



The WESTERN CHESTNUT

Vol. 5 No. 1

Published by The Western Chestnut Growers Assn., Inc.

Winter 2003

Nominating Committee Provides Proposed Slate of Candidates for June Election

The following persons have been nominated for office:

| | |
|-----------------|------------------|
| President: | Chris Foster |
| Vice President: | Harvey Correia |
| Secy/Treas: | Ray Young |
| Director: | Lee Williams |
| Director: | Peggy Paul |
| Director: | Lucienne Grunder |
| Director: | Bob Schilpzand |

According to the bylaws, Article VIII Nominations:

Members may nominate their own candidate(s) by submitting a written petition to the Secretary at his regular address, prior to the election and including the following:

- A written acceptance by each nominee to serve the association for the next year;
- A request to place the proposed candidate(s) on the ballot with a clear description of the office being challenged, signed by at least 10% of the eligible voting members listed in the most recent membership directory (currently 9).

Nominations may not be made at the June annual meeting.

If no valid written petitions are received by the Secretary prior to March 1, the Nominating Committee's slate shall be considered to have been elected unanimously and no balloting shall be necessary.



In This Issue

- 1 Nominating Committee Report
 - 1 Italian Families Host Chestnut Day
 - 2 President's Message
 - 3 Adventures of the Casey's
 - 4 UC Davis Meeting
 - 5 Chestnut Nutrition Update
 - 7 Annual Meeting Announcement
 - 8 Clothing Order Form
- ...and in addition
- Membership Renewal Form
 - Growers' Directory Application

Italian Families Host Chestnut Day in Mendocino County, California

by Harvey Correia

For background information, in the late 1800s and early 1900s several Italian families settled in the coastal mountains in Mendocino County, California. Naturally, they brought with them many of their cultural traditions. There are numerous small plantings of old chestnut trees that were

for U-Pick or \$3.00 for the largest chestnuts that have already been harvested and sorted. The families also roast some chestnuts, handing them out as snacks and samples. A potluck lunch/dinner is incorporated into the event and plenty of local wine is also poured, including various homemade variations.



Raymond Zeni is shown here roasting chestnuts at his ranch on "Chestnut Day".

planted during those time periods that still exist today. One of the older farms that was established was the Gianoli Ranch near Yorkville which, according to Jennifer Pronsolino who owns that ranch with husband Ron, was homesteaded around 1882. The neighboring Zeni Ranch was purchased by the Zeni family in the 1920s and the third generation continues to operate the ranch. It appears that all of the trees planted on these two ranches are European species, most likely brought over from Italy.

For the past 20 years, the Zeni Ranch has had an annual "Chestnut Day" on either the last Saturday of October or first Saturday of November. I decided to make the trip to these two ranches this year with my family and we had a great time. The objective of this event is to help pick up the last of the year's harvest and to have a good time. Chestnuts are available for \$2.50 per pound

Many of the guests attending the Chestnut Day have been coming for many years and use it as an opportunity to gather their annual supply of chestnuts. It was a beautiful drive and the families are great hosts, so we're sure to make the trip again.



*If your mailing label says
"Exp: 2002"*

*it means your dues for 2003 are
DUE NOW*

*Fill out the colored form enclosed
and return ASAP to make sure
you don't miss out on the next
issue of the newsletter. Make sure
to sign up for the Growers'
Directory as well.*



A MESSAGE FROM THE PRESIDENT

As the New Year approaches, the chestnut marketing season is winding down or is over for many of us. Checking around, I found most growers locally to have already sold whatever quantity they had, but not without getting out there, and making the necessary contacts, calls, and promotion. Domestic production and promotion is not to the point where we can just sit by idly and wait for calls. People need to know we exist, and many potential buyers need to be introduced and familiarized with the product. I

spent a day at a farmer's market late this season, and the vast majority of sales were to people completely unfamiliar with chestnuts despite being in relatively "food sophisticated" downtown Portland. One of the aims of this organization is to help in lay the groundwork for expanding market opportunities for everyone. The overall market for domestic chestnuts needs to grow, and that may not happen without an organized effort. Production is increasing.

I suspect that some of the inquires and interviews I had with several journalists this season may have been prompted by the WCGA Press Release in September and October. Its effect is difficult to measure, especially over a short period. Much work remains, and your continued suggestions and support are welcome.

Plans are underway for the 2003 Annual Meeting to be held the weekend of June 28th and 29th in Brush Prairie, Washington. As always, we need member input and volunteer help to make this a quality event. Please contact me directly with your subject ideas and availability to help with organization. Also, if you have thoughts about what this organization should be doing in the meantime, please don't hesitate to write or call me directly.

