

American Chestnut Cooperators' Foundation

2006 Newsletter

Send your report via accf-online.org/greport.htm or to 2667 Forest Service Road
708 Newport, Virginia 24128

Dear Friends and Cooperating Growers:

We shall distribute American chestnut seedlings and/or nuts to growers who have made the annual \$20 donation to ACCF research, have sent in a completed Grower Agreement Form and have reported in 2006 on the status of their previous ACCF planting projects. There is no monetary profit in our chestnut distributions. Each year we aim to break even. After learning the nursery cost per bundle of seedlings, we make a price to include the average cost of priority mailing east of the Mississippi. The past few years, the Foundation has lost money on seedling distributions, and this year the nursery costs have gone up one dollar per bundle of 25. Therefore, **the 2006 cost per bundle of 25 American chestnut seedlings is \$25. Growers west of the Mississippi need to add \$5 per bundle** to cover a higher mailing cost. Please make all checks payable to ACCF.

From the 2005 Virginia harvest we sent 2,378 nuts to cooperating growers, 7,541 nuts to the nursery in West Virginia, **and** the nursery distributed **5011 American chestnut seedlings** to our cooperating growers.

MANY THANKS

Right up front, we wish to thank all the volunteers who helped with the 2005 chestnut harvest: **Tim Logan, Jack Torkelson, Bruce Engen, Gary Pace, Philip Latasa, Michael Linder and Steve Prupas.**

To pitch in at harvest, e-mail Lucille at accf@hughes.net for a date and directions. We are likely to begin picking the burs mornings on the week of September 18, leaving our yard at 9 a.m.; we should begin getting the nuts out of the burs in afternoons by October 2. We will not be scheduling any harvest help for the weekends of September 16, 23 and 30 because the home football games monopolize local accommodations and highways.

A CHESTNUT PARABLE

Before the deer herd had become a problem, perhaps 20 years ago, when we did not have enough cooperating growers to plant all our seednuts, I used to plant the extras along the edges of wildlife clearings in the National Forest or along the Forest Service Road. Since they were planted without protection, nearly all of those chestnuts have been eaten. Fewer than a dozen have survived continuous munching and exist as tiny bushes. Just one among the hundreds planted has made a great escape. It is almost 4 inches dbh and 30 feet tall, growing in semi-shade on the steep bank opposite our driveway. Last winter when it developed a fist-sized canker halfway up the trunk, I expected the top to die this summer. However, in September, the only dead foliage is on a lower branch. Gary's opinion of this tree, Keep an eye on it. In keeping with the designations assigned to our yard seedlings, we named this chestnut, G-wiz.

This story illustrates several points: First, it is unwise to assume that chestnuts can grow into trees without benefit of protection cages. Second, the larger a chestnut can grow before its first blight attack, the better its chances to express blight resistance. Third, it is very important to note when a chestnut is first attacked by blight and observe its reaction. Fourth, a chestnut which has not been attacked by blight (blight free), however lovely to look upon, is not yet anything special. Finally, one observation of a blight resistant reaction is insufficient evidence; to be included in our breeding program, the chestnut has to prove itself by surviving five to 10 additional years without death in its crown.

ESCAPES

As more and more enthusiasts comb the woods each year, more discoveries of large American chestnuts (over 10 inches dbh) are reported. In most cases these chestnuts are disease escapes, growing in the far north, south or western edge of the natural range for the species or in a pocket sheltered from normal wind dispersal of the blight fungus. They may be blight free or they may have grown quite large before their first blight attack. Like my G-wiz chestnut, they also bear watching. Although they are likely to die from blight within a few years, there is always a chance that some may prove to have durable blight resistance.

RAISING AMERICAN CHESTNUTS

The ACCF chestnuts we distribute to you, our cooperating growers, have much greater chances to express blight resistance. We estimate at least 10%. The best possible result will be obtained by growers who plant in well-drained, sandy loam soil, in full sun, on cove slopes facing North to East at altitudes below 2,500 feet, protecting against injury to the trunk and leader of each seedling with 5-foot-tall wire caging, and regularly checking seedlings to deal with other problems as they arise.

