



The WESTERN CHESTNUT

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Summer 2002

WSARE Announces 2002 Grant Program

WSARE is soliciting proposals for its FY2003 competitive grants program. The three areas of funding are 1) Research and Education (new pre-proposal schedule this year), 2) Farmer/Rancher Research, and 3) Professional Development. For a copy of the Calls for Proposals, please visit the WSARE website at, <http://www.wsare.usu.edu>.

Persons with disabilities or without internet access are welcome to call the WSARE program office at 435-797-2257 for information or they can be reached by email at wsare@mendel.usu.edu.

All applications must be received by Oct. 1, 2002.



Check out the new

WCGA website at

<http://www.wcga.net>

Bookmark it now

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Foliar Analysis Project Continues

by Chris Foster

Email foster@europa.com

With summer upon us, its time to start thinking about getting a leaf tissue analysis. In most parts of the country, the proper time is first week or two of August. In central California, or areas of early harvest, late July is generally the target. Two years ago, the WCGA organized an effort to help establish some statistics to guide growers in their individual fertility needs. If your trees are short on an important element, or if you are over-applying a certain fertilizer, leaf sampling is a sure way to save time and money. Soil analysis by itself only shows a small part of the picture. Testing the leaves for the important elements is a reliable way to know if your fertility program is working and getting to all parts of the tree.

While other crops have more or less zeroed in on target nutrient levels, very little is known about the "ideal" levels in chestnuts. The only practical way to obtain data is through cooperation among growers. Staring at a test result in a vacuum, or comparing it with results from other tree crops may not be reliable.

As a beginning, the WCGA effort remains focused on sampling trees in good health and of average growth and production. When we get an idea of what the "norm" is, we can move onto the more sophisticated tasks of guidelines for deficiencies, excesses, and the optimal levels for maximizing production with economic efficiency. In the years to come, organized testing could focus on the "super" trees, response to applications of certain nutrients, trees with characteristic problems, or the needs of specific cultivars. In the past couple of years, we have accumulated a few dozen test results and we are well on our way to firming up what the "norm" is, but are well from statistically reliability. Your continued cooperation in sharing results is essential.

Generally, the cost of a leaf tissue analysis is around forty-five dollars. In our orchard we have been sampling every year, with an eye on the trends. We can

watch levels trend up or down and take appropriate action before we are headed for problems or wasteful spending. We sample the same six trees every year taking five or six clean leaves from each tree and mixing them together. Placing them in a sealed paper, they are sent to the lab. There are many universities and private companies which offer reliable testing services. Check with your local extension service if you have trouble finding one, and be sure to confirm the proper protocol for sampling with the provider you choose. In the Northwest, leaf sample kits can be obtained from the OSU Central Analytical Laboratory at 541-737-2187, or by writing to them at:

Central Analytical Laboratory
Dept. of Crop and Soil Science
Oregon State University
Corvallis, OR 97331-2911

Alternatively, a private company providing a prompt service is:

Agri-Check, Inc.
323 Sixth St.- P.O. Box 1350
Umatilla, OR. 97882
Toll Free- 800- 537-1129

If you choose the OSU lab, a copy of the results will be automatically be sent to Jeff Olsen, our local tree crop extension agent who will make the results available to the WCGA. He will also help you interpret your results if you ask. Otherwise, please cooperate by sending Jeff a copy directly. If you wish to remain anonymous, please do by so blacking out your name and address, substituting a general region or vicinity. Mail the copy to :

Jeff Olsen
OSU Coop. Ext.
2050 Lafayette Ave.
McMinnville, OR. 97128
Ph. 503-434-8915

Email : jeff.olsen@orst.edu

For further information and an analysis of past test results, check the WCGA web site www.wcga.net (click on foliar analysis project) or contact me directly. Thanks!





A MESSAGE FROM THE PRESIDENT

We've had a cool, cloudy spring in the Northwest's west side of the Cascades and our trees look about 10 days behind schedule; full of lush growth and bending branches, and in need of some sun and heat to harden them off for the coming crop. No telling how the pollination will go; some years we suffer from less than ideal temperatures around here, and it's too early to ponder the extended weather forecast. No matter what happens, I find it just about impossible to know the extent of the crop until

just a few weeks before harvest.

