before June 1 to take advantage of an "early bird" discount.** Registration selections include hors d'oeuvres during the welcome session on Sunday; refreshments and snacks during the technical sessions, breakfast on Monday, Tuesday, and Wednesday; and lunch on Monday and Tuesday.

You can register online using PayPal (with a credit card option) at www.nutgrowing.org. You can also call in the registration form to Sara Fern Fitzsimmons (814-404-6013; sara@acf.org) or Debbie Milks (785-766-8849; NNGACGA2022@gmail.com) and then send a check or money order made payable to "NNGA or Northern Nut Growers Association" to Debbie Milks, PO Box 1166, Lawrence, KS 66044.

CONFERENCE FIELD TOUR OPTIONS

Thursday August 11, 2022

Tour Option #1: Rutgers Hazelnut Breeding Tour

Rutgers Horticulture Farm 3, 67 Ryders Lane, East Brunswick, NJ
Estimated one-way drive time from PSU Berks: 2 hours

On this tour you will get to see our hazelnut germplasm collection and many acres of breeding and selection orchards of various ages, including both European hazelnuts, wild American hazelnuts, and "hybrid" hazelnuts from our work with the Hybrid Hazelnut Consortium. We will also tour replicated yield trials where you can see up close the new releases, such as 'Raritan', 'Somerset', and 'OSU 541.147' "The Beast", as well as new selections in the breeding pipeline. Finally, we will demonstrate various harvesting and nut processing machines including the Hasatsan 2200 hazelnut vacuum harvester imported from Turkey. For more information contact Tom Molnar (thomas.molnar@rutgers.edu) or visit breeding.rutgers.edu/hazelnut or agproducts.rutgers.edu/hazelnuts.

Tour Option #2: Small-scale Chestnut Farming and Hershey Nut Tree Replanting

Estimated one-way drive time from PSU Berks: 1.5 hours

Stop #1: Castanea Farms, LLC is owned and operated by Jen and Rick Hartlieb. At this site we will focus primarily on the small-scale production of chestnuts with a focus on post-harvest processing. This tour will include those facilities as well as a mobile chestnut harvesting and processing unit designed and constructed by Stephen Hoy as part of a SARE grant (ecosystems.psu.edu/research/chestnut/breeding/pollination/mobile-sorter). Adjacent to the original log house is the second-largest Japanese Chestnut in PA.

Stop #2: Hershey Nursery 100th Anniversary Replanting at Louise W. Moore Park, Downingtown, PA. In 1921, John Hershey started a tree crop nursery in Downingtown. Until his death in the 1960s, he selected and propagated the best varieties and cultivars of nut and fruit trees at what was considered "America's No. 1 Tree Crop Farm". Unfortunately, over 50% of his trees have been lost to development. In October 2021, the 100th Anniversary of the Hershey Nursery, 54 trees, all of grafted Hershey stock, were planted in Northampton County. Louise W. Moore Park is now an active conservation site where the genetics of Hershey's trees are protected and preserved.

POST-CONFERENCE TOUR OPTIONS

Thursday August 11, 2022

Tour Option #3: American Chestnut Germplasm Conservation Orchard

Edge of the Wood Native Plant Nursery, 2415 Route 100, Orefield, PA

This 100 tree planting of wild-type American chestnuts was first established in 2012. These trees represent various genetic backgrounds of American chestnuts from around Pennsylvania and New York, and are used for both breeding and educational activities (edgeofthewoodsnursery.com or call 610-395-2570). This commercial nursery has an excellent inventory of native plants for sale.

Tour Option #4: American Chestnut Reintroduction Plot

Trexler Nature Preserve, Schnecksville, PA 40.664422, -75.623048

This 1000 tree planting of advanced hybrid American chestnuts was established in 2012 to observe various methods of reintroduction into an old-field environment (lehighcounty.org/departments/parks-and-recreation/our-parks/trexler-preserve). The site is fully-fenced along a one-way road through the Trexler Nature Preserve. To get to the chestnuts, you will drive approximately 2 miles from the Lehigh Valley Zoo. Along the way, you will pass the Zoo, ford the Jordan River, and see Rocky Mountain Elk and bison. The chestnut planting will be on your left.

