

# *Public Research & Regulation*

Foundation with the objective to involve the public research sector in regulations and international agreements relevant to modern biotechnology

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Dr. Ahmed Djoghlaif, Executive Secretary  
Secretariat of the Convention on Biological Diversity  
413 Saint-Jacques Street, Suite 800  
Montreal, Quebec, Canada H2Y 1N9

Re: questionnaire on genetically modified trees.

31 August 2006

Dear Dr. Djoghlaif,

I refer to your invitation to governments, relevant organizations and stakeholders to provide views and information on genetically modified trees, in order to allow the SBSTTA at its 13<sup>th</sup> meeting to assess the potential environmental, cultural, and socio-economic impacts of genetically modified trees on the conservation and sustainable use of forest biological diversity.

We understand that several members of the Public Research and Regulation Initiative (PRRI) intend to send the Secretariat individual submissions with specific information and views on GM Trees. We therefore limit our response to the general – but in our view crucial – observations below.

Public research groups in government institutes, academia and international organisations in developed and developing countries all over the world dedicate their knowledge, time and resources conducting research to strengthen sustainable production of food, feed and fibre; overcome limiting resources such as water; improve health care; and preserve the environment.

A significant portion of the ongoing public research focuses on forest trees and fruit trees. As many of the above challenges cannot be solved by conventional techniques alone, public research in this field also includes exploring biotechnology techniques of many kinds, including the use of GM trees. A unique advantage of biotechnology is that it may help overcome the long generation time, and other difficult breeding constraints that hamper the use of sexual crosses for introduction and testing of economically and environmentally important traits.

Examples of ongoing public research on genetic modification of trees include:

- Developing resistance against phytophagous insects and pathogenic microorganisms in trees such as banana, citrus, coffee, plums, poplar and papaya, thereby reducing economic losses, reducing pesticide use, and reducing the risks of disease outbreaks.
- Developing trees with reduced lignin content, thereby reducing chemical pollution and energy consumption during pulp and paper manufacturing, and facilitating the production of ethanol via fermentation from wood sources at the many new biofuels production facilities that are being developed around the world.
- Understanding biological processes underlying growth and development in trees, to produce new knowledge of benefit to crop and tree production for all humanity, and to enhance the efficacy and environmental values from trees (e.g., in offsetting environmental degradation from deforestation).

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- Developing trees for phytoremediation of soils contaminated by heavy metals such as mercury and cadmium, and for degradation of hydrocarbon pollutants, that are widespread around the world as a result of industrial and roadway-associated deposits. For example, trees have been produced that can bioremediate toxic hydrocarbons and mercury at rates up to 100-fold above that of non-GM trees.
- Restoring threatened species, such as American Chestnut, to the natural landscape, thus increasing current levels of tree and forest ecosystem biodiversity.
- Developing rapidly growing trees such as poplar and eucalyptus, to improve wood productivity, wood quality, and associated bioenergy.
- Enhancing drought and salt tolerance in trees to make better use of limited water resources, and to make use of marginal lands unfit for agricultural crops. For example, a salt tolerant poplar has been produced in China that is able to grow on salt encrusted soils where unimproved poplars and most other species cannot survive.
- Developing new and more efficient sources of renewable energy and novel biological materials, including biofuels and renewable replacements for fossil-fuel plastics.
- Developing biosensor trees that can detect and signal the presence of key environmental variables such as the presence of land mines and soil contaminants, and which can be viewed via remote sensing (airplanes, satellites).

PRRI plans to make a detailed overview of this and other ongoing research and post them on our web site during the upcoming year.

Because of the numerous and diverse potential benefits from GM trees, the PRRI believes that it is essential to not only maintain, but indeed to intensify, biotechnology research in trees to help address societal challenges such as those mentioned above. Because many of the processes of interest in trees cannot be readily studied in the laboratory or greenhouse, the ability to conduct field research is essential.

We are therefore deeply concerned with calls for a moratorium on field research with GM trees. We feel there is no scientific justification for such a moratorium and that these calls are unsubstantiated. Indeed, there are valid questions regarding biosafety and environmental impacts of GM trees. Rather than abandoning research, questions such as these can only be answered using thoughtful and well-designed scientific studies, which often require a field component to be ecologically meaningful. To be scientifically credible, hence socially responsible, potential benefits and risks of GM trees need to be carefully examined on a case-by-case basis, just as they do for other types of GM plants. Generalities about benefit and risk simply based on how new varieties of trees were created have been long discredited by leading scientific societies.

We note that because of their stature and longevity, confinement of GM trees is often raised as an issue of concern. In fact, the principles for effective confinement of GM field trials are already well established. Trees often take several years to become sexually mature, and therefore confined field studies with trees are therefore significantly *easier* to conduct than they are for many annual crops.

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Bearing in mind how critically important it is that research with GM trees continues, and also realizing how disruptive misinformation in this domain has been in the past, we look to the Secretariat to provide objective, clear, precise and balanced information.

In this respect we are concerned about the questionnaire itself. For example, the very first question addressing potential impacts of genetically modified trees states “Does your country have any guidelines or regulations for minimizing the impacts of genetically modified trees for scientific and/or commercial purposes?” This suggests that the main impacts of GM trees will be negative and therefore should be mitigated. For a questionnaire as visible and important as this one, such a perceived bias is certainly unwelcome. We doubt this bias was intentional, and so we urge you to strive for both clarity and objectivity in subsequent questionnaires.

More generally, we feel that this questionnaire overlooks an opportunity to gather relevant information on other types of research with GM trees. For example, the questionnaire only seeks information on *plantations* of GM trees. Plantations of GM trees, while perhaps more visible, are the culmination of years of laboratory and greenhouse trials. Hence, the existing questionnaire fails to encompass the largest ongoing body of research on GM trees—most of which is conducted prior to the establishment of any plantations. Plantation trials will generally only be conducted when there has been a decision to seek commercial use, which is an extremely small proportion of all field research with GM trees. Apart from commercialized GM papaya, we know of only one commercial scale plantation of GM trees in the world, which is in China.

If the SBSTTA is to come to a fully informed assessment of research with GM trees, it needs to be thoroughly apprised of the complete spectrum of ongoing and planned research, what it is intended to achieve, and why it is justified. We encourage the Secretariat to consider broadening the scope of its questions so that research on GM trees is properly understood in its full societal context.

As before, the PRRI stands ready to assist in your difficult tasks. I am pleased to inform you that we will draw upon our network of public sector researchers to provide a detailed overview of ongoing and planned research on GM trees, including the nature of the research itself, as well as its justification.

Yours sincerely,



Em. Prof. Marc van Montagu

Chairman of the Steering Committee of the  
Public Research and Regulation Initiative