But the hopes of local growers are up, and many are expecting large increases in production this year as their young orchards mature. That's where one of this year's WCGA programs comes in. With more chestnuts arriving in the marketplace, we need to get going on some educational and promotional efforts in our common behalf. While this organization leaves marketing to individual members, there's no reason why we together, shouldn't be greasing the wheels a bit. Your board of directors has set aside about \$2,500 this year to begin some educational and promotional activities. The planning season has officially begun. As an all volunteer organization, we hope to make the most of our resources. So far, favored ideas are producing an educational brochure, and orchestrating a timely press release campaign promoting the product. If there are to be any site specific seasonal events, the plan continues to make them self-sustaining rather than supported by WCGA funds. All members are encouraged to contact board members with suggestions, strategies, and hopefully a helping hand. Some of you no doubt have some experience or expertise worth sharing.

On another "planning" topic, it's already time to think about next year's annual meeting. It's scheduled for sometime next summer and tentatively a two day event adding a field day to the usual program. The location has yet to be decided. One idea is to have the meeting in northern California as an alternate to this year's Oregon location. Another tempting idea is to coordinate the date with the annual Northern Nut grower's meeting coming to Western Washington in August of 2003. In other words, make it possible for presenters and participants to attend both meetings in the same week and in reasonable proximity. Decision time is coming, so if you have thoughts or program ideas, please contact any board member.

As you may have learned, chestnut orcharding takes a bit of good luck, not just lots of savvy. I wish you a prosperous season!

Christopher H. Foster

EDITOR'S NOTES

With this issue we begin our fourth year of publication of the Western Chestnut. We've had some great contributions from writers, both members and others, and unless you're an expert in chestnuts you're bound to have learned something new.

With this issue we continue providing "good stuff" to our members. Chris Foster gives us information about doing our annual leaf analysis and emphasizes the importance of participation. Harvey Correia provides information on the meeting that took place at U.C. Davis regarding importation of scion wood and the possible relocation of the chestnut germplasm repository to California. We have another outstanding article from Anthony Boutard, this time on nut rot, what causes it and what measures can be taken to prevent it.

If you haven't taken time to thank our newsletter authors for their contributions both in this issue and past issues, do it now. Literally hundreds of "writing and research hours" go into every issue.

Carolyn

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Editor Carolyn Young
Phone: (360) 887-4520 FAX: (360) 887-3669
email: Carolyn@ChestnutsOnline.com

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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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Chestnut Germplasm Repository and Import Project Underway for California

by Harvey Correia
Harvey@Chestnuts.us

Shortly after planting my Colossal or Schard in 1999 I became interested in growing other cultivars because of articles I had read or discussions that I had with other growers and enthusiasts. While there are certainly important advantages to growing cultivar 'Colossal,' namely productivity, size, and early harvest (an advantage for certain markets), I believed it worthwhile to evaluate other cultivars. This interest increased after I attended a national chestnut convention held in Marradi, Italy in October 2001.

I considered trying to get an import permit to acquire scion wood of other cultivars, but was discouraged by USDA and California officials. When I met U.C. Davis dean Neal Van Alfen and his wife, Pam Kazmierczak, during the WCGA orchard tour in September 2001 I was very pleased to learn of their enthusiasm for chestnuts. In December of 2001, it occurred to me that U.C. Davis might be interested in acquiring additional cultivars, or might at least be able to help me obtain an import permit. I contacted Pam, and she enlisted the services of Deborah Golino, Director of Foundation Plant Material Services at U.C. Davis. Pam was soon encouraged by Sandra Anagnostakis from the Connecticut Agricultural Experiment Station to also pursue the possibility of moving the federal chestnut germplasm repository from Texas (where chestnuts won't grow) to California.

On April 18, 2002, a meeting was held at U.C. Davis to discuss this project. The meeting was attended by Pam Kazmierczak, Deborah Golino, Sandra Anagnostakis, professor Chuck Simon from the U.C. Davis germplasm repository, Michael Gold from the University of Missouri, retired U.C. Davis professors Kay Ryugo and Roger Romani, Nancy Fowler-Johnson from Fowler Nurseries, and others including WCGA directors Lucienne

Grunder and myself, and George and Suzette Canfield. Deborah Golino described some of the existing materials maintained at U.C. Davis and explained the "fair allocation policy" to ensure that limited materials are distributed in an equitable fashion. Chuck Simon explained the background of germplasm repository system in the United States, and the fruit and nut crops that exist at the U.C. Davis facilities. Sandra Anagnostakis explained the characteristics of the various chestnut species,

There was enthusiasm for the possibility of moving the federal chestnut germplasm repository from Texas (where chestnuts won't grow) to California, and for establishing another germplasm repository in Missouri.

various diseases, and existing breeding projects. Regulations governing the importation of plant materials into California from foreign sources as well as from the eastern U.S. were also discussed.

