



BananaWax

The BananaWax team has developed a technology to extract high-value wax from the leaves of banana plants.

Banana wax is a more ecologically friendly alternative to Carnuba wax (most common natural wax) and can provide a local alternative to imported industrial waxes. The technology converts waste material into a product that creates a positive impact on the environment.

The challenge

Banana cultivation generates a large amount of residue since each plant produces only one bunch of bananas. After harvesting the remainder of the plant is usually chopped down and left to decompose on the plantation floor, which takes around four months due to the waxy nature of the green material. Bananas are an important crop. Global production in 2015 was 117.9 million tonnes. In 2016/17 Australian banana production was 414,000 tonnes, which resulted in approximately 800,000 tonnes of plant waste.

The response

The team has successfully demonstrated the laboratory scale extraction of high-value banana wax from banana waste while providing a solution to increasing worldwide demand for bio-based waxes. Natural waxes can be used for several purposes including candles, packaging, food, coatings and polishes, hot melt adhesives, tyres and rubber, cosmetics and personal care. BananaWax can provide a local alternative to imported industrial waxes, assist banana farmers to diversify and generate auxiliary income, and stimulate the local economy.

The impact

The laboratory-scale extraction of banana wax has been successfully demonstrated. If wax testing is successful, the next stage of the process will be to investigate the economic and engineering aspects of wax extraction.

The project is still in its early stages and hence there are no actual impacts flowing from the BananaWax project yet. However, the potential benefits include:

- a potential source of additional income for banana growers
- potential environmental benefits from a reduced waste stream
- a more environmentally friendly source of wax
- potential opportunities to supply to the domestic and export market.

An independent economic assessment estimates that the net present value of the benefits of BananaWax are valued at \$511,900 (in 2018-19 dollars) over a 10-year period. The project has a benefitcost of 11.8:1.

Accelerated through CSIRO's ON program

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<https://www.youtube.com/watch?v=8v1yeYUJqSk>