

Collaboration the key to ongoing improvement in harvest efficiency



Excessive harvesting losses are not just an issue in Australia, but also in overseas industries. SRA Adoption Officer Phil Patane travelled to the Brazil and the US to learn more.

The Australian sugar industry has been given a valuable insight into factors that drive the design decisions of the two major harvester manufacturers, via a recent trip to Brazil and the US. SRA Adoption Officer, Phil Patane, made the trip in 2016 as part of his extensive work with the Australian industry to optimise the harvest. He visited the Case IH factories in Sorocaba and Piracicaba in Brazil and John Deere's main factory in Thibodaux in Louisiana.

Here are Phil's top five lessons

1

The Australian market for harvesting machinery is small. It represents less than 3 percent of harvesters sold in the world, meaning that if Australia seeks to influence design change, then it will be crucial to work with industries such as Brazil.

2

Better integration between research and the commercial manufacturers is required. Extensive Australian research over 20 years has shown the opportunities for improving harvesting efficiency, but there is potential to improve connections between that research and the manufacturers.

3

Excessive harvesting losses are a key issue not only within the Australian sugar industry but in Brazil and the US as well. Although ground speed and pour rates in the US and Brazil are significantly lower than those in the Australian industry, they continue to face the same challenges of matching row profile to basecutter setup.

4

The Brazilian harvesting market is predominantly dictated by fuel consumption and performance. Current and past research indicates that increased fan speed subsequently results in greater cane/juice loss, as well as an increase in fuel consumption. This is an area that SRA harvesting research will continue to address in next season's trials focusing on assessing cane/sugar loss and monitoring fuel consumption.

5

The Australian sugar industry needs to continue its high level of harvesting research to enable us to keep our competitive edge in the worldwide market. Focus needs to remain on doing the best possible job with current machines and retro-fittable improvements which are economically viable for the Australian industry. This includes working with aftermarket suppliers.



Top left: Phil visiting John Deere's facilities in the United States.

Top right: Phil Patane at the Case IH harvesting manufacturing plant in Piracicaba, Brazil.

Left: Harvesters under construction in Brazil.

Opposite page: Some very big cane at the Programa Cana do IAC in Ribeirão Preto - São Paulo.

Next steps

Phil says that the trip has already strengthened ties between research and the overseas manufacturers, with both companies keen to collaborate in the future.

"Continued contact with Case IH and John Deere will allow Australian research to be trialled and, hopefully, adopted in the future," Phil said.

"An example of this is that Case IH has started to investigate the potential benefits of optimising the feedtrain on the 8000/8800 series harvester.

"John Deere have reduced maximum fan speed setting to 970 RPM on the new model CH 570."

Other modifications include the removal of the "football rollers" back to standard individual rollers and an option of changing to an additional 100 cc pump to speed-up basecutters to 700 RPM.

"Although this is a step in the right direction, these are only minor improvements in regards to minimising cane loss and improving machine performance," he said. "Other bigger issues, such as extractor loss and front-end design improvement need to be continuously communicated to the manufactures. It was the "feeding green cane" project in Australia that drove the development of the JD 3520."

On-going contact with the engineering and marketing division of Case IH and John Deere will also allow Australia better understand future design change to adapt to this development.

Global Product Marketing Manager Case IH – Sugarcane, Billy Lawson, said the visit strengthened the global sugar industry.

"Overall, our industry's size is small, but we experience a diversity that is perhaps unmatched in the world cash-crop arena," Mr Lawson said.

"Visits from groups such as SRA foster an open exchange of ideas and cultural practices that are imperative for continued growth. Case IH was happy to host Phil and we remain ready to open our doors again to anyone from SRA."

The study tour was made possible through a Sugar Travel and Learning Award, through SRA's Research Funding Unit. The purpose of these awards is to provide career development opportunities for sugar industry professionals, and to also provide benefits to the Australian industry.

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