

Chestnut Trees May Slow Carbon Release

A study by Purdue University shows that introducing a new hybrid of chestnut trees may help the environment.

06/17/2009

Courtesy of Purdue University/Nicole Jacobs

Douglass Jacobs examines a young hybrid of the American chestnut. He expects the trees could be reintroduced in the next decade.

Move over, "The Christmas Song." Chestnuts are doing more than roasting on an open fire—they are doing their part to help save the world.

A recent Purdue University study reveals that chestnut trees may help reduce the amount of carbon in the environment.

Douglass Jacobs, an associate professor of forestry and natural resources, discovered that the American chestnut tree grows faster and absorbs more carbon than other hardwood trees.

"The American chestnut is an incredibly fast-growing tree," says Jacobs. "Generally the faster a tree grows, the more carbon it is able to sequester. And when these trees are harvested and processed, the carbon can be stored in the hardwood products for decades, maybe longer."

Jacobs compared the American chestnut with the black walnut, northern red oak, the quaking aspen, red pine and white pine in four sites in southwestern Wisconsin. In nearly every case, he found that the American chestnut grew faster—with as much as three times more aboveground biomass—and absorbed more carbon than the others, says reports by Purdue University.

"Each tree has about the same percentage of its biomass made up of carbon, but the fact that the American chestnut grows faster and larger means it stores more carbon in a shorter amount of time," says Jacobs.

There are few chestnut trees in America; however, after a fungus-induced blight crippled many of the trees in their natural zone about 50 years ago. But new efforts to hybridize the remaining American chestnuts with blight-resistant Chinese chestnuts have resulted in a chestnut tree that is about 94 percent American chestnut with the protection found in Chinese species, say experts at the University.

Jacobs says the hybridized trees could be ready to plant in the next 10 years. Since trees absorb about one-sixth of the carbon emitted globally each year, Jacobs says increasing the number of chestnut trees could make a considerable difference in slowing climate change.

"This is not the only answer," Jacobs says. "We need to rely less on fossil fuels and develop alternate forms of energy, but increasing the number of American chestnuts, which store more carbon, can help slow the release of carbon into the atmosphere."