

Learning from the overseas experience

SRA has approved funding for this project to commence in the latter half of 2015, which will look to bring some of the efficiencies of overseas milling operations to benefit Australian factories.

Key Focus Area

Milling efficiency and technology

Project name

Develop a blueprint for the introduction of new processing technologies for Australian factories

Project number

2015/043

Project leaders

Ross Broadfoot, Darryn Rackemann

Project end date

September 2017

Currently several technologies are being used in overseas cane factories that are not being applied in Australian factories.

These technologies have mostly been implemented overseas in order to reduce the process steam consumption.

QUT believes that these technologies may be suitable for Australian factories, with benefits in terms of cost effective increases in crushing rate and increased sugar recovery.

For some Australian factories (for example, those currently cogenerating export electricity to the national grid), the benefits of reduced process steam consumption will also be financially attractive.

The project will investigate falling film tube and Kestner evaporators, the implementation of molasses conditioning to assist the performance of batch and continuous pans, vapour recovery from condensates and other energy saving measures.

The technologies will be assessed based on capital and operating costs and impacts on sucrose degradation, energy consumption and water and effluent management.

The project will determine a blueprint that defines the technologies that are most suited to adoption into Australian mills now, for our current operational objectives, and are well suited to providing major reductions in process steam consumption in the future.

The main phases of the work program involve:

- Determination of the extent of sucrose degradation in Robert evaporators in two Australian factories and estimation of losses in alternative evaporator technologies; and
- Inspections of the technologies in several overseas factories.

The project involves the investigation of changes to the mass and energy flows, including the water balance of the factory, through adoption of the technologies into Australian factories.

The modelling will be undertaken using the 'whole of factory' Sugar SysCAD model. QUT recently completed the development of the Sugar SysCAD model under another SRA-funded project.

Ross Broadfoot and Darryn Rackemann plan to visit factories in Mauritius, Reunion and South Africa later this year to inspect the equipment, and familiarise themselves with the operation and performance of the technologies.

The sucrose loss studies are also planned to be undertaken during the 2015 season.

Some of the technologies being used in energy efficient overseas factories can be introduced into Australian factories to provide capacity and operational benefits.