Tour Option #5: The Rodale Institute

611 Siegfriedale Road, Kutztown, PA 19530

The Rodale Institute is growing the regenerative organic movement through research, farmer training, and consumer education (see rodaleinstitute.org/ and <https://rodaleinstitute.org/visit/self-guided-walking-tours>).

TECHNICAL PROGRAM AND PRESENTERS

The technical and scientific presentations will take place on Monday and Tuesday. The following experienced growers and scientists have volunteered to give presentations and answer questions:

- **Roger Blackwell**, The Chestnut Growers of America: Past, Present, and Future
- **Ron Revord**, Characterizing Diversity in On-Farm Chestnut Selections for Phenotypic Traits
- **Jeanne Romero-Severson**, Discovery of Interspecific Ancestry in Elite Chestnut Germplasm
- **Thomas Molnar**, Exciting Progress Breeding Hybrid Hazelnuts: a Collaborative Project
- **Shawn Mehlenbacher**, Update on Breeding Hazelnuts Resistant to Eastern Filbert Blight
- **Ron Powell**, Renovating a Tired Pawpaw Planting: Starting Over
- **Erik Carlson**, Advancement in Chestnut Genetics and Biotechnology at SUNY-ESF
- **Louise Bugbee**, Rescuing the Future by Saving the Past: Preserving the Legacy of John Hershey
- **Bill Davison**, Chestnut Value Chain Development at the Savanna Institute
- **Greg Turner**, Chestnuts and the Endangered Allegheny Woodrat
- **John Kelsey**, Details of a 1935 Black Walnut Planting
- **Eric Cornell**, Historic Nut Tree Nurseries Throughout the Northeastern United States
- **Carl Albers**, The English Walnut Project of the New York Nut Growers Association
- **Ellie Watson**, Chestnut Brown Rot
- **Megan Chawner**, Food Safety Practices
- **Gordon Wilkinson**, Tale of Two Sites: Heartnut Performance

Lightening Talks: Short lightening talks are scheduled throughout the Monday and Tuesday's program. These talks are up to 5 minutes long to introduce yourself to the NNGA & CGA members letting them know what you grow, what problems you are having, or a new management practice your considering. NNGA hopes other members with similar issues and experiences will introduce themselves and share their experiences. PowerPoint presentations are strongly discouraged, but handouts to share are encouraged. Contact Jerry Henkin at sproutnut@aol.com or at 914-282-1371 to show your interest, suggest a title, and select a time.



2022 NNGA / CGA Meeting Registration Form



The 2022 Joint meeting of the Northern Nut Growers Association (NNGA) and the Chestnut Growers of America (CGA) will be held **Sunday, August 7 - Wednesday, August 10** at the **Penn State Berks Campus in Reading, PA.**

Please complete a separate registration for each meeting attendee.

Who is this registration for?

First Name: _____ Last Name: _____

Name as you'd like it to appear on your name tag: _____

Organization: _____

Email Address: _____ Phone Number: _____

City: _____ State/Province: _____ Country: _____

Registration Type

All registration selections include refreshments and snacks during the technical sessions, hors d'oeuvres during the welcome session on Sunday, breakfast on Monday, Tuesday, and Wednesday, and lunch on Monday and Tuesday. *Evening meals on Monday and Tuesday and field tour lunches on Wednesday are paid for separately.*

Member Registration \$135 Early Bird (before May 31) \$150 (June 1 or later)

Non-Member Registration \$175 Early Bird (before May 31) \$190 (June 1 or later)

Companion: Not attending technical sessions but joining in meals and social activities \$100

