

The Indigenous Environmental Network submits the following comments to oppose the final determination by USDA-APHIS / APHIS-2020-0030-8291 of nonregulated status of the genetically engineered American chestnut tree: Darling58 (GEACD58).

One of the more prominent arguments by researchers is the traditional methods of breeding resistance into this tree is taking too long. However, history teaches us that negative unintended consequences have resulted by not taking enough time to consider as many factors as possible. Restoring this tree into our lives and forests is important work and has the potential for either success or failure that requires more investigation before nonregulated status is granted and widespread distribution of the D58 genetically engineered American chestnut tree takes place.

Furthermore, there has been significant work done breeding blight resistance to the American chestnut using traditional breeding processes with related tree species that have a natural immunity to the blight. This process is a more measured and responsible and there are significant examples of blight resistance successes.

The unregulated and intentional release of GE trees in the US would irreversibly contaminate wild forests and threaten successful restoration efforts projects focused on wild trees in the US and Canada.

Long term impacts to ecosystems and human health from GE trees that can live for 100s of years are completely unknown and threaten forests impacted by logging, introduced pests and pathogens, urban sprawl, and climate change. It is a “massive, irreversible experiment” with our forests.

It is dangerously presumptive that a single gene construct, the oxalate oxidase enzyme (OxO) from wheat will lead to conferring durable blight resistance. The outcomes have shown that engineering resistance to one pathogen, often leaves plants more susceptible to other pathogens, biological stress or may reduce plant growth significantly and over time pathogen resistance over all becomes less effective or not effective at all.

As stated within the **DEIS and DPPRA**, the addition of the OxO enzymes does not kill the blight but allows the tree to live with the blight without it succumbing to the effects of the fungus. The D58 American chestnut trees are a potential plant pest that will concentrate the blight in the areas where these trees can act as a reservoir for blight, posing a possible risk of infection to other native trees and plants.

Because the intention of the release of this genetically engineered tree is to spread in the wild, across the full range of the American chestnut, the unconfined release of DEAC D58 trees represents, by definition, a plant pest risk as a potential invasive. This spread of Darling 58 is intended to occur across many ecosystems and landscapes including in Canada.

A decision to permit release of this GE tree would set a dangerous precedent for the release of other genetically engineered/modified GE/GMO trees into the wild as well as the deregulation of other species and variants of GE trees, where cumulative environmental impacts are likely to increase over time. There has been no consideration of the potential threats and negative impacts that would result in these environments. No life form within biological regions or the entire earth for that matter, lives in isolation and therefore altering the genetic code of multiple living entities within a region has the potential to severely limit or eliminate the vital biological interactions that have been established for countless millennia.

There is no evidence only assumptions that the OXO trait will continue to be viable over time and multiple generations of progeny that may or may not have carried this gene or what mutations might have occurred that wouldn't be known in the less than a decade that D58 has been cultivated and studied. This short time span is insignificant when considering the age and maturation of existing bio regions that are measured in countless centuries. me span.

**In closing:**

*Our position on genetic engineering is grounded in our Traditional Indigenous Knowledge (TIK) that serves to support and direct the work toward universal understanding of and our adherence to the natural laws that maintain earth's biodiverse relationships of all living beings.*

*As Indigenous Peoples, our responsibility is to adhere to our sacred relationship to nature's original instructions within these constructs. As humans, with our fragmented understanding of these complexities, we identify these instructions in the context of DNA.*

*Our position is solidly grounded in the indisputable truth that no life form lives in isolation, given the countless complex relationships above, on, and below the surface of Mother Earth. And because humans lack the depth of knowledge of these highly complex and far-reaching relationships, we are compelled to do all we can to prevent the purposeful release of the GEAC and generally the manipulation of DNA that will facilitate any manner of ownership, commodification, and control of living entities.*

*There are far too many examples of genetic manipulation for applications that has and continues to contribute to a 65% population decline in pollinators across the world for so-called modern industrial agriculture operations. These genetic manipulations include resistance to chemicals, promotes accelerated growth, pest, and pathogen resistance, and for cultivation in non-native environments. These applications and uses have caused unintended and dramatic negative impacts to biodiversity, human health, and countless other non-target life forms.*