

Genetically Engineered Trees

- **Risks, Concerns, and Potential Problems Regarding the Use of Biotechnology to Address Forest Health**



Anne Petermann, Global Justice Ecology Project

Risk Assessment of GE Trees is Not Possible

“Trees differ in a number of important characteristics from field crops, and these characteristics are also relevant for any risk assessment of genetically engineered (GE) trees.

“A review of the scientific literature shows that due to the complexity of trees as organisms with large habitats and numerous interactions, currently no meaningful and sufficient risk assessment of GE trees is possible, and that especially a trait-specific risk assessment is not appropriate.

“Both scientific literature and in-field experience show that contamination by and dispersal of GE trees will take place...

Risk Assessment of GE Trees is Not Possible

(continued)

“Transgenic sterility is not an option to avoid the potential impacts posed by GE trees and their spread. **Regulation of trees on a national level will not be sufficient because, due to the large-scale dispersion of reproductive plant material, GE trees are likely to cross national borders.**

“All this makes GE trees a compelling case for the application of the precautionary principle.”

- The Federation of German Scientists

The Inherent Uncertainties Surrounding GE Trees Require Application of the Precautionary Principle

From the IUCN Policy and Global Change Group:

“The precautionary principle, or precautionary approach, has emerged over recent decades as a widely and increasingly accepted general principle of environmental policy, law, and management. It is an approach to uncertainty, and provides for action to avoid serious or irreversible environmental harm in advance of scientific certainty of such harm.”

“The core concept of precaution can be viewed as a mechanism to counter a widespread regulatory presumption in favour of allowing development/economic activity to proceed when there is a lack of clear evidence about its impacts.”

The Inherent Uncertainties Surrounding GE Trees Require Application of the Precautionary Principle

(continued)

“The precautionary principle provides guidance for governance and management in responding to uncertainty. It provides for action to avert risks of serious or irreversible harm to the environment or human health *in the absence* of scientific certainty about that harm. It is now widely and increasingly accepted in sustainable development and environmental policy at multilateral and national levels. **The principle represents a formalization of the intuitively attractive idea that delaying action until harm is certain will often mean delaying until it is too late or too costly to avert it.**”

- *The Precautionary Principle in Biodiversity Conservation and Natural Resource Management*

UN Convention on Biological Diversity

Decision on GE Trees, COP-8, Bonn, Germany May 2008

The Conference of the Parties, Recognising the uncertainties related to the potential environmental and socio-economic impacts, including long term and trans-boundary impacts, of genetically modified trees on global forest biological diversity, as well as on the livelihoods of indigenous and local communities, and given the absence of reliable data and of capacity in some countries to undertake risk assessments and to evaluate those potential impacts, **recommends parties to take a precautionary approach when addressing the issue of genetically modified trees.***

<https://www.cbd.int/decision/cop/default.shtml?id=11033>

* Note: A full suspension of all outdoor plantings of GE trees, including field trials, was supported unanimously by all NGOs and Indigenous Peoples' Organizations present, as well as the entire African delegation and many countries in Asia and Latin America.

The Cartagena Protocol on Biosafety, 2000

- “In accordance with the precautionary approach the objective of this Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on transboundary movements.’

GE Trees will not be Certified

FSC (Forest Stewardship Council) rules on use of Genetically Modified Organisms (GMOs):

FSC Principles & Criteria (FSC-STD-01-001 v4-0)

“FSC’s Principles and Criteria are very clear on the issue of GMOs, excluding their use within the boundaries of FSC-certified forestry operations. **The current version 4-0 states unequivocally that “use of genetically modified organisms shall be prohibited”**. Equal considerations apply to the approved version 5-0 ...wherein criterion 10.4 states: **"The Organization shall not use genetically modified organisms in the Management Unit."**

GE Trees will not be Certified

FSC Policy for Association (FSC-POL-01-004)

FSC's Policy for Association states that, "FSC will only allow its association with organizations that are not directly or indirectly involved in....

e) Introduction of genetically modified organisms in forestry operations." Introduction is to be understood here as commercial deployment **and is considered unacceptable not only by a certified organization but also by any majority ownership related parent or subsidiary company.**

In summary, FSC certified organizations may only conduct research into GMOs but must not use them in any form commercially, whether within or outside the boundaries of their certified management units.

<https://ic.fsc.org/en/news/id/1121>

GE Trees will not be Certified

PEFC (Programme for the Endorsement of Forest Certification) ST 1003:200x - Requirements for Sustainable Forest Management Standards - Part 1: Temperate, boreal and plantation forests

4.2 Guidelines for Forest Management Practices

Genetically modified trees shall not be used.

Note: The restriction on the usage of genetically modified trees has been adopted based on the precautionary principle. Until enough scientific data on genetically modified trees indicates or guarantee that impacts on human and animal health and the environment are equivalent to, or more positive than, those presented by trees genetically improved by traditional methods, no GM trees will be used.

http://consultations.pefc.org/consult.ti/ST_1003_200x_p1/viewCompoundDoc?docid=489364&partId=491668&sessionId=&voteid=

GE Trees will not be Certified

SFI (Sustainable Forestry Initiative) Policy on Forest Tree Biotechnology:

“The overall SFI Standard package includes a new policy on GMOs that states that fiber from genetically modified trees is not approved for use in SFI labeled products.”