Virtual attendance for Monday and Tuesday sessions \$40

Exhibitor—Nonprofit \$135 Early Bird (before May 31) \$150 (June 1 or later)

Exhibitor—Commercial \$150 Early Bird (before May 31) \$165 (June 1 or later)

Display table only (no staffing at table, does not include meals) \$50

The registration fee for non-members includes a one year membership to the organization of your choice. **Which organization would you like to join?** Northern Nut Growers Association (NNGA) Chestnut Growers of America (CGA)

Member Sharing

Would you like to share your work or farm information with the group? Please contact Jerry Henkin at sproutnut@aol.com or 914-282-1371 with your topic to be included in the agenda.

Sunday—Member Sharing (10 minutes each, Powerpoints allowed)

Monday—Lightning Talk (5 minutes each, Powerpoints discouraged, but handouts are great!)

Tuesday—Lightning Talk (5 minutes each, Powerpoints discouraged, but handouts are great!)

Meals

Will you be joining us for dinner on Monday or Tuesday? \$20 Monday (Cafeteria-style dinner) \$30 Tuesday (Banquet dinner)

Would you like a boxed or catered lunch during Wednesday's field tour? \$20 I will not need these extra meals.

Which field tour options will you be selecting?

Option #1: Rutgers Hazelnut Breeding Tour \$0—I will carpool \$30—I would like a seat on the tour bus

Option #2: Small-scale Chestnut Farming/Hershey Nut Grove \$0—I will carpool \$30—I would like a seat in the van

Alas, I will not be joining in the field tours.

Dietary Restrictions

Please list any dietary needs or restrictions you have: _____



University Dorm Facilities

Penn State Berks will offer dorm-style lodging for this meeting. The following options include basic bed linens, towels, and toiletries. These dorms have both Wi-Fi and Air Conditioning. All beds are twin bed types. The dorms are within easy walking distance to all meeting spaces. There are both double-occupancy and single-occupancy rooms available. Parking is free at both the dorms and meeting site. Attendees may either walk or drive to all meeting facilities.

- \$40 per night: Double occupancy with a shared bathroom. For those requesting double-occupancy, we request that you specify your roommate. Your roommate will need to register on a separate form and pay their \$40 share of the room.
- \$65 per night: Single occupancy with a shared bathroom for the floor.
- \$75 per night: Single room with private bathroom. This bathroom is shared with up to four suites.
- \$0—I will find lodging elsewhere on my own.

If double occupancy, who is going to be your roommate? _____

On which nights will you require this room?

- Saturday Sunday Monday Tuesday Wednesday

As part of any extra funds that are raised as part of this meeting, would you like your funds to go toward either NNGA or CGA, or split proportionally between the two?

- NNGA CGA Split proportionally between both

As part of your registration, would you like to include a tax-deductible donation toward one of the organizations?

- \$10 \$25 \$50 No donation at this time

Payment

Registration Fee	\$ _____
Monday Dinner	\$ _____
Tuesday Banquet	\$ _____
Accommodations—# Nights _____ x Cost _____	\$ _____
Field Tour Total	\$ _____
Donation	\$ _____
Total Amount Due	\$ _____

Mail registration form and payment to: Deborah Milks, NNGA Treasurer, PO Box 1166, Lawrence, KS 66044

If you have questions or want to check on the cost or status of your registration, please call or email:

Sara Fern Fitzsimmons at 814-404-6013 or sara@acf.org -or- Debbie Milks at 785-766-8849 or NNGACGA2022@gmail.com

Please share your interests with us!

What is your principal background and interest in nut trees?

- Grower—Commercial Production Grower—Hobbyist
 Research—Academia, Natural Resources Consumer—Availability, marketing, nutrition, uses

Which tree crops are you most interested in? (Select up to three)

- Chestnuts Pecans Hickory Black Walnut
 Persian/English Walnut Butternut Heartnut Pawpaw and/or Persimmons

What nut culture topics most interest you? (Select up to three)

- Starting a new orchard—Site selection, site prep, layout Growing nut trees from seed
 Vegetative propagation Cultivar selection Pests & Diseases
 Orchard Management Harvest and post-harvest handling Marketing

Have you renewed your CGA membership?

