Proceedings of the Australian Society of Sugar Cane Technologists, volume 42, 452, 2020

Poster paper

Maximising mill efficiencies through online MicroNIR monitoring

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The use of online near infra-red (NIR) systems for monitoring constituents of cane, bagasse and sugar in most Australian sugar mills is well established. With SRA providing remote support, calibration updates and assistance with data analysis and interpretation, these systems provide mills with reliable, real-time data to aid factory performance.

Recent advances in NIR technology has led to the emergence of miniaturised instruments. Compared to their predecessors, these small instruments are cheaper, easier to install and provide equally reliable data – opening opportunities to explore new applications across the mill. This poster presents the success of two recent trials carried out with the Viavi MicroNIR instrument at the Tully Sugar Limited Tully Mill.

In the first case, the MicroNIR was attached to the exit chute of the final mill and used to predict the moisture, pol and fibre content of bagasse online every 10 seconds. This type of real-time feedback provides mill operators the opportunity to be more reactive in making extraction optimisation adjustments or for boiler operators to readily respond to incoming bagasse of high moisture. Furthermore, the NIR data collected across the first and last mills may be used in conjunction to manage adjustments for minimising sucrose losses along the milling train.

The question then raised was whether online MicroNIR monitoring could be used in other areas to account for or aid in reducing sucrose losses. In the second trial, a MicroNIR was attached above the exit doors of the mud hopper and predictions for pol, fibre and moisture were generated continuously. Trending such data now allows sucrose losses to this stream to be tracked and may also be used to inform optimisation adjustments across the filter station.

These trials have demonstrated that online MicroNIR applications open new possibilities for monitoring and informing mill-efficiency improvements.

Key words Cane, bagasse, sugar, sucrose loss, NIR