Tentatively, the meeting classroom presentations will focus on at least two topics. We hope to have a presentation from someone with first hand "group" experience about building and expanding markets for a similar product. Personally, I will be giving a presentation reviewing the current science and art of storage and conditioning techniques for the fresh market. I will review various methods currently in use, and what the latest scientific research suggests. Storage and packaging to maintain best quality is no simple matter, and most of us can at least, incrementally improve our technique and understanding. There's nothing worse right now for our industry than consumers being initially turned off by a bad experience with spoiled chestnuts. All WCGA members should be making their best effort to deliver a good product.

We will also be making stops at at least four local orchards, where the focus will be cultural practices and management techniques. Each orchard representative will discuss one or more specific topics. Mark your calendars and please attend!

Christopher H. Foster

EDITOR'S NOTES

At last, a real use for Nevadas. In her emails from Europe, Jane Casey happened to include a photo of free range pigs eating chestnuts in a forest in Corsica. She mentioned that this is a desired means of finishing a pig before market. With article in hand and a couple of buckets of Nevadas ready for the composter, Ray hoffooted it over to our neighbors who have a handful of pigs. The pigs were delighted and nearly got into a fight as each attempted to get everything for himself.

But back to more important things - Harvey shares with us the proceedings of the meeting at Davis, and also his family's day at the California chestnut festival. Jane Casey graciously allowed us to publish a snippet from her travel journal. And Jeff Olsen gives us an update on the leaf analyses that were completed this past summer. I'm sure this will generate questions among growers. Our thanks to each for being willing to share.

Carolyn

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Single membership is \$25 per year per person - household membership is \$35. Members receive The Western Chestnut quarterly. For foreign delivery contact the Editor for pricing. Back issues may be obtained by members. Membership applications may be obtained from the Secretary-Treasurer.

POSTMASTER

Send Address changes to WCGA, c/o PO Box 841, Ridgefield, WA 98642.

ADVERTISING RATES

Full page, camera ready (w/1 photo) . \$20.00
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Quarter page 10.00
Business card (4 issues) 15.00

One classified ad per member per year is free (max 6 lines, \$2.50 ea add'l 6 lines). Ad space may be reserved with full payment but must meet established deadlines. If ad is cancelled, money may be refunded if space is resold. Make checks payable to Western Chestnut Growers Assn., Inc.

All ads and other copy preferred in PC format on disk or e-mail to Carolyn@ChestnutsOnline.com. Ads must adhere to published ad sizes for space purchased. Call for specifics. Otherwise for best results, submit original photographs. Layout of ads will not be done until payment is received. **Send materials to P.O. Box 841, Ridgefield, WA 98642, or Fedex/Express Mail to 29112 NW 41st Ave., Ridgefield, WA 98642.** Call for further info.

PUBLICATION AND DEADLINES

| | | |
|--------------|----------------|-------------|
| Fall issue | deadline 9/10 | mailed 10/1 |
| Winter issue | deadline 12/10 | mailed 1/1 |
| Spring issue | deadline 3/10 | mailed 4/1 |
| Summer issue | deadline 6/10 | mailed 7/1 |

EDITORIAL OPINION

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The European Chestnut Adventures of Jane and Brian Casey

by Jane Casey

Editor's Note: Jane Casey and her husband, Brian, are prominent chestnut growers in Australia. They have been on an extended "chestnut trip" to Europe. She has been emailing her newsletters from there periodically. Here she shares a few days in Italy and Spain..

Hello from Italy,

Sorry to take so long in writing our latest update. We have been very busy and when we haven't been traveling we've not had access to the internet.



We are now in Italy staying at Castelnuovo Garfagnana in northern Tuscany and are here for the festival Ponti nel Tempo which runs all week. Tomorrow is the presentation of the new seasons chestnut flour and they celebrate by making a giant chestnut polenta "Farina di Neccio della Garfagnana".

I'll talk about our stay in Spain and Portugal in this edition and then follow up soon with one on our stay in the Dordogne because it's really too much to put it all in one newsletter.

We arrived in Ourense in North West Spain on 8 November and stayed as guests of Jose Posada and his wife Carmen. They greeted us with true Spanish hospitality and it was great to stay right in the centre of the bustling city of Ourense after our previous rural accommodations. Jose is the largest manufacturer of Marrons Glaces in Spain and visited Australia in 1998 to speak at a Nut Industry Conference. We

have kept in contact ever since and it was wonderful to be able to visit him in his home town.

The day after arriving we were invited to attend a chestnut banquet organised by the Glaician Wine Confrerie of which Jose is the secretary. We tasted around 16 different wines and munched on hot roasted chestnuts before our lunch which commenced at around 3.00 pm. We had chestnut soup, pork with chestnut puree (that had the texture of creamy mashed potatoes), chestnut cake and finished off with chestnut cream and marrons glaces in crepe 'baskets'. All of this was consumed with plenty of red wine and the after dinner digestive of some incredibly alcoholic concoction. We didn't leave until almost 7.00 pm. Wonderful!

