Research providing tropical agriculture solutions

QUT’s Centre for Tropical Crops and Biocommodities (CTCB) delivers international research and consulting solutions in biotechnology and biomass processing. We specialise in tropical agriculture and the high-value biocommodities sector, and support agricultural advancement in developing countries.

About the CTCB
The Centre brings together an outstanding mix of international expertise in plant biotechnology, process engineering, industrial chemistry and commercialisation, creating a continuum of research and development from laboratory through to finished product.

How our research makes a difference
Our research makes a significant contribution to improving tropical agriculture in Australia and developing countries in Africa and South-East Asia.

As part of QUT’s Institute for Future Environments, our researchers and staff collaborate with government and industry partners to bring our research solutions and innovations to the real world.

From enabling farmers to grow more food using less water and chemicals, to improving crop nutrition and pest resistance, to discovering new ways to efficiently and profitably use agricultural waste products, CTCB researchers are committed to finding innovations and knowledge that make our world more sustainable, secure and resilient.
Research capabilities

Our key research areas are:

- **Plant biotechnology** - Advances in biotechnology can help farmers grow more food using less resources
- **Plant genomics** - We work to improve the genetic quality of tropical crops, producing more nutritious and resilient crops
- **Biorefining and bioproducts** - Our research into biomass processing helps convert agricultural waste into valuable and reusable materials including green chemicals, biofuels and other bioproducts.

Tropical crop specialisations in bananas, sugarcane and tropical pulses

Genetic manipulation for improving the nutritional status of food, and disease resistance and stress tolerance in tropical crops

Developing advanced techniques for disease diagnosis and control

Manufacturing high-value green chemicals, biofuels and other bioproducts from agricultural waste.

Our crop specialisations

**Bananas** - We’re leading efforts to create a 'super banana' that is disease- and drought-tolerant and genetically modified for increased nutritional value. These bananas have the potential to save millions of people from starvation in underdeveloped countries.

**Sugarcane and sweet sorghum** - Our research is driving innovation in the sugar industry and opening up opportunities for the production of biocommodities. We also carry out commercial research into biorefining, investigating industrial biotechnology, sugarcane processing and biomass conversion.

**Tropical pulses** - Pulse legumes, such as chickpea and mungbean, are some of the world's most economical sources of protein and feed. To deliver higher quality products to international markets, we’re developing pulses with increased nutritional value that are also resistant to drought and disease.

Research facilities

We have access to world-class research facilities, including:

- molecular biology laboratories, tissue culture facilities, plant growth rooms, and PC2 glasshouses
- purpose-built laboratories for analysing the physical, mechanical, chemical and biological properties of solids, liquids and gases
- extensive glasshouses and research farms
- the Mackay Renewable Biocommodities Pilot Plant, which can convert biomass into biofuels, green chemicals and other bioproducts.

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