There was broad support among the attendees for moving chestnut germplasm repository to Davis, and for establishing another germplasm repository in Missouri. U.C. Davis could obtain the necessary import permits. The primary benefits would be to ensure genetic material for breeding chestnut trees for resistance to various diseases and insects, as well

as improving cultivars which could be made available to growers. Having repositories in both California and Missouri would be beneficial, as some species will grow better in the western or eastern environment, and a backup would help ensure against loss of the genetic material. Pam indicated that she and Neal could provide the disease screening for imported materials. Funding for acquiring an import permit and maintenance of the repository were also discussed. It was agreed that Deborah would apply for a grant from the Northern Nut Growers Association, as this project fits in very well with the goals of their current grant program. There is also the possibility of obtaining some funding from a California nursery association. Chuck Simon discussed the expenses related to maintaining a germplasm. This can be fairly costly, and needs to be funded from the USDA budget, though he explained that he has some discretionary general funds to help get started. Chuck will start by protecting the existing germplasm at the small test plot at U.C. Davis, and Deborah and Pam agreed to try for permits for importing material next spring to U.C. Davis.

Pam also informed the group that the federal project on chestnut research (NE-140) is holding their annual meeting at U.C. Davis October 24-27, 2002. Much of the discussion at the meeting will deal with chestnut blight although considerable discussion on general chestnut culture will also take place. Pam invited anyone interested in chestnuts to attend the meeting. I'll try to provide updates to these items as information becomes available. Information about the group can be found on the federal web site at: <http://lgu.umd.edu/project/home.cfm?trackID=11>



Dealing with Nut Rot in the Chestnut Orchard

by Anthony Boutard

Email: aboutard@orednet.org

A sure sign that the chestnut industry is maturing, nut rot is becoming a concern among US growers. The Australians are grappling with very serious rotten nut problems.

The fungi that cause rotten nuts are both general plant pathogens (fungi that cause plant diseases) and soil fungi that decay plant materials that come in contact with the soil.

Chestnuts are a minor crop in the United States. There is virtually no domestic research on the tree as a crop plant. Growers need to glean information about cultural practices and disease management from other regions of the world, primarily Australia and Europe.

Among the pathogens which infect the nut on the tree, there is *Phoma endogena* Speng. in Europe (Breisch 1995) and *Phomopsis castanea* Sacc. in Australia, New Zealand and Chile (Osmonaliev et al. 2001, University of Chile 2001). Both are general pathogens on the tree and, with the exception of causing nut rot, do not appear to cause a decline in the health of the tree. *P. castanea* is an endophyte, meaning it resides within the trees' leaves and branches. Both fungi enter the nut early in its development and cause a brown kernel rot. *P. endogena* is thought to be borne on pollen. The mode of infection for *P. castanea* is not certain; it may be carried by pollen or enter through the hilum which is connected to the tree's vascular system while the nut ripens. The fact that infection of the kernel by *P. castanea* is correlated with high humidity and summer rainfall (Osmonaliev et al. 2001) suggests to me that transmission through the air is most likely.

