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BUNDABERG Sugar

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- Convert imagery into yield maps

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Precision system finds the sweet spot on sugar yields

A project led by Andrew Robson, a University of New England research fellow, has provided estimates of regional production for sugarcane across Australia.

The research involves about 90 per cent of the Australian growing regions through yield prediction, foliar (leaf) nitrogen mapping or cane-grub mapping projects.

"The regional estimates are really quite good, so we are now doing eight or nine growing regions and covering between 40,000 and 50,000 crops," Dr Robson said.

"It does produce block predictions as well, which we are currently refining, and it also produces yield maps en masse."

Dr Robson, who is part of UNE's Precision Agriculture Research Group, said the project provided a geographic information system layer compatible with all of the mill GIS data systems.

"So they are able to use the GIS system, they are able to segregate separately and provide each grower with their own farm maps, and that has been displayed in their harvest report that is done annually," he said.

The yield maps are derived from satellite imagery using algorithms that convert image values to yield (tonnes of cane per hectare). Predictions are also made for the average yield produced by each region. These assist with data for forward selling of sugar after harvest. They are provided between the months of March and May, depending on when the imagery is captured.

"The fact that we are producing maps for most of (the sugar industry) now is really exciting," Dr Robson said.

Gavin Lerch, Bundaberg sugar grower services officer

"A single image coverage is about 3600sq km and this is repeated across 8 locations, so we best orientate that to fit the majority of the crops."

For Queensland-based Bundaberg Sugar grower services officer Gavin Lerch, satellite yield mapping adds a second opinion to growers' cane crop estimates.

"We have got very good data for the last four years and three out of the last four years provided an accuracy of 97 per cent or better," Mr Lerch said. "In the same years, the growers were between 4 and 9 per cent out."

Bundaberg Sugar, which has 270 growers in Australia as well as company farms, also benefited from the short time frame required to gather estimates using the technology.

"Obviously, the mill needs to know how much cane is out there so that they can plan the season length and the commencement time of the crushing," Mr Lerch said. "It also identifies the poor yielding areas and this has been useful in the Bundaberg region, particularly in the last couple of years, with the floods that we have had."

Imagery captured by a range of satellites has been used for this research. Geoimage are proud of our association with Andrew and we look forward to his expansion into other industries with great anticipation.

This article was published in the Australian Business Review on the 5th August 2014 and written by journalist Jennifer Foreshew.