

The GE American Chestnut

The Newest Fight to keep Genetic Engineering Out of the Forests and Off of the Farms

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The American chestnut tree, once a dominant species in eastern North American forests, was decimated in the first half of the 20th century first by over-logging, then by a fungal blight (*Cryphonectria parasitica*, also referred to as chestnut blight), and then by salvage logging of healthy trees before they were affected by the blight.

For the past 30 years, researchers at the State University of New York College of Environmental Science and Forestry have been developing a genetically engineered (GE) blight-resistant American chestnut and hope to win government approval for its unregulated release into the environment in the near future. If they are successful, the GE American chestnut will be the first GE forest tree species planted specifically to spread freely through forests with no monitoring or regulation. Once the GE American chestnut is released, there will be little potential to track or reverse its spread.

It is one giant irreversible experiment with the forests.

The GE American chestnut is promoted as a test case to sway public opinion toward supporting the use of biotechnology for forest conservation, and to pave the way for the introduction of other GE trees. However, the other GE trees in development would be grown in industrial monoculture plantations, for the commercial production of



timber, pulp and biofuels. A close look at who is promoting the GE American chestnut reveals direct and indirect financial and other links between the nonprofit American Chestnut Foundation, the researchers developing the GE American chestnut, tree biotechnology company ArborGen, biotechnology company Monsanto (now Bayer), Duke Energy, government agencies, and other corporate-dominated consortia including the Forest Health Initiative and the US Endowment for Forestry and Communities that are deeply invested in advancing the use of biotechnology for forest restoration as a public relations tool.

The GE American chestnut is specifically intended to be released into forests, and to spread its GE pollen and seeds. Locating and monitoring

all GE American chestnut trees and their progeny will be nearly impossible, especially over a long period of time. GE American chestnut pollen and nuts could contaminate hybrid chestnut orchards, impacting the livelihoods of farmers. Researchers claim that the US regulatory process will be sufficient to address risks. However, this system has no specific regulations to deal with the release of GE trees into forests. In addition, our minimal knowledge about highly complex forest ecosystems and the potential impacts of climate change make adequate risk assessments impossible. Other concerns include the safety of eating GE American chestnuts or inhaling GE American chestnut pollen, and impacts on wildlife, pollinators, other plants, soils and waterways. *Continued on pg.9*

The GE American chestnut has been engineered with an enzyme known as OxO, derived from wheat, along with other genes. The OxO trait does not eliminate the pathogen, but stops it from spreading on the tree. While tests on a small number of young GE American chestnut trees have shown some success, the long lifespan of AC (potentially over 200 years) and the variable conditions it encounters in nature make it impossible to know how the genetic modification will behave over time. In agricultural crops, GE disease and fungus resistance has largely failed because these pathogens evolve to overcome plant defenses, and increasing resistance to one pathogen may lead to higher susceptibility to others. In addition, the existence of other fungus lethal to American chestnut, such as ink disease, as well as a variety of stresses including climate change, contribute further to the challenge of chestnut restoration, with or without genetic engineering.

For 20 years, the development of GE trees has been met with strong and ongoing public opposition including from scientists, foresters, and ecologists. Indigenous peoples whose traditional lands fall in the range of American chestnut have expressed concern about the impacts on their territorial sovereignty and right to keep GMOs off their lands.

The risks of releasing GE American chestnuts into forests are unknown and unknowable. The introduction of GE American chestnut could not only fail, but also create new problems and exacerbate existing pressures on forest ecosystems. Forests are already threatened by unsustainable logging practices, invasive species and introduced insects and disease, urban sprawl, and the escalating impacts of climate change. Without solving these underlying



A non-GE American Chestnut Tree

causes of forest demise, the restoration of the American chestnut through any technology is highly improbable.

Decisions about the introduction of the GE American chestnut will set a regulatory precedent and set the stage for the future of the use of genetic engineering in forestry. The GE American chestnut should not be permitted for distribution. The UN Convention on Biological Diversity and forest certification regimes including the Forest Stewardship Council and Sustainable Forestry Initiative call for application of the precautionary principle to GE trees, with the FSC and SFI banning their use.

The precautionary principle, which was formulated to avert harm by delaying action until safety can be proven, is the appropriate framework to apply to decision-making

related to the GE American Chestnut.

The USDA is expected to release the petition from researchers requesting official deregulation of the GE American chestnut at any time. We need people to help stop the deregulation by signing onto our petition, and by getting involved with the campaign. We have written a scientific white paper on the GE American chestnut with much more information on the risks and threats and powers behind the promotion of this GE tree.

To read the paper and find out more about how you can get involved, please visit our GE American Chestnut Action Page: <https://stopgetrees.org/chestnut/>