The most important site requirement is that it be well-drained, to avoid the possibility of root rot. Growers who have discovered root rot among their plantings should try to limit its spread by fencing off and marking the area with bright flagging, avoiding work there when the ground is wet, planting grasses but no seedlings downhill from the infected area and treating tools, gloves and footwear with a 20% Clorox solution immediately after use there (for more information, scroll down and **see Phytophthora, in the 2003 Newsletter**).

Tree mats (Forestry Suppliers, Inc.) are helpful in **controlling weeds inside the cages**, but they also offer cover for **voles** that can nip off the chestnut roots. Weeds and grasses are serious competition to young seedlings and will greatly retard their growth, leaving the seedlings at high risk for a longer period. In very fertile plots we are unable to control the weeds without tree mats. We lift the mats two or three times a year, pull weeds and put poison (Prozap) into vole runs and tunnels.

Japanese beetles can be picked off by hand from lower branches and hit with Sevin on leaves that are out of reach. Where a plot is isolated, you can spread Milky Spore over the grassy area to wipe out the Japanese beetle problem.

Ambrosia beetles can be eliminated if the infestation is caught early in spring and sprayed with permethrin through that growing season and again in March of the next year. When a small chestnut **seedling** (under an inch in diameter) is **girdled by blight**, the stem can be cut near ground level and the wound covered with soil. If its root system is healthy, a new shoot will take over, grow rapidly and give the chestnut a second chance.

Pruning is not usually advised, but sometimes you need to cut out blighted branches. This should be done in the fall when the blight fungus is least active. Cover the wound with pruning seal. When a chestnut has more than one stem, choose the strongest and cut the others below ground level, cover these cuts with

soil. The first swollen blight canker often occurs at the base of a chestnut. We advise making **mud packs** to cover **basal cankers** through winter dormancy and keep them in place, watering occasionally, until the seedling is 1.5 inches in diameter.

When the **leaves** of a seedling are **not dark green**, there may be a nutrient deficiency. This can occur occasionally in a plot where other seedlings are making healthy growth. We spray yellowish leaves with magnesium sulfate and repeat the following week if their color seems to be improving. Otherwise, spray chelated iron and observe whether it makes a difference. This is quicker and cheaper than individual soil or leaf tests for each plant.

About midway through the growing season, often the **leaves** on the tips of branches in many chestnuts become **rumply and curled up**. This is an unidentified disease, possibly a virus. It is not lethal, but it sharply curtails growth for the rest of that season. This year we noticed that in many cases the curly leaves are lighter in color than the other leaves on the chestnut. We sprayed magnesium sulfate and iron chelate on the curly tips, on the possibility that the chestnuts are deprived of nutrients. In many cases, the curly leaves turned a darker green, and in several cases the seedling resumed production of normal leaves.

GROWERS REPORT

This year I have 406 American chestnut seedlings growing, of which 105 are from chestnuts planted last winter. My tallest is Pacman E, which has had swollen blight cankers since 1999. Six of my seedlings are bearing nuts. My losses are nearly all attributed to voles or blight.

As of **December 15**, we have received **152 reports**, for a total of **10,092 ACCF chestnuts reported**. The numbers above will be updated, as more reports of chestnuts from ACCF distributions come in.

GRAFTERS REPORT

In the past I have reported some instances of high percentage takes with bark and cleft grafting methods. Unfortunately, the numbers have not held up. Many bark and cleft grafts make spectacular growth on incomplete unions, but for many years they remain highly vulnerable to total wipeout from high winds. Comparing my notes, I was unable to find anything to account for this uneven reliability. So I have

given up on them; beginning this year I am making only whip and triangle grafts. John Elkins still has good success with bark grafts.

I have 90 grafts growing well, of which only 9 are new this year. My tallest is Thorofare Gap, at 50 feet; it was grafted in 1991 and has had swollen blight cankers since 1998. Thirty-one of my grafts are bearing nuts. Losses are attributed to incomplete unions and blight.

A few of our best grafters have reported early: Carl Mayfield has 42 ACCF grafts, of which 7 are new this year. Ed Greenwell has 49 grafts, of which the tallest is 25 feet. Carl & Ed make mostly nut grafts. Harold Pierce has 6 grafts, of which 3 are new this year; Harold grafts into chinquapin stocks.

NATHAN PEASE UPDATE

The end of this growing season finds Nathan Pease 25 feet tall, with no new blight cankers and its one trunk canker surrounded by swollen tissue which has expanded inward to cover a little of the exposed wood. We are watching it: two years down and 8 to go.

