

Overseas factories share options for efficiency

It is well known that farmers like to look over the fence to see what innovations their neighbours are up to. And while it is nowhere near as easy for millers to “look over the fence”, a current project looking inside several overseas sugar factories is unearthing potential efficiencies that could be incorporated into Australian sugar mills.

Researchers from the Queensland University of Technology (QUT) are in the midst of a project that is unearthing valuable experience and lessons from overseas sugar mills.

Their aim is to provide a blueprint that defines some technologies that are being used in overseas mills that could be suitable to Australian sugar mills now.

In December 2015 and February 2016, researchers Dr Ross Broadfoot and Dr Darryn Rackemann visited overseas factories in South Africa, Reunion, Mauritius, India and Germany.

A major component of their project was to study overseas Kestner and falling film tube evaporators and compare them to Robert evaporators, which are standard in Australia.

They are comparing their overseas observations with experiences in several Australian factories as a reference point.

The project had been identified as it was recognised that overall Australian factories are among the least energy efficient in the world with process steam consumption levels being for most Australian factories about 50 percent on cane.

Some of the technologies being used in these overseas energy efficient factories (where steam consumption levels as low as 30 percent on cane are being achieved) could be introduced into Australian factories to provide capacity and operational benefits.

These technologies would then suit any transformation of Australian factories to more energy efficient configurations.

Examples of the technologies which are being used in overseas factories and could have immediate application into Australian factories include:

- falling film tube evaporators and Kestner evaporators
- in-line juice heaters using the vapour from the final effect,
- direct contact pan feed conditioning systems, and
- vapour recovery systems such as in condensate cigars.

In most cases, these technologies also boost plant capacity and processing efficiency such as sucrose recovery and reduce heat loads on cooling water systems.

“The next phase of the project is bringing all that data together,” Dr Broadfoot said. “We will model four Australian factories where we focus on the implications of implementing and integrating these technologies.”



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

Above: Darryn Rackemann with QUT in front of two falling film tube evaporators and a semi-Kestner evaporator at Le Gol factory, Reunion.