The reason for the timing of our trip was to experience the Festival of St. Martin that is held in Ourense on the 11th of November each year. It is

a public holiday and everyone seems to get into the spirit of it. As legend has it, St Martin gave his cloak to a beggar and as payment the beggar gave St. Martin some chestnuts, so on this day everyone celebrates by eating hot roasted chestnuts. Many go into the hills and light camp fires and roast chestnuts, drink red wine and then jump over the fire and paint their faces with ash to cleanse themselves (as legend has it). We stayed in the city where roasted chestnuts and wine was being given away free but we saw many folk walking around with blackened faces.

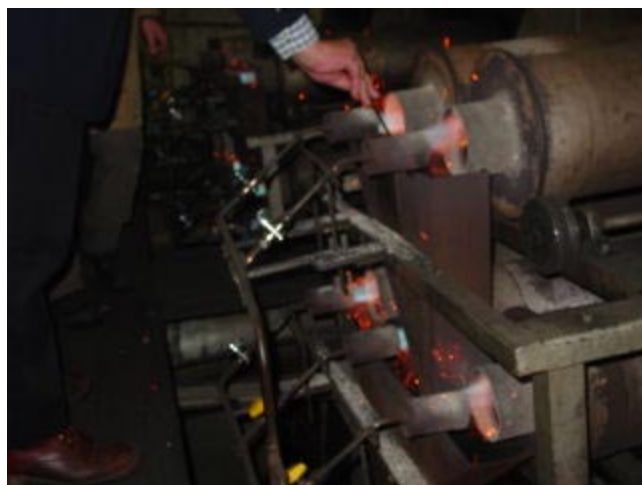
Jose took us on a day tour to Northern Portugal to see the chestnut growing regions there. On the way we stopped at a local co-operative to see

them grading and packing and visited the mayor of a local chestnut area who is interested in developing recognition of his region with chestnuts. Then we stopped to visit a chestnut processor. It was a very large facility and was impressive in terms of its efficiency and the volume of chestnuts they handle. They use the brulage method to peel the chestnuts. This is the very high gas fired flame ovens that literally burn the outer skins off. After going through the oven the nuts are washed and put through a kind of scrubbing machine to clean off any remaining skin. They are sorted and there is some hand finishing of the product before it goes through a freezing tunnel and finally checked again and packed. We've seen many of these types of peeling machines in our travels ranging from a single oven used by a grower to process their own crop to the large banks of machines found in this facility.

Here is a photo of the ovens. You can see the five flames for the five ovens. There was a bank of 5 of these units in the peeling section.

The facility handles around 2000 tonne of fresh nuts and has the capacity to process 15 tonne per day which was astounding to us especially since they've only been operating for 3 years.

On the way back to Spain we passed



through a town that has a monument honouring chestnut pickers so for all of you with sore backs please note that there is a small town in Portugal that recognises your efforts!

Continued on next page

NE - 140 Group Meets at UC Davis

by Harvey Correia

On October 25th and 26th, chestnut researchers from around the country (and even one from Canada) held their annual meeting at UC Davis. A few California chestnut growers, including myself, also attended the meeting. I, for one, was impressed with the sheer number of researchers involved with chestnuts. UC Davis Dean Neal Van Alfen and researcher Pam Kazmierczak had offered to host the evening and this provided some of us from California a great opportunity to learn of the work they are doing.

After opening comments by Neal Van Alfen, I gave a presentation to provide an overview of chestnut production in the west. Lucienne Grunder next gave a report on the results in her large orchard east of Modesto,

with emphasis on the different cultivars she was trying. Deborah Golino, Director of Foundation Plant Material Services, gave a report on the status of the import permit application discussed in the Summer edition of the newsletter and also reported that the director of the repository had received permission to establish a repository for chestnuts at UC Davis. They are starting off with 50 seedlings provided by Lucienne as rootstock.

Sandy Anagnostakis of the Connecticut Agricultural Experiment Station mentioned research in Portugal showed improved resistance to Phytophthora when the calcium to nitrogen levels were at a 2:1 ratio. Ken Hunt provided a report on the cultivar trial at the University of Missouri and

indicated that the primary focus was centered on the 'Qing' and 'Willamette' cultivars. Most of the subsequent presentations were centered on chestnut blight research, especially with work on hypovirulence. Dennis Fulbright gave a presentation on chestnut production in Michigan, the results with their new peeler imported from Italy, the cooperative formed by growers, and various projects at Michigan State University. We also gathered for dinner Friday night at the home of George and Suzette Canfield where we consumed chestnuts in various forms. Overall, this was a great meeting to attend and the dinner was very enjoyable.