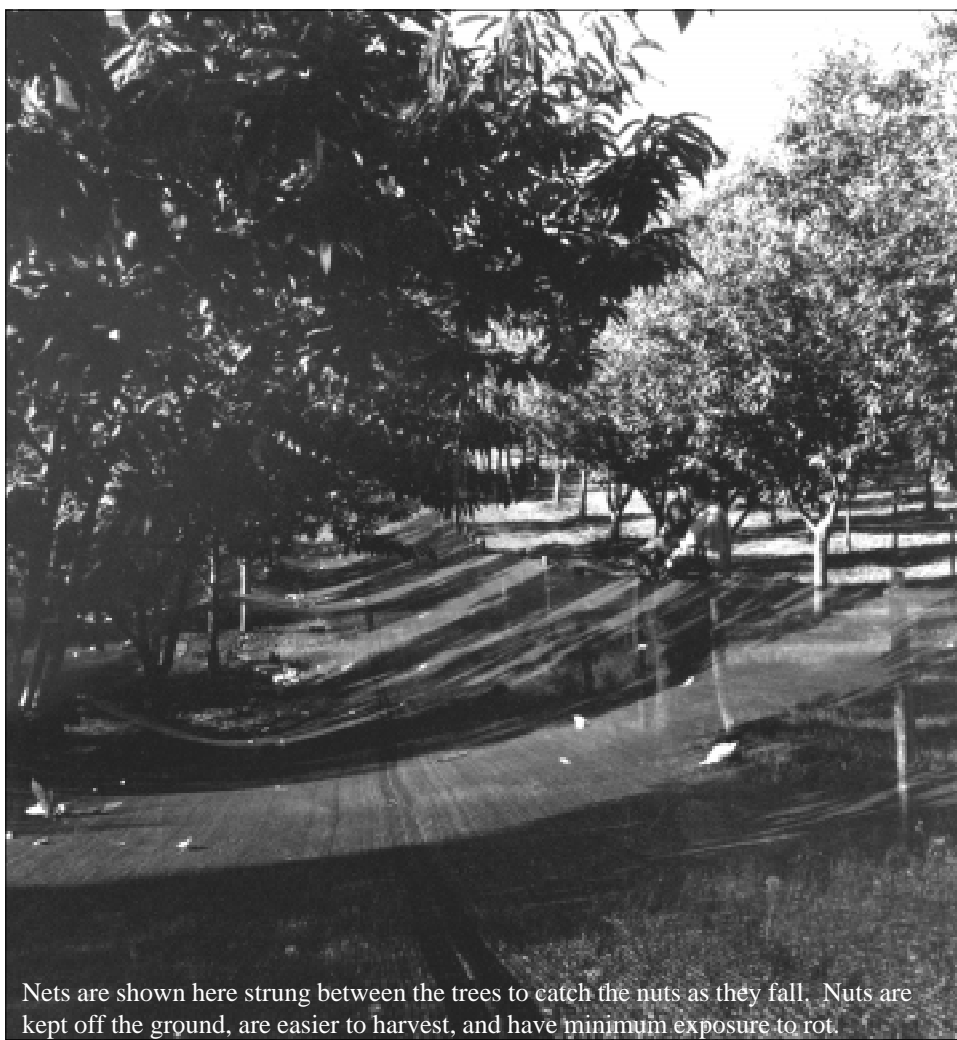
Throughout Europe, the black rot of chestnuts caused by *Rhacodiella castaneae* Peyr. is a significant problem. The black rot overwinters in old nuts left in the orchard, and does not appear to infect other parts of the tree. Nuts are generally infected upon

contact with the soil, but a minor amount of infection also occurs while the nuts are on the tree (Breisch 1995, Tian and Bertolini 1997).

In the western United States, there are probably members of both genera which cause nut rot in oaks. Oaks and beeches are in the same family (Fagaceae) as chestnuts, and acorns are similar in composition to chest-

nuts, albeit with a greater concentration of tannins. Ben and Sandy Bole had some rotten nuts analyzed by USDA pathologists, and an unidentified species of *Phomopsis* was cultured from their nuts. It is possible that kernel rot problems in the Pacific Northwest will be traced to our native oak, *Quercus garryana*. Acorn and beechnut diseases have little economic impact and are seldom studied.

Penicillium expansum and *Botrytis cinerea* also infect chestnuts. These widely distributed organisms attack a broad array of fruit. *P. expansum*, or blue mold, is of particular concern because it produces the carcinogenic mycotoxin, patulin.



Nets are shown here strung between the trees to catch the nuts as they fall. Nuts are kept off the ground, are easier to harvest, and have minimum exposure to rot.

Controlling Kernel Rot in Storage

A chestnut is over 40% carbohydrate in composition. Although chestnuts can be preserved for a long time by drying, consumers demand fresh nuts with high moisture content. In order to retain their fresh eating quality, chestnuts are typically stored in a cooler at a relatively high humidity. Kernel rot fungi grow at typical refrigerator temperatures and the nutritious kernel of the chestnut provides a fine substrate for growth.