We thank the National Wild Turkey Federation for continuing generous support of our cooperative research with the **Virginia Department of Forestry, USDA-Forest Service** and **Virginia Tech**, establishing and maintaining forest plots of ACCF all-American chestnuts.

The **Pandapas** plot now has 79 American chestnuts growing. They are mostly first-generation crosses among chestnuts that were not represented in our original intercrosses: Thompson, NC Champ, Ragged Mt, and JEB. We also planted some volunteers into which we plan to graft the parent trees (above). From 2006, we have one JEB graft started. The tallest chestnut in this plot is a 5-foot (Thompson x NC Champ) from a nut planted in 2003.

At **Turkey Run** 18 grafts survive, and two of these are new in 2006; all are in the (Ruth x Miles) family, F2s. The two grafts killed in 2005 by ambrosia beetle have sprouted back; time will tell whether these sprouts come from the grafts or the blight-susceptible stocks. One graft made male flowers only.

Three seedlings planted in 2002 survive; the tallest is 5 feet. We direct-seeded twelve more chestnuts harvested from a (Ruth x Miles) F2, by planting them inside

2-foot tall, fine-mesh hardware cylinders that were sunken a foot into the soil which contained glass shards; most germinated, but all were killed by voles. To plant these places we shall try one more time, in winter of 2007, using seedlings grown from an open-pollinated F2. Most of the work in this plot is management, cutting the other trees, so that the chestnuts are the tallest trees and wind dispersal of pollen (perhaps next year) may be most efficient.

In the **Lesesne State Forest**, Nelson County, we have 234 seedlings mostly growing from various F1 and F2 intercrosses along with a smaller number of open-pollinated nuts from the parent trees of these crosses. Sixty-four of these are from nuts planted last winter; some are survivors from a test planting (to determine whether *Phytophthora* was still a problem) in 20 holes which were treated with SubdueMax drench in 2004 and 2005 after the previous seedlings died of root rot. This year, all seedlings and grafts in the lower half of the 3.4 acre plot received a dressing of gypsum, which is said to disrupt *Phytophthora* reproduction, and the grafts and seedlings near or downhill from the 1980 Thompson and Ragged Mt grafts (which have survived with blight control for 25 years and are now seriously threatened by *Phytophthora* root rot) were surrounded with a thick mulch of grass clippings, to inhibit spread of this root disease. Fungicide treatments are being continued only within the canopy of the two large grafts, above.

OUTSTANDING COOPERATORS:

John B. Bushmann, Ken James, Karl Mayfield, and Violet Pesinkowski continue extensive support for and participation in American chestnut restoration research.

Philip Latasa was most helpful during the 2005 chestnut harvest and also volunteered many hours working in the Lesesne, lopping off ailanthus, digging and preparing the planting holes, making protection cages and pruning trees that shaded the planting area.

Jenny & Lizzy Cooper again spent their spring vacation grafting American chestnuts.

FOR INTERNET RESOURCES: Scroll down to the end of the 2005 or 2004 newsletter.

We are a very small, nonprofit foundation, capable of doing a very big job for American chestnut restoration because our scientists and officers are all dedicated volunteers and the Foundation neither owns nor rents property. Thus, we can

make progress with a small budget, because funds are needed only to support the research, to pay for student assistance in the laboratory and field, for plot maintenance and supplies, and for correspondence and mailing seednuts to you, our cooperating growers. The thousands of ACCF American chestnuts growing in research plots on public lands and on your lands, and you, our cooperating growers, are the most important assets of our Foundation. Our rewards are in knowledge reaped from scientific research and field experience and shared with the public. We thank you for joining in and supporting our work and look forward to counting many more of your reports among this year's rewards.

Respectfully submitted,

Lucille Griffin, Executive Director

Other ACCF Directors:

Gary Griffin, President, Professor of Forest Pathology, Virginia Tech

Dave McCurdy, Vice-president, Superintendent, Clements State Tree Nursery, WV

John Rush Elkins, Secretary, Research Chemist, Professor Emeritus of Chemistry, Concord College, WV

William Pilkington, Treasurer, Financial Advisor, Ghent, WV

Ed Greenwell, Director of Tennessee chestnut projects, Electrical Engineer, Cookeville, TN

Dedicated to the restoration of American chestnuts