Tree Biotechnology

Cintia L. Ribeiro

My Background

- **B.S. in Biology from Sao Paulo State University – Brazil**
  - Research with Eucalyptus
- **PhD in Molecular Biology from University of Florida**
  - Research with Poplar and Pine (Dr. Matias Kist Lab)
- **Emerging Leaders in Science Program at Monsanto Company**

Proposed Uses of Engineered Trees

Lignin Alteration

$15 per cubic meter reduction

Reduce use of environmentally hazardous chemicals

Increase Cellulose Content

Accelerated Growth

Industry and academia Investment

Deregulation in Brazil

Environmental concerns

Personal Archive

Frost Tolerance

Industry field test

Geographic limitations

Disease Resistance

Evolution of new strains of pathogens

Chemical treatment still rules

Papaya ringspot virus

ww.geneticliteracyproject.org

Insect Resistance

First GM tree

Contributed to public distrust

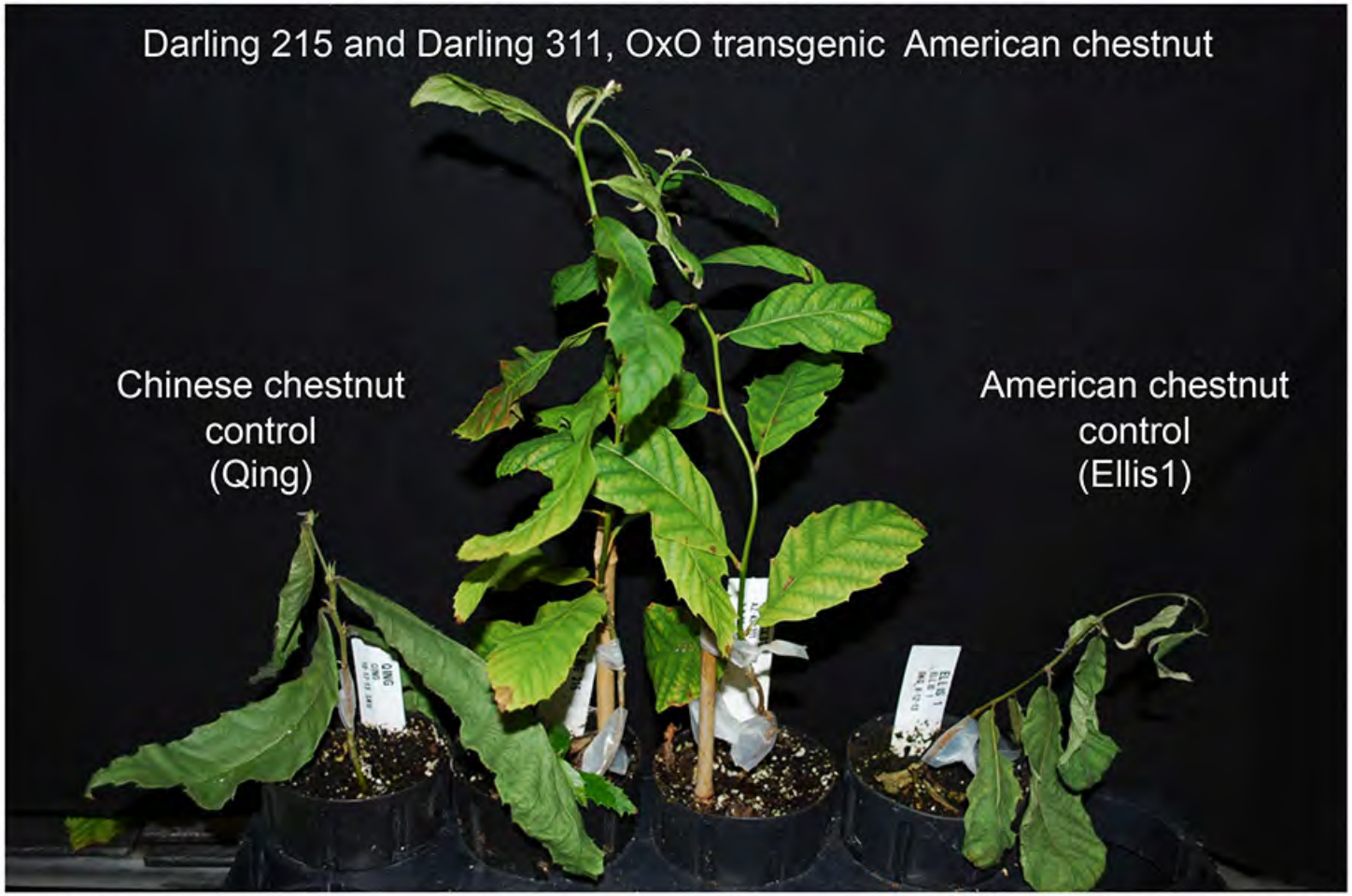
Challenges with Public Perception

George Hudler, Cornell University, Bugwood.org

http://www.esf.edu/chestnut/

Very small stem blight resistance assay showing significant blight resistance enhancement using the OxO gene.

ESF



All plants were produced from tissue culture. Non-transgenic & transgenic Americans are clonal (Ellis 1 cell line). Pictured 8 days post inoculation with *C.parasitica* strain EP155. American stem diameters were ~1.5mm, Chinese ~2.0mm. Darling 215 OxO expression level is the threshold for high resistance in leaf assays and Darling 311 has higher expression levels than 215.