Fresh chestnuts are best stored between 35.6 ° F (2° C) and 27° F (-1° C). (Ridley and Beaumont 1999, Breisch 1995, Anon 2002) Within this temperature range, progress of decay organisms is stalled. It must be stressed that optimal storage temperature does not kill the decay organisms; they merely grow slowly or stop growing while at that temperature. The freezing

point for chestnuts is approximately 24° F (-4.5° C). Controlled atmosphere storage at 14% O₂ and 30% CO₂ will impede fungal growth (Breisch 1995). Careful post-harvest handling may stall the development of kernel rot, but growers need to anticipate less than optimal storage once the nuts are out of their possession. Tian and Bertolini (1997) found that growth of *Rhacodiella castaneae* was stalled at 28.4 °F (-2° C) and 24.8 °F (-4° C), but at 32° F (0°C) the chestnuts had a similar incidence of rot as those held at room temperature (20° C). The progress of the mold was slower at lower temperatures, but by nine weeks there was little difference between those held at room temperature and 32° F (0°C).

Most produce coolers at distributors and grocery stores are maintained at a temperature above the point at which decay is stalled. At best, once the consumer brings the nuts home they may be stored in the refrigerator, but more likely they will be left on the counter. While an uninfected nut can be stored safely at home refrigerator temperatures for a long time, up to several months, an infected nut will decay rapidly.

Italian and French growers use carefully regulated soaking and drying process, called the *novena* (Italy) or *trempage* (France), to encourage biochemical changes which thwart fungal growth susceptibility during long-term storage (Bounous and Bounous 1999, Breisch 1995). It is a labor intensive process and has evolved over the centuries in response to the kernel rot problems endemic in that region. Because it entails the breakdown of simple sugars, the flavor of the nut is also changed. There is no systematic research to suggest that this method, or a variation of it, would be effective for growers in the western United States.

Bearing in mind the problem inherent in reliance on storage conditions alone, what follows are factors under the control of growers that can affect susceptibility of the fruit to kernel rots.

Tree Nutrition

As fruits are held longer in storage due to more extensive shipping and a desire to extend the availability of fruit, researchers have paid more attention to factors responsible for longevity in storage, as well as general fruit quality. Research has established calcium and potassium, in particular, as important nutrients with respect to fruit quality.

Fruits with higher calcium content will store better and longer than the same varieties with lower calcium content. Much of the research on the effect of nutrients on fruit quality is conducted on fruit such as apples, melons and tomatoes. However, growers with nut quality problems should, as a first step, review their foliar analysis. Also, keep an eye on zinc, a trace element linked to fruit quality.

Potassium is associated with the sugar content in fruits. As potassium approaches a deficient level, sugar content in the fruits is reduced. Although there is no definitive research on potassium, sugar content and susceptibility to kernel rot in chestnuts, avoiding potassium deficiencies is a good practice.

To correct potassium deficiencies, K-mag (sulfate of potash magnesia) can be applied by certified organic and other growers. Sulfate of potash fines can be used for a rapidly available soil application. These fines can also be applied through micro-irrigation systems or as a foliar spray. Because chestnuts grow on acidic soils, gypsum is the choice for addressing calcium deficiencies for both the certified

organic and other growers.

Foliar analysis allows growers to track nutritional deficiencies that can predispose nuts to kernel rot.

Variety Selection

Susceptibility to the fungi which cause rotten kernels varies by variety. Breisch (1995, INRA 1998) rates French nut varieties by their conservation as fresh nuts, specifically their predisposition to kernel rot. The Italian cultivars possess a similar range of susceptibility (Bounous and Bounous 1999). The following table summarizes that information for the varieties available in North America, based on Nave's (1998) inventory:

<u>Bad</u>	<u>Average</u>	<u>Good</u>	<u>Very Good</u>
Belle Épine	Marron du Var	Bouche de Bétizac	Marigoule
	Marsol	Maraval	
	Précoce Migoule	Maridonne	

Growers establishing new chestnut orchards may want to consider this information. Unfortunately, for the vast majority of cultivars available in North America there is no basis for evaluating their susceptibility to kernel rot.

Harvesting and Orchard Floor Management

In an effort to reduce the incidence of black rot in fresh chestnuts, French researchers at INRA evaluated nets suspended beneath the rows in the chestnut orchard. The presence of black rot and other soil borne nut molds dropped dramatically as the nuts never touched the soil.

Regardless of the practicality and economics of employing netting in the orchard, the results of the INRA research are helpful because they illustrate the value of reducing or eliminating contact between chestnuts and the soil during harvest. Growers need to establish a harvesting routine that reduces or eliminates contact with the soil.

Clearly, having bare soil in the orchard during harvest should be avoided, especially for growers with kernel rot problems. The bare soil practices used in hazelnut production are not a good model for chestnuts. Growers need to evaluate orchard floor cover crops that allow easy collection of nuts free of soil. The orchard floor management regime for a young orchard with plenty of light beneath the trees will necessarily be different in a mature, shaded orchard.