Your 2022 membership dues are now past due. For members who have not yet renewed, you have two options:

Renew Online

Download a fillable form from the CGA website at www.chestnutgrowers.org/CGA_Membership_Application_fillable.pdf. The form has also been sent out to all members via email. Complete the form and email it to Jack Kirk, CGA secretary/treasurer, at jackschestnuts@gmail.com. You can then pay your dues through the CGA website by visiting www.chestnutgrowers.org/paydues.html. Please make sure you submit both your renewal application and payment at the same time!

~OR~

Renew by Mail

Fill out, detach, and return the membership renewal form included at the end of this issue. Send the form with a check made payable to Chestnut Growers of America, Inc. to Jack Kirk, 2300 Bryan Park Ave., Richmond, VA 23228.

Please note - If you are a new member who joined after August 1, 2021, your dues are already paid for 2022. Also, the \$10 late fee has been applied to renewals submitted after April 1.

Chicken with Chestnuts

1 3 lb chicken
3 qts water
3-4 scallions, cut to 1" lengths diagonally
1/2 c smoked ham, cut into thin strips
2-3 quarter-size slices fresh ginger
1 c roasted and shelled chestnuts
2 c chicken stock
2 Tbsp sherry

1. Cut chicken into serving pieces, and put into a pot with water. Bring to a boil and let boil for 1 minute; drain.
2. Put chicken pieces into a casserole with scallions, ham strips, ginger slices, and chestnuts. Heat chicken stock and sherry, bring to a boil, and pour over chicken.
3. Cover and place casserole over or in a pan of boiling water. Water should come 1/3 or 1/2 way up on the casserole. Adjust heat so water is simmering. Cook for 1 to 1 1/2 hours or until tender.
4. Season and serve with rice.

Flan aux Marrons (Baked Custard with Chestnuts)

1/2 lb fresh chestnuts
Pinch of salt
4 eggs
1/2 c sugar
2 c milk
1 Tbsp rum
For the caramel:
7 Tbsp sugar
1/4 c water

1. Make the caramel: In a heavy-based pot, heat the sugar in the water until dissolved, then boil steadily to a deep brown caramel. Immediately pour it into a cake pan, tilting the pan to coat the base and sides with a thin, even layer of caramel. Leave to cool and set.
2. Meanwhile, peel fresh, roasted, or microwaved chestnuts and simmer them in lightly salted water for 20-35 minutes or until tender. Drain fresh chestnuts thoroughly. Lightly crush the chestnuts but leave some pieces; the mixture should not be a puree. Set the oven at 350°.
3. Beat the eggs with the sugar and stir in the milk and rum. Pour the mixture into the caramel-coated pan and set the pan in a water bath. Bring the water just to a boil on top of the stove and bake in the heated oven for 10-15 minutes or until thickened but not set. Drop the chestnuts by the tablespoonful onto the flan mixture at approximately equal intervals. Continue to bake for another 25 minutes or until set. Remove from the water bath.
4. Unmold just before serving. Serve flan either hot or cold.

Monte Bianco (Molded Puree of Fresh Chestnuts)

4 lb fresh chestnuts
Salt
5 c milk
5 drops vanilla extract
1/2 light rum
2 Tbsp unsweetened cocoa powder
4 c sugar, plus 4 Tbsp
3 Tbsp sweet butter
2 c heavy cream
2 tsp confectioners sugar

Recipes from Mary Bergantz, shared by Neill Allen, Napa, CA. See The Chestnut Grower Fall 2021 for the story behind the recipes.