Casey, cont'd from p. 3

Jose was very generous with his knowledge and information regarding the chestnut industry in Spain and also on the production of marrons glaces. Not only this, but he kindly ran the machinery in the factory and processed some nuts simply for us to see how it worked even though production was not due to commence for another week or so. The more we learn about this product the greater is our understanding of how difficult it is to make. Most producers of marrons glaces are very secretive about their processing methods. Jose is not one of them but even though he went through his process, it is so involved and complicated I don't think I could face trying to produce them ourselves for many years, if ever. After a tour of the factory Jose, Brian, his production manager and I had a taste test with some of the products we had collected in our travels. Here's a photo of the desk during the tasting with the production manager.



Another day Brian and I ventured into Portugal on our own and visited Afonso Martins, who is organising the International Chestnut Symposium in Charves next year and Ester Abranches Costa Portela, both Associate Professors at UTAD based in Vila Real. Whilst we think that blight is the biggest problem in Europe we were interested to learn that actually it is phytophthora that is the more immediate issue in Portugal. We

discussed phytophthora treatment and Ester was interested to hear about our problem with Manganese toxicity at low soil pH as it was something she had suspected in Portugal but had never gone to the next step of identifying it. We also showed photos of our orchard with the grass under the trees. Traditionally in Portugal the soil underneath the trees has been cultivated so that no grass grows. In the past oxen and hand ploughs were used but now with the advent of tractors the farmers are tilling much more often and more deeply

and it is actually detrimental. Chestnuts have been cultivated in Portugal for centuries and the researchers are trying to change this practice but it really is a case of old habits die hard.

We left Ourense after a busy and very interesting week. Special thanks to Jose and Carmen Posada for their kindness and generosity during our stay.

Hope everyone's season has gone well. Will forward the next installment soon.

Jane and Brian Casey

A membership renewal form is included with this issue. Your dues are DUE NOW. Please enclose your check in the envelope provided and mail to:

**Ray Young, WCGA Secretary/Treasurer
PO Box 841
Ridgefield, WA 98642**

On the back side of the membership renewal form is an application for the growers' directory. Take advantage of this advertising opportunity.

Chestnut Orchard Nutrition Update

By Jeff Olsen, Oregon State University Extension Horticulturist

The Western Chestnut Growers Association project on leaf tissue analysis interpretation for chestnuts now has three years of data submitted by growers from the western US and elsewhere. Although the samples come in from differing aged orchards under different growing conditions some trends do emerge. I adapted critical nutrient levels from hazelnuts as a starting point to refine interpretation of chestnut results. The levels for various nutrients and their interpretive status are listed in Table 1 below. The interpretive comments that accompany the results from our OSU Central Analytical Laboratory are revised to reflect the unique needs of chestnuts.

If you want to test your orchard and contribute to the database, leaf tissue samples should be taken from the orchard in the month of August. You need 50 leaves per sample, taken from the mid-shoot of current season's growth. Every OSU Extension office has leaf tissue sample kits. If you send your samples to Corvallis, I will get an electronic copy of your results and would be glad to help you interpret them. If they are sent to a private lab, please send copies of the results to me at: Jeff Olsen, OSU Extension Service, 2050 Lafayette Ave., McMinnville, OR 97128.

Table 1. Suggested critical nutrient levels for interpretation of chestnut orchard leaf tissue analyses.

| Nutrient | Defic. | Bel. Norm. | Normal | Above Norm. | Excess |
|-------------------|--------|-------------|-------------|-------------|--------|
| NITROGEN | < 1.80 | 1.81 - 2.20 | 2.21 - 2.50 | 2.51 - 3.00 | > 3.00 |
| PHOSPHORUS | < 0.10 | 0.11 - 0.13 | 0.14 - 0.45 | 0.46 - 0.55 | > 0.55 |
| POTASSIUM | < 0.50 | 0.51 - 0.80 | 0.81 - 2.00 | 2.01 - 3.00 | > 3.00 |
| SULFUR | < 0.08 | 0.90 - 0.12 | 0.13 - 0.20 | 0.21 - 0.50 | > 0.50 |
| CALCIUM | < 0.60 | 0.61 - 1.00 | 1.01 - 2.50 | 2.51 - 3.00 | > 3.00 |
| MAGNESIUM | < 0.18 | 0.19 - 0.24 | 0.25 - 0.50 | 0.51 - 1.00 | > 1.00 |
| MANGANESE | < 20 | 21 - 25 | 26 - 650 | 651 - 1000 | > 1000 |
| IRON | < 40 | 41 - 50 | 51 - 400 | 401 - 500 | > 500 |
| COPPER | < 2 | 3 - 4 | 5 - 15 | 16 - 100 | > 100 |
| BORON | < 25 | 26 - 30 | 31 - 75 | 76 - 100 | > 100 |
| ZINC | < 10 | 11 - 15 | 16 - 60 | 61 - 100 | > 200 |