The problem is most serious for growers using mechanical harvesters. Unless used with great care, these machines do a very good job of dusting nuts with soil fungi, thus facilitating the development of kernel rot. The problem can be exacerbated if the shells are scratched or nicked during the harvest.

Allowing the grass and weeds in the orchard to grow rank over the summer, then cutting them just before harvest to create a coarse thatch layer between the soil and fallen nuts is one approach. The alternative is to encourage the formation of a vigorous and low turf of grass and clover which would also provide a buffer between the nuts and soil.

Orchard sanitation is important. Avoid leaving unharvested nuts in the orchard, and trim away dead wood. The grower needs to keep potential sources of disease at a bare minimum.

Conclusion

As more chestnut orchards come into production, growers in Michigan and the western states will have to keep an eye on

Continued on next page

NEW CULTIVAR REGISTERED

by Sandy Anagnostakis
Email Sandra.Anagnostakis@po.state.ct.us

Dr. Kay Ryugo, retired from the University of California at Davis, has registered a new cultivar of chestnut. Named 'Yolo Grande', the tree is growing in the Davis collection, and was spotted by Ryugo and by Michael Nave as having very good nuts. The tree will be propagated with the cooperation of Pam Kazmierczek from Davis, who is working with Deborah Golina to improve cultivar availability for western chestnut growers. The source of 'Yolo Grande' is unknown, but it is presumed to have been planted by Ryugo's predecessor at Davis. The nuts are striped, and are relatively easy to peel. It is named for Yolo county (where Davis is located), and for its good size. I think the tree looks like a Japanese X European hybrid, such as 'Colossal' and I am pleased that western growers will have another cultivar to try.



Nut Rot, cont'd from p. 5

kernel rot. Careful management of the orchard is the primary defense. Common sense approaches such as maintaining healthy trees, anticipating deficiencies through regular foliar analysis, and avoiding contact between nuts and the soil should be included in an orchard's management regime.

It is possible that domestic chestnut growers will be confronted with a kernel rot caused by an endophytic fungus, like *P. castanea*. If that happens, we will need to be more sophisticated in the post-harvest storage and handling of chestnuts. At the present time, careful management is the best approach.

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**Don't forget to do
your foliar analysis
in August.**

Letters to the Editor . . .

Questions from David Klinac, of New Zealand

Being on the opposite side of the world, it's often hard for us to know what's happening in all those far away northern hemisphere chestnut producing countries. Here's my pet top 10 list of questions to ask any overseas visitors passing through....

1. Do you have a nut rot problem and if so, what do you do about it? We have a major problem with *Phomopsis* and other similar post harvest rots, especially where they cause internal rot in otherwise perfect looking chestnuts.

2. How do you handle and store your nuts, and for how long will they keep? We can manage for several months after our March-April harvest, but not reliably through to the onset of the Northern Hemisphere season. We're trying lots of new ideas, but still looking for the perfect handling and storage combination.

3. Any processing going on over there? We're now trying to get as much added-value product as possible, and move away from dependence on either local nut or export fresh nut sales.

4. Is *Phytophthora* root rot a problem, and how do you treat affected trees? We haven't got chestnut blight or gall wasp here, but *Phytophthora* is a problem, and phosphorous acid sprays or tree injections are increasingly being used.

5. Is rootstock incompatibility a problem? Often difficult with our mixed up hybrids. Does anyone out there have a "universal" rootstock?

6. Is nutrition a problem? Something we're still trying to get to grips with here.

7. What are your production costs and returns like? We work on roughly NZ\$2/kg costs [US\$ = \$0.97] and would like over NZ\$3/kg [US\$ = \$1.46] return to grower.

8. So would you like to buy more NZ chestnuts? I have to ask that.

9. Can I interest you in mechanical or chemical shelling and peeling; or flotation grading to sort out the good nuts from the bad; or a quick way of juice extraction and sugar content testing? These are some of the research developments we're most proud of.

10. Any chance of joint NZ-US funded research projects or similar industry collaboration? I've got to ask that question too.

