

These genetically-modified poplars are easier to cut down — and can produce more bioethanol

Wood mainly consists of cellulose, hemicellulose, and lignin... In [genetically] modified poplars, one of the molecules involved in the production of lignin, the CSE enzyme, is expressed less.

As a result, less lignin is produced and the composition of the lignin polymer is slightly different. Together, this ensures that it takes less effort to break down the wood and convert it into useful substances such as bio-ethanol.

The field trial is part of the research by prof. Wout Boerjan, dr. Barbara De Meester, and dr. Thatiane Mota (VIB-UGent Center for Plant Systems Biology) into the potential of biomass derived from plants as renewable and carbon-neutral raw material for the production of bioenergy and biobased products.

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This will be the third field trial that VIB is carrying out with genetically modified poplars with a modified wood composition. The difference between the three field trials is that each time a different gene involved in the production of lignin has been suppressed in the poplar DNA, each with slightly different effects in the tree.

All these field trials are part of the search for genetic changes that change the wood composition in a favorable and stable way.

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