Thirteen out of the 18 results in 2002 were in the below normal range for potassium. Fifteen out of 21 results in 2001 were in the below normal range. I made a presentation to the Western Chestnut Growers Association in the winter of 2002 entitled "Potassium Management in Chestnut Orchards". I outlined the important role that potassium plays in orchard crops and suggested that it may be more important in chestnuts than in many other orchard crops. A review of our leaf tissue analysis reports for 2001 and 2002 confirms that we have to do a better job of supplying the trees with adequate potassium.

Potassium chloride or muriate of potash should be applied in a band anytime from fall through winter, but before February 15th in western Oregon. It is the most economical form of potassium available if used properly. Application of muriate after mid-February is risky, in that a chloride burn may occur on the trees. We need the heavy winter rains or ample irrigation to leach out the chloride salts before the trees begin to grow in the spring. If you have to apply potash after mid-February, then use potassium sulfate unless you can really pour the water on after application to wash out the chloride salts.

Several orchards in California showed predictably high levels of boron, considering their soils. The highest recorded in 2001 was 419 parts per million (ppm), while the highest in 2002 was 301. These very high levels would cause a phytotoxic response in hazelnuts. In hazelnuts we back off of applications when we reach 200 ppm, or else the

leaves start showing dead spots due to excess boron.

Although we seem to know very little about the role of sulfur in orchard crops, the vast majority of chestnut leaf samples were in the deficient range. Since chestnuts like a slightly acidic soil, we could safely use sulfur to adjust the pH downward, and boost the levels of sulfur in the trees.

When we attempt to interpret results from our leaf tissue and soil test results there are many helpful tips to remember. The most important thing to do is to compare the results with what you see in the orchard. Nitrogen values from a leaf test must be judged in light of the conditions in the orchard. A grower should check to see whether leaf color and shoot length looks good. If they look great, then adding more nitrogen in response to a slightly below normal leaf test should be done with caution. An adequate amount of total nitrogen for a tree can sometimes be "spread out" over a vigorous shoot growth. Then the leaf tissue reading can seem somewhat "diluted", when in fact enough nitrogen is present for good growth and yields.

Soil Testing

Soil tests are also a useful tool and can be taken at any time of the year. I think it is best to have the results in hand by the fall of the year, so that liming can be done after the harvest is complete.

We recommend applying lime to most orchard crops when the soil pH is 5.6 or below, with chestnuts being an exception. We look to the SMP buffer test to determine the correct amount to apply. This

buffer test indicates the soil type's capacity for reaction to liming. The buffer readings with the amount of lime in tons per acre to apply listed in parentheses is as follows: 5.9 -6.2 (1 to 2 tons\A), 5.6 - 5.9 (2 to 3 tons\A), 5.2 - 5.6 (3 to 4 tons\A), below 5.2 (4 to 5 tons\A). Since the recommended soil pH for chestnut orchards is between 5.0 and 6.0 we generally won't need to apply large amounts of lime. I have seen soils below 5.0 but it is rare. Growers on the eastern side of the Cascades may even need to use sulfur to lower their naturally high pH levels down to the ideal of 5.0-6.0.

The calcium reading on a soil test is listed in "milli-equivalents per 100 grams" of soil (meq/100 g). If your reading is below 5, you should consider a lime application of at least one ton per acre, even if the pH and buffer test don't indicate one is needed. Some people also like to consider the ratio of calcium to magnesium. The calcium reading should always be higher than the magnesium, unless something is way out of

balance. I have never seen a test result in the Valley where the magnesium is higher than calcium. The magnesium is also listed in the same form as calcium. If the magnesium level drops below 0.5 meq/100 g, then you should use dolomitic lime instead of regular limestone. If you wanted to correct a magnesium deficiency in a chestnut orchard without liming you could apply epsom salts, which are high in magnesium.

One of the more useful purposes of a soil test is to give you a reading of the potassium level in the soil. Potassium is essential to productive hazelnut trees. If your test results read 0 to 75 parts per million (ppm) of potassium, you should apply 300-400 pounds per acre of actual potash (K 2 O). If the reading is 75-150 ppm, then add 200-300 pounds per acre. If your potassium reading is over 150 ppm, then no potash is needed. In a mature orchard, a leaf tissue test is needed to assess the need for potassium application, and the soil test is used to verify low K in the soil.

Table 2. Leaf tissue analysis results on chestnuts from 2001 and 2002.