Regards,

David Klinac

Ruakura Research Centre,
Hamilton, New Zealand

The Cook's Corner



by Carolyn Young

If George Washington Carver could come up with over 300 uses for the peanut, then I should be able to come up with at least one use for the Nevada chestnut. I don't find its taste particularly appealing and it's nearly impossible to remove all the pellicle. After an excruciating session one afternoon of peeling these nuts, then cooking them in garlic and beef broth I was disappointed that even my basset hounds turned their noses up and they don't reject anything.

After bouncing from one idea to another it finally dawned on me that the uses for the nut didn't have to be in the form of food, so I started exploring other options. What I came up with was chestnut soap.

The chestnut is not found on any list of known allergens that I know of, and for those of us who endure frequent allergic outbreaks a mild soap is a real asset. I've had two trips to the emergency hospital since January for severe allergic rashes and I'm sitting here right now with welts on my neck because I dared to have a perm a few days ago. Mild soap, therefore, is way up on my priority list.

An extensive internet search turned up no chestnut soap in the marketplace. My premise was that it would be similar to using oatmeal soap. I've used Aveenobar (a colloid of oatmeal) for years when the itching was bad. It always helps.

I'd never made soap but decided if the pioneers could do it so could I. With the help of a couple of good books on soap making and 10 lbs. of suet I was off and running. I rendered the suet into tallow, and then made the basic soap by adding lye water. Meanwhile, I took the Nevadas which had been dried, put them in our cement mixer with a granite rock about 10" in diameter and let it all tumble for about an hour and a half. Nearly all the nuts were shelled and most of the pellicle removed.

After a week or so I grated the basic soap, melted it and added the chestnut crumbs which were prepared by soaking the dried, peeled Nevadas and then running them through the food processor.

Commercially made soap molds are expensive so for my molds I used a plastic rain gutter downspout cut into 1" segments. The mixture is thick enough it doesn't run under the molds which have been laid out on a cookie sheet covered with aluminum foil.

What I ended up with was a rustic looking soap that's as mild as anything I've used. The color varies from tan to a dark chocolate brown depending upon how much pellicle remained on the nuts and whether you use the water you cooked them in for the soap or clear water from the tap.

The next project is an all-vegetable oil soap.

So who said Nevadas were useless?



Have a recipe you'd like to share?

Send it to the Editor,

PO Box 841,

Ridgefield, WA 98642.



Dunstan American X Chinese hybrid Chestnuts

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NNGA's Annual Meeting to Highlight American Chestnut Foundation's Meadow Research Farm

The 93rd Annual Meeting of the Northern Nut Growers Association is being held at Emory and Henry College in Emory, Virginia, in cooperation with The American Chestnut Foundation's Research Farms in nearby Meadowview, Virginia. The meeting will take place between Sunday and Wednesday, August 4-7, 2002.

Information on the meeting can be found at the NNGA website, www.northernnutgrowers.org, or you may contact Fred Hebard, Meadowview Research Farms, The American Chestnut Foundation, 14005 Glenbrook Ave., Meadowview, VA 24361. Phone number is (276) 944-4631, and Fax is (276) 944-0934.

A registration form is available at the website and you may register on-line.

Visit the WCGA Website

www.WCGA.net

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Contact Sandy Bole if you have questions.

2002 Membership Renewal / Application

Western Chestnut Growers Assn., Inc.

Date

(Please print)

Member
First Last

Farm/Business/Organization Name

Address

City State/Province Zip/Postal Code

Phone () Fax ()

Email: Website URL:

\$25.00 individual membership
\$35.00 household membership
\$26.50 Canadian members
Ttl amount enclosed: \$

The following information is **voluntary** on your part, but will help your association better understand the growth and status of the chestnut industry. Check those boxes that apply:

- ☐ Commercial Grower ☐ Prospective Commercial Grower ☐ Researcher/Educator ☐ Hobbyist
☐ Nursery ☐ Consultant ☐ Vendor

Acreage in chestnuts: _____ acres Chestnuts first planted in year: _____ ☐ Not yet planted

Percentage of seedlings: _____

- ☐ Sell grafted trees ☐ Sell seedlings ☐ Sell scion wood ☐ Sell seed nuts ☐ Sell chestnuts retail
☐ Sell chestnuts wholesale ☐ Sell mail order ☐ Sell on-line ☐ Sell at farmers' markets
☐ Sell at farm stand

Varieties grown: _____

2001 Production: _____

Send this form with your check (\$25.00 individual membership, \$35.00 household membership) made payable to Western Chestnut Growers Assn., Inc. to Ray Young, Secy/Treas, PO Box 841, Ridgefield, WA 98642.