- http://www.esf.edu/chestnut/

Protestants at IUFRO Tree Biotechnology Meetting 2013

Personal Archive

On Fri, May 31, 2013 at 5:53 PM, Kirst Matias <info@treebiotech2013.org> wrote:

Hello all,

A colleague just passed this article along to me.

Radical environmental groups reveal campaign to defeat GE eucalyptus

May 31, 2013. Summerville Patch.

(Summerville, SC) Amid massive protests against genetically engineered trees during the Tree Biotechnology 2013 Conference in Asheville, NC, radical environmental groups have announced plans to release thousands of koalas into any GE eucalyptus plantations established in the southeastern US.

The groups have vowed to stop plantations of invasive, flammable GE eucalyptus no matter what it takes.

"GE eucalyptus has no known natural predators in North America, greatly increasing the risk that it will become invasive," said an anonymous spokesperson. "We believe we do not have a lot of options here.

We are going to have to bring in koalas to eat the eucalyptus to eliminate the threat of them becoming invasive.

Eucalyptus leaves are the natural food for koala Bears, which are native to Australia. Activists believe that by freeing Koalas from zoos and releasing them by the thousands into eucalyptus plantations, they can address the many problems associated with eucalyptus trees--including the fact that they are explosively flammable, and very water intensive, using twice the water of native forests.

There is a simultaneous push from activists in Australia for a eucalyptus recall. They are outraged that their eucalyptus trees are being used for socially and ecologically destructive purposes and demand that all eucalyptus trees outside of their native range be recalled immediately. They further pledge to re-establish the liberated koalas in their native territory once the eucalyptus in the US are eradicated.

The USDA Animal and Plant Health Inspection Service, which recently held a public comment period on its intent to prepare a draft Environmental Impact Statement for the deregulation of ArborGen's cold-tolerant GE eucalyptus, voiced little concern over the Koala matter.

"As far as APHIS is concerned, this particular species of marsupial has no record of invasiveness in the southeastern US," a spokesman for the agency said.

"We were never planning on applying for the necessary permits to liberate koalas into the eucalyptus plantations," the radical environmentalists said in a statement issued to USDA APHIS. "However, we are not surprised as APHIS will approve the release of pretty much anything into the environment."

"We consider this a serious threat to the safety of our eucalyptus program," ArborGen said in a statement on their website. "We are currently exploring a series of genes, found in the red-eyed tree frog, which, if activated, may produce a fatal koala toxin." In a follow up interview, an ArborGen chief science officer admitted that this toxin is also lethal to every known species of bird and insect in North America. He declined to comment on whether risking the extinction of thousands of species was justified to protect the company's highly controversial plans to sell GE eucalyptus.

http://cas.nonprofitsoapbox.com/brazilpetition

Arsonists Destroy Merrill Hall in $4.1 Million Blaze

Arsonists burned down Merrill Hall, part of the UW Center for Urban Horticulture, May 21, causing $4.1 million in damage and destroying offices, research facilities and the center's library. It was the most costly attack on UW facilities since the Vietnam War protest era.

"I have never genetically engineered a tree, much less released one into the environment."

www.washington.edu

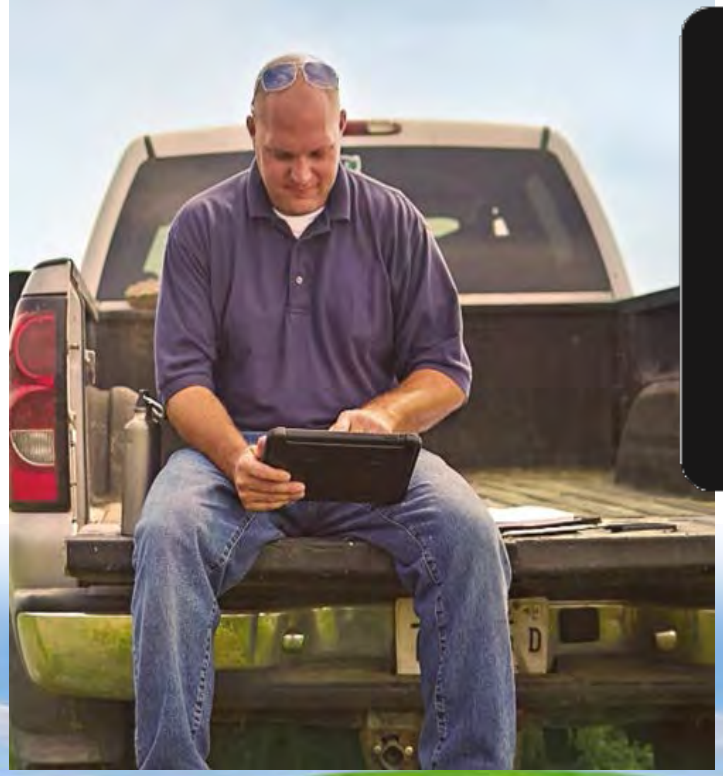
Future Target Traits

J.M. Bové, INRA Centre de Recherches de Bordeaux, Bugwood.org

J.M. Bové, INRA Centre de Recherches de Bordeaux, Bugwood.org

William M. Ciesla, Forest Health Management International, Bugwood.org

BE PART OF THE Conversation



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