

[return to burlingtonfreepress.com](http://return.to.burlingtonfreepress.com)

## Can this chestnut be saved? Foundation says yes

By Candace Page  
Free Press Staff Writer

October 21, 2007

COLCHESTER -- Like an old-time heroine lashed to the railroad tracks, the American chestnut may be snatched from certain doom by a last-minute savior.

The American Chestnut Foundation brings its annual meeting to Burlington on Friday amid high hopes that its 20-year breeding program has produced a tree resistant to the fatal chestnut blight.

A fungus from Asia wiped out the highly prized tree of the Appalachian forest in the early 20th century -- and gave Americans their first taste of the devastation imported pests can work.

Soon after American chestnuts succumbed, Dutch elm disease began killing the nation's elms. Today, insect stowaways on global trade goods threaten species including the hemlock, the ash and perhaps even Vermont's treasured sugar maple.

"These threats are not few and far between," said Dale Bergdahl, a retired University of Vermont forestry professor who is searching for butternut trees resistant to a lethal foreign fungus. "These risks are going to continue as long as we continue to import."

Given these threats, the chestnut's story may set the pattern for future forest epidemics: catastrophe for a species, followed by generation-long human efforts at restoration.

The American Chestnut Foundation, a national organization based in Bennington, says it expects to prove that story can have a happy ending.

During their Burlington meeting, 200 researchers and volunteer enthusiasts will hear updates on the breeding program and visit a plantation of young chestnuts in Shelburne.

"Maybe in 10 years, we'll be able to mass produce an American chestnut strain that will be blight-resistant," Terry Gulick of Springfield, a chestnut enthusiast, said hopefully last week. "Then we'll be able to reforest the places where the chestnut grew."

'You don't see one every day'

Deep in a Colchester woodland, a single mature American chestnut continues to drop its load of nuts each autumn.

"I was just walking along one day and I said 'Look at that!'" Chittenden County forester Mike Snyder said on a walk this month, as he picked up a prickly chestnut bur and recalled his discovery of the tree a decade ago. "You don't see one of these every day."

Another lone tree appears to thrive in an Orange County hedgerow. Berlin boasts a clump of half

a dozen trees, their long, bristle-toothed leaves making them easy to identify.

"They have a wonderful, wonderful scent. It sounds stupid, but it was almost a lyrical smell," said Tig Tillinghast of Thetford, another chestnut enthusiast, recalling the first time he encountered a chestnut covered with white blossoms.

The tree Tillinghast encountered is a rare specimen of a species once found from Mississippi to Maine. The Vermont trees survive because the blight has not yet found them, perhaps because of their isolation.

Along the Appalachian Mountains where the tree grew most densely, people loved chestnuts. The trees grew straight and tall and fast and each year dropped a heavy crop of nuts to feed people as well as game like bears and wild turkeys.

Their wood was rot-resistant and easy to work, a favorite choice for telegraph poles, railroad ties, split-rail fences and building lumber.

About 1900, a fungal disease arrived from Asia, probably on nursery stock.

Chestnut trees died by the millions. Pennsylvanians were so distraught, the state established a Chestnut Blight Commission that sought, in vain, to halt the disease's forward march.

New chestnuts sprouted -- and continue to sprout -- from the roots of the dead trees but soon died.

Waiting for success

The Eastern forest survived loss of the chestnut. Oaks and red maple moved onto ground where chestnuts once grew. Animal species came through, too, although their numbers likely declined along with their food supply.

But some humans were unwilling to accept the loss. First the U.S. government and later the American Chestnut Foundation set out to breed a chestnut capable of surviving the fungus.

Breeders crossed an American chestnut with a blight-resistant Chinese chestnut.

When the offspring trees were 3 years old, they were inoculated with the fungus. In another two years, susceptible trees began to show signs of the disease. Those that did not develop the blight were bred again, and again, to other American chestnuts.

Through six chestnut generations, foundation researchers selected for disease resistance, aiming for a tree with all the desirable characteristics of an American chestnut -- tall and straight -- plus the blight-resistance of the Chinese tree.

If the foundation's breeding plan has worked, the latest crop of young trees at its Virginia farm will be highly disease-resistant.

"It's not a slam dunk yet," said Paul Sisco, a plant geneticist who oversees the foundation's Southern regional breeding projects. "It will be another two years before we know."

Patience required

If the trees prove healthy, many years of work remain. The breeding program must field-test its

disease-resistant trees, a five- to seven-year wait. If that's successful, reforestation -- perhaps 10 years down the line -- will require thousands and thousands of nuts, and the volunteers to plant them.

The foundation has a pledge from the National Wild Turkey Federation to help with reforestation (wild turkeys love chestnuts). In a new alliance, the foundation will plant some of its trees on reclaimed coal mine land in Appalachia, the heart of chestnut's range.

"That's one of my dreams, healing the land in coal-mined areas that look like moonscapes," said Marshal Case, president and CEO of the Chestnut Foundation.

The breeding program is also diversifying. It aims not for a single line of disease-resistant trees, but many lines using genetic material from all parts of the chestnut's range.

That desire brought researchers and volunteers to the Orange County chestnut last summer. When the tree bloomed, its female flowers were pollinated with male pollen of a blight-resistant tree from the breeding program.

"Then we put paper bags over them so they wouldn't be pollinated again by a Chinese chestnut in somebody's yard. It looked pretty funny," Tillinghast said.

Researchers returned when the nuts were ready to harvest. They'll be planted, tested for disease resistance and selected for breeding a chestnut that will thrive in Vermont's chilly climate. A Vermont tree is still 15 to 20 years away, Case said.

Then, the trees might reappear in the Connecticut River valley and elsewhere around Vermont.

"I keep repeating -- this is a long process. We still have quite a ways to go. We have to maintain that long view," Case said.

Contact Candace Page at 660-1865 or [cpage@bfp.burlingtonfreepress.com](mailto:cpage@bfp.burlingtonfreepress.com)