

# Super trees increasing eucalyptus oil production in Victoria

September 26 2014, by Ella Kelly

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Eucalyptus oil is an Australian household staple – chances are you have

some in the cupboard at home. It was the first indigenous product to be exported overseas in the early years of European settlement, and has since been used for a wide variety of areas from fragrances to pharmaceuticals to industry.

Yet the production of this iconic Australian product has moved offshore in recent years, with China now being the highest producer of eucalyptus oil for the global market.

In a bid to boost Australia's oil production, researchers from the University of Melbourne have been working with local eucalyptus oil company FGB Natural Products over the past 15 years to create "super-trees" for plantations.

These super-trees are specifically selected to optimize growth, oil return and economic requirements for widespread eucalyptus oil production.

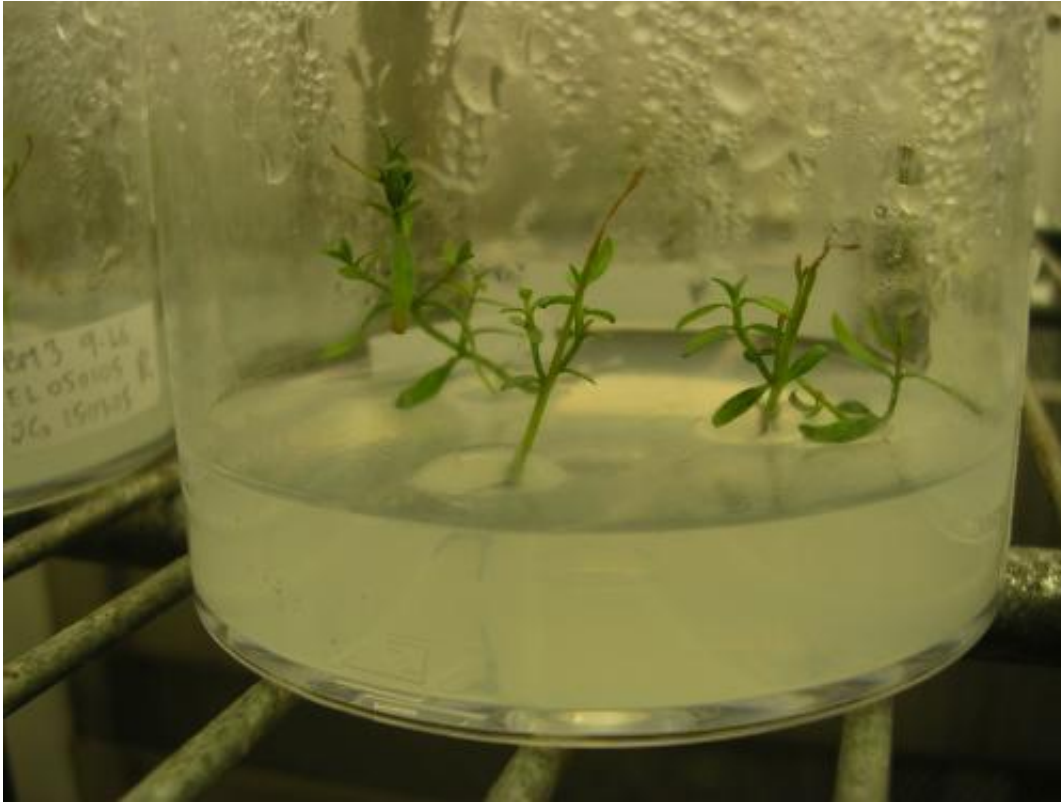
Professor Ian Woodrow and his team from the School of Botany assessed thousands of individuals of Blue mallee, a species with a naturally high quality and volume of oil, to select the best trees for a breeding program. This not only included plants that produced high volumes of good quality oil, but also had a fast growth rate, a good leaf-to-stem ratio and high water use efficiency.

The researchers selected 20 individuals that they found to have these superior traits and then embarked on the difficult venture of cloning them, something that had not been done before.

Professor Woodrow and his colleagues developed a new tissue culture technique to clone the super-trees, and using clonal seed orchards, they have created three million first generation seedlings.

These seedlings were planted on the FGB's plantation sites in northwest

Victoria and will be ready for harvesting next year.



Seedling clones in tissue culture. Credit: Ian Woodrow

So far researchers have already seen much higher growth rates in the super-trees compared to naturally growing Blue mallees, and are expecting to see a much higher [oil](#) yield and quality after the harvest.

This development will make the Australian market far more competitive and sustainable in the global market. With demand for this natural product going up in recent years, there was a threat that the Australia companies could not compete with overseas markets.

"Without this venture we could have lost the industry in Victoria and

perhaps elsewhere," said Professor Woodrow.

In other good news, the work has also lead to a number of research spin-offs, with Woodrow's team receiving a five year ARC Discovery Project to investigate the biochemistry of terpenoid biosynthesis in eucalypts.

Provided by University of Melbourne

Citation: Super trees increasing eucalyptus oil production in Victoria (2014, September 26)  
retrieved 26 April 2024 from

<https://phys.org/news/2014-09-super-trees-eucalyptus-oil-production.html>

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