1. Soak chestnuts overnight in a large bowl of cold water. Bring a large pot of water to a boil, add salt to taste and the soaked chestnuts. Boil until the chestnuts are completely cooked, about 2 hours. Drain the chestnuts and peel while they are still hot. Remove outside hull and inside skin.
2. Put the milk in a large saucepan and add a pinch of salt and the peeled chestnuts. Place the pan over medium heat and simmer for about 25 minutes, stirring occasionally to be sure chestnuts do not stick to the pan. Remove from the heat and puree the chestnuts and milk in a food processor, or press through a food mill. Place in a large casserole. Add the vanilla extract, rum, cocoa powder, and 4 cups of sugar to the casserole. Bring to a simmer over low stirring constantly with a wooden spoon, mixing well. Then add the butter, still stirring, until a thick paste is formed. Remove the casserole from the heat and let cool at least 2 hours.
3. Lightly butter a 3 qt ring mold and pour in the chestnut paste. Smooth the surface with a rubber spatula, then wrap the mold in foil and refrigerate at least 4 hours.
4. When the mold is removed from the refrigerator, whip the heavy cream, adding the remaining 4 Tbsp sugar and confectioners sugar. Unmold the Monte Bianco onto a large serving platter. Arrange the whipped cream over the ring like snow-capped mountains.

Continued from Page 1...

past 70 years because people have left the mountainous area for cities and factories and because chestnut has lost importance in the economy of the region.

Italy mainly exports chestnuts to other European countries, such as Germany, Switzerland, and Austria. Exports have decreased 15-20% in the last 5 years, not because there is not enough demand, but because there are not enough chestnuts to export since production has fallen.

Chestnut imports to Italy have increased 35% in the last 5 years. Sources of imports are generally from Europe, many from Turkey. We also import chestnuts from Chile, where they grow a very good quality variety.

Chestnuts and Climate

Chestnuts are grown in temperate climates, but my opinion is that chestnut is a sub-tropical plant that needs warm climates. In Europe, chestnuts are grown in the warmest areas, such as around the Mediterranean Sea. In Italy, the best places to grow chestnut are in the southern part of the country. In northern Italy, chestnut does not produce well. The average production in the north is 200 kilo per ha, in the south it is 1200 kilo per ha, so there is a big difference there due to the climate.

One of the main problems we have in the cold mountain climate is frost damage in the spring (Figure 2), which happens every year. It is one of the main causes of death of the plants. We don't have too much trouble with *Phytophthora* because our soil is very light and sandy. Blight is an issue, but not too bad. Frost is our main problem, especially for new plantings. It can kill plants up to 7 or 8 years after planting. The plant in Figure 2 was 6 years old and killed by frost.



Figure 2. Frost damage.



Figure 1. Cuneo's location in Italy.

Chestnut Varieties Grown in Cuneo

In Cuneo we grow mostly *Castanea sativa*, at least in the traditional orchards. Almost all the new orchards are *crenata-sativa* hybrids (European-Japanese hybrids), mostly Bouche de Betizac. That could be a problem because in the next 20 years, the source of germplasm for chestnut will be the US. The US is doing a very good job creating new varieties; not many in Europe are doing that. Figure 3 shows the differences between species and varieties.

Selection of what local varieties to grow was based on one thing: resistance to harsh climate. Our main variety is Garrone Rosso. The only variety of Marrone we have in our area is Marrone di Chiusa Pesio (Figure 4). It has great taste, but there are only 120 plants total growing in our area. Belle Epine is used as a pollinizer. Bouche de Betizac is very productive – 7,000 kilo per ha; our goal is to reach 8,000. Marrone brings in the best price in the market because it has the best quality and taste.

Chestnut Farming in Cuneo

Our chestnut farms are family farms. They sell chestnuts as they come from the plant; they don't generally do sorting. That is a problem because sellers want quality, and quality means sorting for disease, defects, and size. Most sorting is still done by hand, but many farms now use mechanical sorting, but only for size sorting. Chestnuts are sold in mesh bags in 1, 2, 5, or 10 kilo sizes.