2001 Results:

| | N | P | K | S | CA | MG | MN | FE | CU | B | ZN | CITY | STATE |
|-----------|------|------|------|------|------|------|--------|--------|-------|--------|--------|------------|-------|
| | 2.31 | 0.24 | 0.91 | 0.04 | 1.03 | 0.33 | 98.00 | 49.00 | 7.00 | 105.00 | 28.00 | Lebanon | OR |
| | 2.20 | 0.23 | 0.95 | 0.04 | 1.08 | 0.36 | 109.00 | 61.00 | 8.00 | 48.00 | 33.00 | Lebanon | OR |
| | 3.43 | 0.25 | 0.69 | 0.08 | 1.78 | 0.38 | 228.00 | 42.00 | 6.00 | 87.00 | 30.00 | Ridgefield | WA |
| | 2.48 | 0.22 | 0.77 | 0.05 | 0.81 | 0.22 | 124.00 | 42.00 | 6.00 | 119.00 | 38.00 | Lynden | WA |
| | 2.57 | 0.24 | 0.95 | 0.07 | 0.94 | 0.23 | 127.00 | 42.00 | 5.00 | 106.00 | 31.00 | Lynden | WA |
| | 3.23 | 0.18 | 0.66 | 0.07 | 1.33 | 0.34 | 278.00 | 250.00 | 7.00 | 415.00 | 29.00 | Waterford | CA |
| | 2.93 | 0.20 | 0.73 | 0.12 | 1.47 | 0.46 | 275.00 | 274.00 | 7.00 | 385.00 | 27.00 | Waterford | CA |
| | 3.44 | 0.22 | 0.63 | 0.08 | 1.89 | 0.53 | 347.00 | 243.00 | 7.00 | 340.00 | 28.00 | Waterford | CA |
| | 3.21 | 0.34 | 0.98 | 0.09 | 1.61 | 0.47 | 278.00 | 141.00 | 6.00 | 379.00 | 29.00 | Waterford | CA |
| | 3.58 | 0.22 | 0.71 | 0.09 | 1.28 | 0.46 | 279.00 | 193.00 | 7.00 | 298.00 | 26.00 | Waterford | CA |
| | 2.99 | 0.18 | 0.55 | 0.06 | 2.19 | 0.65 | 287.00 | 114.00 | 7.00 | 419.00 | 22.00 | Waterford | CA |
| | 3.38 | 0.30 | 0.68 | 0.09 | 1.64 | 0.59 | 455.00 | 186.00 | 7.00 | 296.00 | 29.00 | Waterford | CA |
| | 3.34 | 0.19 | 0.69 | 0.06 | 1.56 | 0.51 | 235.00 | 109.00 | 7.00 | 230.00 | 21.00 | Waterford | CA |
| | 3.33 | 0.19 | 0.59 | 0.11 | 1.80 | 0.54 | 327.00 | 110.00 | 8.00 | 300.00 | 19.00 | Waterford | CA |
| | 3.19 | 0.17 | 0.77 | 0.06 | 1.46 | 0.44 | 330.00 | 230.00 | 6.00 | 336.00 | 22.00 | Waterford | CA |
| | 2.47 | 0.19 | 0.50 | 0.04 | 1.33 | 0.51 | 244.00 | 117.00 | 17.00 | 139.00 | 48.00 | Sherwood | OR |
| | 2.46 | 0.15 | 0.58 | 0.03 | 1.64 | 0.43 | 203.00 | 85.00 | 5.00 | 65.00 | 32.00 | Sherwood | OR |
| | 2.59 | 0.15 | 0.57 | 0.04 | 1.61 | 0.50 | 223.00 | 78.00 | 5.00 | 95.00 | 37.00 | Sherwood | OR |
| | 3.98 | 0.26 | 0.69 | 0.05 | 0.78 | 0.34 | 201.00 | 51.00 | 7.00 | 38.00 | 63.00 | Carlsborg | WA |
| | 3.76 | 0.23 | 0.97 | 0.04 | 0.69 | 0.29 | 138.00 | 60.00 | 7.00 | 31.00 | 95.00 | Carlsborg | WA |
| | 3.24 | 0.15 | 0.82 | 0.04 | 0.67 | 0.20 | 146.00 | 53.00 | 4.00 | 26.00 | 50.00 | Carlsborg | WA |
| Median | 3.21 | 0.22 | 0.69 | 0.06 | 1.46 | 0.44 | 235.00 | 109.00 | 7.00 | 139.00 | 29.00 | | |
| Mean | 3.05 | 0.21 | 0.73 | 0.06 | 1.36 | 0.42 | 234.86 | 120.48 | 6.95 | 202.71 | 35.10 | | |
| Min. | 2.20 | 0.15 | 0.50 | 0.04 | 0.67 | 0.20 | 98.00 | 42.00 | 4.00 | 26.00 | 19.00 | | |
| Max. | 3.98 | 0.34 | 0.98 | 0.12 | 2.19 | 0.65 | 455.00 | 274.00 | 17.00 | 419.00 | 95.00 | | |
| Std. Dev. | | 0.50 | 0.05 | 0.15 | 0.03 | 0.43 | 0.12 | 91.32 | 77.73 | 2.52 | 142.56 | 17.30 | |

Visit the WCGA Website

Check on events, the growers' directory, foliar analysis info since 2000 and info on shothole borer. Order your WCGA clothing and contact an officer or board member.

www.WCGA.net

Got your attention, did I?

