

American Chestnut Cooperators' Foundation

2000 Newsletter

Send your reports soon to <http://ipm.ppws.vt.edu/griffin/accf.html> or

2667 Forest Service Road 708

Newport, Virginia 24128

Dear Friends & Cooperating Growers:

1924 Chestnut harvest

By Glenn "Tink" Smith, Piedmont, WV: "As a boy I saw hundreds of tall healthy chestnut trees in my home town. I used to gather them by the bushels. We had no deer, but we had to fight the squirrels and chipmunks for the nuts. Three hundred trees in one orchard were 3 and 4 feet in diameter at the stump and 50 to 70 feet high. We clubbed the nuts from the trees or took 10- or 20-pound rocks and ran at the tree to strike a jarring blow. Clubbing them out made fine baseball pitchers of us all. The greatest lefthand pitcher of all time, Lefty Grove, often joined us in these harvests. I doubt I will ever see the return of the chestnuts, as I am 90 now, but keep trying: the American chestnut was the best food for wildlife in our area ever."

Lucille strikes out

My best efforts to obtain grants to support our research have failed. I believe that "available" funds are routinely assigned in advance to insiders. If you have professional fund-raising skills, please volunteer to help out. We pay \$10 per hour to the laboratory assistant and graduate student who are working to characterize hypovirulent strains of the blight fungus for use in integrated management for chestnut blight control. For the past 2 years, ACCF funds have been insufficient for this and other laboratory expenses, necessary for investigations at the molecular level. (Our plot protection & maintenance is like yours, out-of-pocket.) I do not send out bills for dues, but must use this letter as a reminder. Please send your \$20. If you forgot last year's, please add it to this year's dues. If you can afford it, please raise your dues.

Research report

From the February 2000 issue of the Journal of Forestry, "Blight Control and Restoration of the American Chestnut", by Gary Griffin: "Site factors may be critical to maintaining blight control for the long periods required for chestnut timber production. Change of a superficial canker over winter into a killing canker has been a problem in maintaining blight control for long periods ... especially at altitudes

above 2,500 feet." Research at Virginia Tech showed much greater stress at higher altitude on the membranes of chestnut bark cells collected in March. Extremes of low temperature in mid- to late winter may cause this stress which weakens the chestnuts' resistance to disease: cankers formerly under control with hypovirulence become sunken and kill trees. Twenty years of research stand behind our recommendations for planting site selection. Rich sites capable of producing big timber are also best for blight control. These sites require extensive management; the competing hardwoods must be cut to keep the chestnuts in full sun.

American chestnuts prefer:

- well-drained, sandy loam soil
- full sun
- slopes facing north, NE or east
- coves receiving the drainage of surrounding slopes
- altitudes below 2,500 feet

Choose a site containing all 5 criteria.

Ideal site indicator signs

- Stumps 3 feet or more in diameter
- Tulip poplars, red oak and cucumber magnolia
- Many American chestnut stems or snag

Growers Report

In 1999 we received reports for 99 growers for a total of 2,494 chestnuts surviving. So far, with **69 reports received**, 2,142 chestnuts survive the 2000 season. This number was **updated 1/26/01**. I shall try to update these numbers once a week, as reports come in. First, we need the total number of survivors and the height of the tallest. If you have not yet described your growing site, let us know how many of the 5 criteria (above) are included. For older trees, report flowering, nut bearing and blight cankers, and note whether blight cankers are sunken, flat, or swollen, rapid- or slow-growing. I have 50 American chestnuts planted over the years still growing in 9 different sites. Only three are large enough to need no animal protection or watering. The tallest (about 22') are the Pacman and Pie trees which have shown blight resistance and produce regular nut crops. Most of the others are protected by 4' diameter x 4' tall wire cages and require watering through droughts. This year, deer have been my biggest trouble; they have become so numerous in the forest that fish line fences are no longer practical. I have tried Tree Guard this season, also, but

the deer consider it just so much icing on the cake. Young chestnuts in or near our forests cannot survive without wire cages.

Seedling & seednut requests

Nursery costs for year-old bare-rooted seedlings have increased to **\$26** per bundle of 25 mailed; we cannot accept COD orders. Up to 30 seednuts are free for the asking to all members who are current with dues. These ACCF distributions are from open pollinations and have potential to inherit blight resistance. Please remember to indicate how many seedlings and/or nuts you want and include a check made out to ACCF and your report about all previous chestnut plantings. Seedlings will be shipped from the nursery in late November. I shall start mailing seednuts in October.

Outstanding cooperators

John Buschmann (VA) has been instrumental in an important cooperative effort with the Virginia Division of Forestry, to reclaim the American chestnut planting in the Lesesne State Forest. (This is the largest planting of Al Dietz's made from nuts exposed to ionizing radiation and, like the VT Airport plot reclaimed in 1999, it had not been maintained for many years, except on one edge where the largest grafts survive.) Last November the VDF cleared most of the overgrowth, exposing many chestnut stems. Buschmann cut dead and diseased shoots around the stems chosen for grafting, donated materials, made the wire cages to protect grafts and seedlings, and poisoned some trees that had been shading out the edges of the chestnut planting.

Ed Greenwell (TN) has made nut grafts of our first all-American selections and most of our original sources of blight resistance. He has also referred more chestnut inquiries to us through his Web site. His youth, skill and commitment to our breeding program have recommended him as an addition to our Board of directors. Thus, next year, you will read of his contributions under a different heading.

