

Biofuels: The Cellulose Barrier

Voice-over 1:

In congested, polluted central London, they're researching the possibilities of making biofuels from poplar trees. They hope that, soon, poplars will become a reliable, renewable source of biofuel.

Matthew Nelson:

Well, the first thing that we need to do when we receive our wood samples is obviously grind all the material down to a uniform particle size.

Richard J. Murphy:

We need, er, a biomass that will have high yield and also the right qualities for being able to then transform into a biofuel. The following step involves applying enzymes to it in order to digest the cell wall material and release the sugars that are held inside the...the woody biomasses that you can see here. The next step is fermentation of sugars into ethanol. The final stage is to, er, concentrate the alcohol, and then it can be used as a fuel.

Voice-over 1:

It all starts in these greenhouses in Nancy, north-east France. Different varieties of poplars are being grown here. Widespread, fast-growing and so undemanding that they can grow on non-agricultural land, poplars have been good candidates for biofuel production for years.

Voice-over 2:

The poplar has an amazing capacity for capturing solar energy. We can see that very well in these leaves, which are absorbing solar energy and transforming it into wood and biomass.

Voice-over 1:

But scientists working for a European Union research project called ENERGYPOPLAR aren't just looking for any old tree. They're looking for a "super-poplar".

Voice-over 2:

We want to select a poplar which will grow very fast, produce lots of wood and will simultaneously be efficient at using minerals, and which will have the minimum impact on the environment.

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