Traditional Chestnut Groves

Many traditional chestnut groves have plants that are 200-300 years old (Figure

5). The production stage of a chestnut is from 20 to 80 years old. So these plants should be retired, but people still want to get production from them, and that is why our production is so low statistically. 1 ha will only yield maybe 100 kilos from these plants – that's like 1 nut per square meter, so basically nothing. In a new, modern orchard, we can reach 7,000 kilos per ha. 80% of the chestnut groves in my area are traditional groves – they are on slopes and have no irrigation or fertilization. They rake the leaves and burs, so they remove natural fertilizer, and then they burn it. These groves are mostly dying because they are old and not well kept.



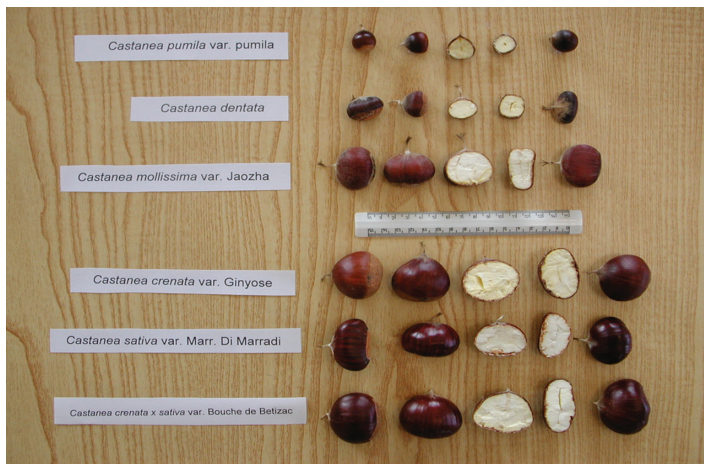
Figure 5. Traditional chestnut groves.



Figure 6. New chestnut orchards.

New Chestnut Orchards

In our newer orchards, we use irrigation, fertilization, and mulching (Figure 6). They are high-density plantations that I find have more negative features than positive. These orchards reach more than 400 plants per ha, 4 times normal density. This brings many problems, such as blight, because there is too much shade at the base, and brown rot, because the plants are so close. This is a choice made by farmers, but for me, the best spacing for chestnuts is still 10m between each row and line. At maximum you could do 9m spacing, but no lower than that. We tried both 7x7 and 8x8, and both developed problems after 10 years.



Figures 3 & 4: Chestnut varieties we plant.

In our newer orchards we also use mulching with plastic on top. The soil is flat but we plant the line 30-40cm higher than ground level (Figure 7). This helps to prevent *Phytophthora*, because the chestnuts cannot take humidity at the foot of the plant longer than a few hours. For the first 3 years we use drip irrigation, and then switch to sprinkle irrigation. We use mulching for weed control also. We do not take anything organic away from the plant – everything is mulched into the soil, even when we prune and have large branches, we chop them up and throw the chopped branches back into the field. This permits us to reduce the amount of fertilizer used by 30-40% because we recycle 50-70% of the fertilizer produced by the plant itself.



Figure 7. Hydraulic management.

What we Plant

I have been a nurseryman for the last 35 years, and I have never produced a chestnut potted plant. The ideal chestnuts to plant are bare root, 2 years old, full root (Figure 8). In the nursery, I use mycorrhiza and organic fertilizer, all different kinds, but not manure, because it increases the chance of brown rot due to its water content.

The Problem of Graft Compatibility

One of the main problems I am working

on in chestnuts is graft compatibility, which is in my opinion the first thing to address when planting chestnuts. Graft incompatibility is historically the first cause of death of the plant. Figure 5 shows an array of different compatibilities from perfect to partial to total incompatibility. This is a very old problem. Even using primarily *Castanea sativa*, which is the most differentiated/variable species with the most interspecific variation, incompatibility is still the main problem. Many of Italy's southern orchards are dying because of graft incompatibility. For example, they graft Bouche de Betzac on *sativa*, and they die after as little as 5 years and never produce.