Ken James (NY) continues diligent maintenance and extension of the largest American chestnut forest revival project.

Charles Lytton, Giles County 4-H Leader, has once again organized assistance at the Virginia nut harvest by school children from three counties. He also secured funds to pay for protection of extensive chestnut plantings made from nuts raised by these children and erected the cages himself. He and **Jeff Kirwan**, VT 4-H Extension, arranged distribution of nuts and seedlings to school and club growing projects in many Virginia counties.

Carl Mayfield (VA) has been extremely generous in his support of our research at Virginia Tech.

Second generation all-Americans

This is the third year in which I have been able to make controlled pollinations between our two most closely related all-Americans, Miles and Ruth. Gary and John believe the progeny from these crosses have the best chances for exhibiting true breeding for blight resistance, and also a possibility of inheriting resistance greater than that of their parent trees. I now have 10 seedlings from this cross from which I can cut scions to graft into large root systems for early resistance trials. Another of our all-Americans, Bruce, has fine forest form. Its height and late-flowering habit have so far prevented me from making crosses back to its parent trees. Some of John's trees from crosses made several years ago have fine forest form. They have matured in the Martin American Chestnut Planting, and they should produce nuts next year if we are able to cut out all of the original trees which have not demonstrated a significant level of blight resistance, to give our best trees full sun.

The nuts we send out under the Pacman designation are produced on a double-stemmed tree which fertilized itself and is isolated from other pollen sources. It is growing at 3,000 feet, and its first blight cankers are swollen. The parents of this tree are unknown.

We expect to have increasing numbers of second generation nuts available, and this year we can begin to share them with our most reliable growers, who have growing sites that meet our standards and have established reputations for taking good care of their chestnuts and reporting regularly. Among my older grafts of the original sources and all-Americans, there are now about 20 which are mature and located in places where controlled pollinations will be feasible next year. I plan to bag as many of these female flowers as time allows.

We give chestnut seed a 20-minute bath in 120 F water to kill immature weevils.

Planting your American chestnuts

It is a good idea to prepare your planting holes for seedlings and nuts in the fall. Dig them 2 feet deep and wide and check them after a heavy rain to be sure that they do not hold water. Poor drainage will kill the seedlings.

Fill the well-drained holes with a mix of one part each: fill taken from the hole, sand and composted cow manure.

Rake and save a big pile of leaves for mulch. Now you are ready to plant your seedlings as soon as they arrive in late November.

Remove some of the prepared fill and plant them at the same level as they were growing at the nursery, patting the soil mix firmly in place to avoid air pockets, which also kill seedlings.

Water them very well and spread leaf mulch to cover the area inside the wire cage, but keep the mulch several inches away from the seedling stem, so that small rodents do not make a nest next the stem and gnaw on it. Stake the cages in place.

On-site nut planting

In the nursery, the nuts are planted in October or November. You can do this with success only if you have sound defenses against moles, voles, chipmunks, squirrels and raccoons.

For our second-generation nuts, I used 6-inch tree shelters, driven 2 inches into the soil which had been prepared (as above) and staked in the center of the wire cage. The nuts were planted on their sides, under one inch of soil. Still, I was unwilling to give the animals too much lead time, so I did not plant until February. Nevertheless, 2 were stolen: one before it sprouted and another after I removed its shelter in May.

Last year we sent out 3,550 seedlings and 3,570 seednuts to cooperating growers in 26 states, Ontario & Nova Scotia

Grafting report

Ken James, Carl Mayfield and I all suffered great losses from our early grafting efforts; this might be attributable to the cold weather that followed the early whip grafting. In my case, these losses were increased further by a raccoon that attacked my shade bags and exposed all the grafts at the scion bank; when they failed, I repeated all the grafts of scions sent by cooperators, and the raccoon attacked again. If you gave me scionwood last winter to graft for resistance-testing purposes and it was not labeled McBride, please send it again in 2001.

After discussing this year's experiences, **John Elkins advises that scionwood be collected nearer to the time of grafting, in March, before the sap runs and bark slips.** Next year I shall wire the tops of the shelters shut to discourage raccoons (Buschmann's idea) and cover them with shade bags for good measure. Mining by

ant colonies at the base of a graft can expose the union to blight attack; treat ants with Sevin or diatomaceous earth.

For the sake of morale, I did not calculate my percentage. We might label this a very bad year for grafting, but John Elkins got 50% success with his bark grafts.

<u>Grafter</u>	<u>#Surviving (new in 99)</u>		<u>State</u>	<u>techniques used</u>
Carole Agee	2	(2)	VA	Bark
Carl Mayfield	18	(2)	VA	Whip
Ed Greenwell	69	(60)	TN	Nut
Ken James	58	(1)	NY	Whip, cleft
Lucille	63	(18)	VA	W, C, B, flute

(As reports from other grafters come in, they will be added here.)

Grafting invitation: You are invited to learn chestnut-grafting techniques at Virginia Tech in April of 2001, by appointment. Please respond to this invitation by February, indicating how many of your chestnuts you plan to graft, so that we may have enough scionwood on hand to share with you.

I look forward to receiving your reports and send **best wishes for all your American chestnut projects.**

Respectfully submitted,
Lucille Griffin, Executive Director

Other ACCF Directors:

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

John Rush Elkins, Treasurer, Professor of Chemistry, Concord College, WV

Dave McCurdy, Vice President, Superintendent Clements State Tree Nursery, WV

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

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