

## Genetically engineered trees - a ticking "time bomb"?

The release of genetically engineered trees into the open environment is an internationally disputed issue. Using genetically engineered poplars as an example, the following report gives clear evidence that it is not possible to adequately control the risks associated with the release of such trees, either in terms of space or time.

Poplars reproduce via pollen and seed as well as vegetatively via shoots, with seed and pollen capable of spreading over very long distances. Even single events resulting from long distance distribution can be of major biological relevance, as individual trees can produce millions of pollen and seeds every year. In future, it is expected that the consequences of long distance distribution will increase significantly because of climate change.

In view of the commercial growing of over one million genetically engineered poplars in China, there is great concern about cross-pollination and hybridisation with natural poplar populations. The poplar trees grown in China are genetically engineered to produce a Bt insecticide. Due to their resistance against certain pest insects, the trees are likely to have a higher fitness compared to other trees, thus fostering their proliferation. Since these genetically engineered trees express an insecticide throughout their whole lifetime, they also pose certain risks to other organisms such as insects, the food chain and whole ecosystems such as forests. Additionally, there is a risk that pest insects will develop resistance. In the event that damage occurs after a longer period of time, the chances of completely removing the genetically engineered trees from the environment are very low.

In the light of these problems, we urge that regulations be put in place to prevent the release of genetically

engineered organisms such as trees or crop plants, if there is no expectation of their successful recall. These regulations are necessary to protect biodiversity and evolutionary integrity.

A high level of precaution must be applied in the context of genetically engineered trees. Due to their high potential for spreading their genetic material, their long lifetime and importance for ecosystems such as forests, they inherently pose - as the example of poplar shows - some unique environmental risks.

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