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2002 Results:

| | N | P | K | S | CA | MG | MN | FE | CU | B | ZN | CITY | ST |
|-----------|------|------|------|------|------|------|--------|--------|-------|--------|-------|------------|----|
| | 2.77 | 0.24 | 0.53 | 0.06 | 1.54 | 0.42 | 279.00 | 118.00 | 8.00 | 301.00 | 24.00 | Waterford | CA |
| | 3.15 | 0.25 | 0.54 | 0.07 | 1.50 | 0.41 | 175.00 | 118.00 | 10.00 | 251.00 | 30.00 | Waterford | CA |
| | 1.76 | 0.12 | 0.57 | 0.04 | 1.84 | 0.46 | 144.00 | 39.00 | 5.00 | 63.00 | 16.00 | Columbia | MO |
| | 0.82 | 0.14 | 0.48 | 0.06 | 1.91 | 0.62 | 174.00 | 47.00 | 7.00 | 59.00 | 20.00 | Columbia | MO |
| | 2.46 | 0.19 | 0.82 | 0.04 | 1.37 | 0.31 | 109.00 | 65.00 | 9.00 | 44.00 | 66.00 | Columbia | MO |
| | 2.34 | 0.18 | 0.93 | 0.06 | 1.52 | 0.33 | 130.00 | 66.00 | 9.00 | 48.00 | 75.00 | Columbia | MO |
| | 2.54 | 0.18 | 0.66 | 0.05 | 1.46 | 0.38 | 143.00 | 39.00 | 7.00 | 50.00 | 25.00 | Columbia | MO |
| | 2.03 | 0.17 | 0.74 | 0.05 | 1.38 | 0.29 | 107.00 | 62.00 | 8.00 | 48.00 | 63.00 | Columbia | MO |
| | 1.85 | 0.12 | 0.62 | 0.05 | 1.22 | 0.40 | 113.00 | 45.00 | 6.00 | 67.00 | 18.00 | Columbia | MO |
| | 1.65 | 0.11 | 0.64 | 0.04 | 1.36 | 0.36 | 110.00 | 47.00 | 5.00 | 44.00 | 18.00 | Columbia | MO |
| | 2.37 | 0.15 | 0.73 | 0.06 | 1.23 | 0.49 | 131.00 | 111.00 | 6.00 | 42.00 | 26.00 | Moses Lake | WA |
| | 2.48 | 0.17 | 0.76 | 0.04 | 0.75 | 0.28 | 113.00 | 65.00 | 4.00 | 38.00 | 32.00 | Carlsborg | WA |
| | 2.26 | 0.17 | 0.86 | 0.04 | 0.97 | 0.25 | 126.00 | 68.00 | 7.00 | 31.00 | 34.00 | Seattle | WA |
| | 2.24 | 0.16 | 0.66 | 0.05 | 0.63 | 0.38 | 123.00 | 61.00 | 6.00 | 49.00 | 26.00 | Lorane | OR |
| | 2.10 | 0.22 | 0.93 | 0.04 | 1.30 | 0.23 | 124.00 | 61.00 | 5.00 | 87.00 | 30.00 | Lynden | WA |
| | 2.84 | 0.20 | 0.48 | 0.09 | 2.40 | 0.43 | 268.00 | 153.00 | 7.00 | 128.00 | 49.00 | St. Paul | OR |
| | 2.62 | 0.19 | 0.65 | 0.08 | 1.82 | 0.39 | 140.00 | 122.00 | 6.00 | 111.00 | 35.00 | St. Paul | OR |
| | 3.34 | 0.22 | 0.61 | 0.20 | 1.23 | 0.50 | 85.00 | 107.00 | 12.00 | 193.00 | 25.00 | Isleton | CA |
| Median | 2.36 | 0.18 | 0.66 | 0.05 | 1.38 | 0.39 | 128.00 | 65.00 | 7.00 | 54.50 | 28.00 | | |
| Mean | 2.31 | 0.18 | 0.68 | 0.06 | 1.41 | 0.39 | 144.11 | 77.44 | 7.06 | 91.89 | 34.00 | | |
| Min. | 0.82 | 0.11 | 0.48 | 0.04 | 0.63 | 0.23 | 85.00 | 39.00 | 4.00 | 31.00 | 16.00 | | |
| Max. | 3.34 | 0.25 | 0.93 | 0.20 | 2.40 | 0.62 | 279.00 | 153.00 | 12.00 | 301.00 | 75.00 | | |
| Std. Dev. | 0.58 | 0.04 | 0.14 | 0.04 | 0.42 | 0.10 | 52.11 | 34.43 | 2.01 | 78.45 | 17.54 | | |

