Field trial of genetically modified trees: Belgian government's contribution to International Day for Biological Diversity

On May 6th, Minister of Science and Innovation of Flanders (Belgium) Patricia Ceyssens planted a tree. Nothing strange in that of course. What was unusual about this type of "green" ceremony what that this was no common tree. It was in fact the first genetically modified poplar to be planted in an open field trial by the Flanders Institute for Biotechnology (VIB), to be followed by the planting of 119 more GM poplars over the next few days in the same site.

The presence of the minister came as no surprise, given that VIB is funded by the Flemish government, but her active participation in this particular tree planting activity can also be seen as a political declaration against government officials who opposed this field trial, against organizations such as Nature & Progrès Belgique and Greenpeace Belgium and also against the majority of the general public in Belgium that had expressed negative views about it (one of the reasons provided for the initial refusal to the trial by two federal ministers was that "the public consultation is largely negative").

Why did VIB receive such type of political support? What is the importance of this field trial? What is this research aimed at?

To respond to those questions it is first necessary to explain that these poplars have been genetically manipulated so that its wood will have 20% less lignin and 17% more cellulose. Taking into account that lignin is the material that binds the cellulose fibers together and provides strength to the trees, such modification does not seem to make any sense from a biological perspective.

However, it does make a lot of sense from a corporate-profit perspective. And this is what this trial is all about: future profits. Apart from the biotech industry itself –of which VIB is part- this trial is aimed at benefiting two main actors: the pulp and paper industry and the energy industry.

Regarding the first actor, wood with higher levels of cellulose and lower levels of lignin will result in cheaper raw material, because the same amount of wood will contain 17% more cellulose, which is the part of the wood used in pulp production. At the same time, 20% less lignin will mean a cheaper bleaching process, given that lignin causes the yellowing of paper and any lignin remaining has to be bleached. Less lignin therefore means lower bleaching costs.

The second actor –the energy industry- appears to be even more favoured by this research. It was not by chance that VIB received 1.6 million dollars from the American Global Climate and Energy Project, managed by Stanford University, for further research. The main aim of these trees is to serve as raw material for cellulosic ethanol, which is produced from the cellulose contained in the wood. Here again, what matters is the cellulose content –more cellulose, cheaper ethanol. According to the Belgian media, these trees will produce 50% more ethanol than normal poplars.

VIB and the Belgian Biosafety Council will of course promise that this trial will be contained and that no pollen will contaminate nearby native poplars. And this will probably be true. However, it needs to

be stressed that this trial is not a scientific academic exercise but a first step towards the obvious aim: the commercial planting –in Belgium and elsewhere- of GM poplars for large-scale production of cellulosic ethanol and pulp for paper. And that would be an environmental disaster.

Poplar is a common species throughout the world and particularly in Europe, where many people grow them for commercial purposes. Poplars have the peculiarity of hybridizing quite easily. This means that the pollen from one species can fertilize the flowers of a different species, resulting in hybrid trees sharing qualities from both species. This is a very well known fact, and foresters have used it to produce many hybrids by crossing different species and even crossing European with American poplars. If GM poplars were to be established in commercial plantations, pollen contamination by GM poplars would become inevitable. The wood of the descendants of the contaminated poplars would contain much less lignin than the original natural species and would thus be easily destroyed by storms and be prone to pest attacks precisely because of their low lignin level. As a result, entire forest ecosystems would suffer the impacts.

To make matters worse, enormous areas of food producing lands would be taken over –in North and South- by large-scale GM poplar plantations to feed either the cellulosic ethanol business or the pulp and paper business or both.

In sum, Minister Ceyssens did not plant a simple tree. What she planted is one of the major threats ever faced by forest biodiversity, masked under the label of “science and innovation”. What she planted is a symbol of corporate takeover of nature and a first step towards environmental disaster. She probably got a round of applause from VIB officials and their corporate partners. Well deserved for her efforts no doubt.

However, the Belgian government needs to be reminded about its commitments as party to the United Nations Convention on Biological Diversity, which on this same month (May 22nd) commemorates International Day for Biological Diversity, with this year’s theme being none other than “Invasive Alien Species”. Planting GM poplars is clearly a slap in the face to both the convention’s objectives and to this year’s theme. What can there possibly be more alien than a GM poplar, what can be more invasive than that and what can be more effective for destroying biological diversity?

* for more information see http://www.wrm.org.uy/subjects/GMTrees/Belgiumtrials.html
and see also http://www.wrm.org.uy/subjects/biotechnology.html)