The *SFI program* has strong existing measures in the *SFI 2015-2019 Forest Management Standard* and the *SFI 2015-2019 Fiber Sourcing Standard* regarding research on genetically engineered trees via *forest tree biotechnology*.

SFI Inc. is endorsed by the Program for the Endorsement of Forest Certification (www.pefc.org), which has restrictions on the use of genetically engineered trees:

Genetically-modified trees shall not be used.

GE Trees will not be Certified

SFI (Sustainable Forestry Initiative) Policy on Forest Tree Biotechnology:

(continued)

*Note: The restriction on the usage of genetically-modified trees has been adopted based on the Precautionary Principle. Until enough scientific data on genetically-modified trees indicates that impacts on human and animal health and the environment are equivalent to, or more positive than, those presented by trees genetically improved by traditional methods, **no genetically- modified trees will be used.***

<http://www.sfiprogram.org/files/pdf/2015-2019-standardsandrules-web-lr-pdf/>

Global Opposition to Genetically Engineered Trees Is Growing

“We, agronomists, biologists, geneticists, Indigenous Peoples, foresters, activists, attorneys, community organizers, ecologists and others coming together on 22 November 2014 in Asunción, Paraguay from Northern and Southern Asia, South Pacific Islands, Western Africa, Europe, and South, Central and North America, **stand together in our rejection of all genetically engineered trees, including field trials.**”

- From the *Asunción Declaration*

Global Opposition to Genetically Engineered Trees



The potential for unpredictable and irreversible social and ecological impacts by the commercial use of GE trees has led to more than 17 years of protests against GE trees on five continents.

Resistance to GE Trees is Growing

A Brief Timeline of Resistance to GE Trees 2000-2013

June 2000: First campaign against GE trees launched during Biotechnology Industry Organization conference in Boston. *Washington Post* runs front page article about the campaign.

July 2001: Native Forest Network organizes protest at GE tree conference at Skamania Lodge in Washington state.

March 2003: GE tree protests at the World Trade Organization agricultural negotiations in Sacramento, CA.

September 2005: Award-winning GE trees documentary released: *A Silent Forest: The Growing Threat, Genetically Engineered Trees*, narrated by renowned geneticist Dr. David Suzuki.

Resistance to GE Trees is Growing

March 2006: Protests at UN Biodiversity Convention COP 8 in Curitiba, Brazil leads to UN decision to warn countries about GE trees, call for application of the Precautionary Principle and launch a study into the ecological and social impacts of GE trees.

October 2006: Protests and a boat action organized around the International Union of Forest Research Organizations “2006 Forest Plantations Meeting” in Charleston, South Carolina, US.

February 2008: GE trees protest inside UN Convention on Biological Diversity (CBD) meeting in Rome.

May 2008: A major series of protests are organized by a large international alliance of groups and Indigenous Peoples’ Organizations at the UN CBD convention in Bonn, Germany calling for a global ban on GE trees. Unanimous support for the ban received from entire African delegation, many Latin American and Asian country delegations, and all NGOs and IPOs present.

Resistance to GE Trees is Growing

May 2009: Belgium Permanent Mission in Manhattan protested by Indigenous Peoples during the UN Permanent Forum on Indigenous Issues due to Belgium's development of test plots of GE poplar trees.

June 2009: The Campaign to STOP GE Trees and allies submit nearly 17,500 public comments to the USDA opposing the USDA's recommendation for approval of an ArborGen GE eucalyptus test plots across seven states. Only 39 favorable comments.

August 2009: Jim Hightower national commentary airs: "The Invasion of Genetically Engineered Eucalyptus."

October 2009: La Via Campesina, the world's largest peasant farmer organization, organizes protests outside of the XIII World Forestry Congress in Buenos Aires, Argentina. GJEP speaks about GE trees.

February 2010: Groups Force USDA to re-release Draft Environmental Assessment on genetically engineered eucalyptus trees after their original EA lacked key US Forest Service hydrological studies.

Resistance to GE Trees is Growing

July 2010: Lawsuit filed against the USDA over their approval of ArborGen's large-scale test plots of GE eucalyptus trees.

August 2010: *Charlotte Observer* editorial, "Could eucalyptus trees be the kudzu of the 2010s?"

2011: *Biomass Power & Thermal Magazine* article, "Genetic Engineering Hang-Up: Lawsuit highlights a barrier to biotechnology advancements in the US"

May 2011: ArborGen postpones IPO indefinitely.

September 2011: GE trees protest organized at the 2011 conference of the Sustainable Forestry Initiative in Burlington, Vermont.

October 2011: Judge in GE trees test plot lawsuit rules in favor of USDA.

Resistance to GE Trees is Growing

October 2011: *Commercial Appeal* article, “Court loss won't stop environmentalists' battle against modified-eucalyptus trees”

March 2012: ArborGen Board announces major changes to Senior Management; fires executive staff

April 2013: After the USDA announces they will prepare a draft Environmental Impact Statement on the request by ArborGen to commercially sell billions of GE freeze-tolerant eucalyptus trees., they receive 40,000 comments against GE trees and only 4 in favor.

May 2013: Largest yet protests against GE trees at IUFRO Tree Biotechnology Conference in Asheville, NC

March 2015: When the Brazilian Biosafety Commission announces they will meet to decide whether to approve a GE eucalyptus tree, protests occur on six continents; their meeting is shut down by La Via Campesina; and the women of the MST and other social movements take action at a FuturaGene greenhouse.

Thank you.



Protest against GE trees in Melbourne, Australia