Sandra Anagnostakis sent in nine samples from her research plot in Connecticut, covering the 2001 and 2002 seasons (Table 3). The nitrogen levels were either normal or close to it. All of the potassium readings fell into the low end of the normal range. Five of the nine samples showed a low calcium level, while all of the boron readings were in the normal range.

Table 3. Chestnut leaf sample results from the "New Hybrids" plot at Lockwood, Connecticut, courtesy of Sandra Anagnostakis.

August 2001:

| Element | N %dw | P %dw | K %dw | S %dw | CA %dw | MG %dw | MN ppm | FE ppm | CU ppm | B ppm | ZN ppm | AL ppm | CA/N |
|----------------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-------|
| Prospect South | 2.13 | 0.18 | 0.88 | 0.15 | 0.38 | 0.18 | 441 | 54 | 6 | 39 | 36 | 715 | 0.018 |
| Prospect North | 2.04 | 0.19 | 0.87 | 0.16 | 0.50 | 0.22 | 733 | 53 | 5 | 43 | 26 | 664 | 0.244 |
| Windsor | 2.66 | 0.40 | 0.96 | 0.18 | 1.02 | 2.50 | 418 | 64 | 7 | 51 | 62 | 138 | 0.384 |
| Lockwood | 2.22 | 0.27 | 0.63 | 0.17 | 1.20 | 0.28 | 255 | 59 | 6 | 64 | 28 | 329 | 0.541 |

August 2002:

| Element | N %dw | P %dw | K %dw | S %dw | CA %dw | MG %dw | MN ppm | FE ppm | CU ppm | B ppm | ZN ppm | AL ppm | CA/N |
|----------------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|------|
| Prospect South | 2.12 | 0.16 | 0.92 | 0.13 | 0.36 | 0.17 | 370 | 112 | 7.01 | 31.4 | 24.9 | 607 | 0.17 |
| Prospect North | 2.24 | 0.20 | 0.95 | 0.14 | 0.39 | 0.20 | 867 | 101 | 7.96 | 39.2 | 24.3 | 640 | 0.18 |
| Windsor | 2.47 | 0.30 | 1.10 | 0.18 | 0.74 | 0.29 | 160 | 66 | 9.90 | 29.6 | 27.3 | 123 | 0.30 |

WCGA 2003 Annual Meeting

Saturday/Sunday, June 28-29, 2003
Brush Prairie, WA

Presentations - Orchard Tours - Social Time

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|----------|--|---------------------|--|------------|
| K420 | Pique Knit Short-sleeve Polo Shirt | Unisex sizes XS-4XL | White, Ivory, Oxford, Stone, Yellow Faded Blue, Red, Faded Olive, Burgundy Forest Green | \$34.00 |
| K420P | Pique Knit Short-sleeve Polo Shirt w/Pocket | Unisex sizes XS-4XL | White, Stone, Faded Blue | \$38.00 |
| L420 | Ladies Pique Knit Short-sleeve Polo Shirt | Sizes S-XL | White, Stone, Yellow, Faded Blue, Red | \$34.00 |
| PC61 | Men's/Women's Cotton Knit T- Shirt | Sizes S-2XL | White, Ash, Yellow, Natural, Stonewashed Blue, Stonewashed Green, Violet, Colonial Blue, Red, Spruce | \$16.00 |
| SP10 | Long-sleeve Denim Shirt | Sizes XS-4XL | Faded Blue | \$31.00 |
| SP11 | Short-sleeve Denim | Sizes XS-4XL | Faded Blue | \$31.00 |
| L600 | Ladies Long-sleeve Denim Shirt | Sizes S-XL | Faded Blue | \$44.00 |
| 83062 | Crewneck Sweatshirt 80/20 Cotton/Poly | Adult sizes S-2XL | Ash, Heather, Bluegrass (slate blue), Wine | \$46.00 |
| CP82 | Brushed Twill Baseball Cap adj. closure | | Khaki, White, Red, Royal | \$15.00 |
| AP34 | Butchers Apron 34" long | | White, Vanilla, Butter, Sage, Hunter, Red, Royal | \$19.00 |

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1/03-10/03