Grafting Methods

We generally start grafting in late April and can go until the last day of May. The longer the window of time for grafting, the better our results have been. We have found that the best way to graft is the

triangle graft. 15 days before grafting, we cut the root stock and don't touch it after that. When it is completely dry (does not "cry" or have sap flowing from it), then we can do the graft. We use the triangle graft to attach the scion (Figure 9, next page). We seal the graft with plastified tar (Figure 10, next page). Cuneo is cold, and the tar is black, so the heat from the sun it collects helps the graft to take.

Grafting Success

Percentages of success with grafting are always hard to tell. I have done a lot of grafting in my life, more than a thousand different varieties of fruit, and chestnut is the most difficult because the window of time to do it is very narrow and climate has a very important role in grafting success. Because seedlings are different in so many ways, we are now using clonal rootstocks. We currently have 9 clonal rootstocks on trial.

Continued on next page...



Figure 8: Our bare root seedlings.

Continued from previous page...

Graft incompatibility can begin to show itself after 3-4 years (Figure 11). It may look like blight is what is going on, but instead, blight is the effect of incompatibility. For me, the future is in *in vitro* tissue culture. Today, I have over 8,000 rootstocks *in vitro* (Figure 12). We are using the European-Japanese hybrid Marsol. We are using some Maraval also, but it is a less vigorous plant, although it is more tolerant of blight and *Phytophthora*. Marsol is my first choice because it is the latest-leaving variety, and if you use it as rootstock, it will pass the late-leaving feature to the variety you graft on it. Our main concern is conferring resistance to cold because of our climate, so we need late-leaving, high-vigor rootstock from *in vitro* tissue culture. plants up to 5 years old are in very serious danger of getting damaged by spring frost. In that regard, Marsol was very clearly successful this year. We had a field that had half the



Figure 12: *In vitro* tissue cultures.

plants grafted on seedlings and half on Marsol from *in vitro*. All the plants on the seedlings died from frost, and all the plants on Marsol are now producing. 🍓

Guido's presentation recording and PowerPoint slides can be found on the members-only page of the CGA website.



Figure 9. Triangle grafting method.



Figure 10. Plastified tar.



Figure 11. Graft incompatibility.

2022 - 2023 CGA Slate of Officers:

President: Roger Blackwell

Vice President: Position currently vacant

Secretary/Treasurer: Jack Kirk

Directors: Sara Fitzsimmons, Steve Jones, Greg Miller, Tom Wahl, Luke Wilson

According to the bylaws, the slate shall be considered to have been elected unanimously if no written petitions are received.

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For dues payment, **EITHER** mail check to Jack Kirk at Richmond address; **OR** submit your dues online via PayPal at www.chestnutgrowers.org/paydues.html. **Please ensure that you have submitted both your application and dues.**

A Farm/Business/Organization Name:

B First Name

Last Name

First Name

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<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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(Individual/First Household Member)

(Second Household Member)

New Member Application

(please complete sections C-K below)

Renewal (please complete sections I-K below)

No updates to lines C-H below. Please use info from last year.

My information has changed. I have provided updates below.

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Zip/Postal Code

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E Phone

Fax

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F Email

Website

<input type="text"/>	<input type="text"/>
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G Acreage in Chestnuts

of Trees

Year First Planted

Previous Year's Production (lbs)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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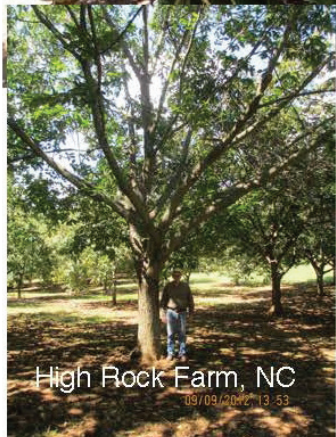
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