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SCHLOT puts wealth of data at your fingertips

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Project details

Key Focus Area:

Farming systems and production management

Project name

Incorporation of Australian crop data and industry characteristics into a tool to facilitate informed harvest decision-making for the Australian industry

Project number

2015/094

Principal provider

Norris ECT

Project leader

Stuart Norris

Project end date

September 2016



Herbert grower and contractor
Darren Reinaudo.

SCHLOT puts wealth of data at your fingertips

Norris ECT has developed a new program that is aimed at giving the sugarcane value chain greater information about harvesting costs and practices. By Brad Pfeffer

A new online tool is giving growers, harvester operators and millers access to new and detailed information to help inform discussions around optimising harvesting efficiency.

The new online tool is called SCHLOT, which is short for *sugarcane harvest loss optimisation tool*, and it can be accessed via the website www.schlot.com.au.

Developed by Norris ECT, the tool brings together a vast array of information about harvesting practices and costs, and distils this down into a simple and readable tool for all three sectors of the industry.

Stuart Norris of Norris ECT said that the ultimate objective of collating the vast amount of data behind SCHLOT, and presenting it in a useful way, was not only to increase the size of the harvest pie, but also to more appropriately carve up that pie.

SCHLOT works through the harvesting, transport and milling processes, from cane in the field to sugar in the bin, and highlights the impact on the value chain (costs and revenue) of any change in harvesting practice.

"There are about 150 to 160 parameters that feed into the simulation, and then we look at what happens at the mill, and then we get the outputs," Mr Norris said.

"This (tool) is not about different sectors competing, but the industry as a whole. We know that maximising profit for one sector can often come at the expense of others, but with SCHLOT there is scope to have a conversation about how to best divide a bigger pie, and how to make sure the pie is as big as it can be."

The work is being assisted by SRA research investment, and workshops have been held across the industry in 2016 to raise awareness of the program.

Herbert grower and contract harvester Darren Reinaudo attended one of the workshops and welcomed the opportunity that would come with improved information via SCHLOT.

"We are always looking to improve on what we have, just like everyone else is," he said. "This is another guide for us to use. It is not the final gospel, but it is a guide to help inform decisions."

He operates a 90,000 tonne group and said that there would be a range of interest in SCHLOT across the group, although he also added that all parties want "to get the best product we can into the bin to make the most money".

"Most harvester drivers know the right thing to do, but there are outside factors that can make it hard to get to that level, be it the weather or a farm's layout, they all influence the result," Mr Reinaudo said.

“Farmers are also trying to do their best, and sometimes things are outside of their control.

“But having more information about a block lets us have a conversation about how we manage it.”

SRA Adoption Officer Phil Patane said that SCHLOT allowed an assessment of harvesting practices, and also a farmers’ particular block of cane.

“The problem is that the current payment system is broken. You may have one grower with long rows, easy to turn around on the headland and the weeds under control, and the next grower might have short rows. But the costs are the same per tonne,” he said.

“That’s where SCHLOT allows you to put the information in. At the end of the day, the operator is paid on a per tonne basis, and things like the machine turning around more often costs money.”

He added that SCHLOT was about collaboration. “It is key that all three sectors work together. SCHLOT allows people to assess different practices and scenarios, look at the dollar signs, and pay accordingly.”

Mr Reinaudo is also a close follower of other research into harvest losses. In this theme, he has recently shifted to EHS chopper drums.

These chopper drums have been the subject of current SRA research and have been shown to be one method of reducing chopper losses.


“This is the research that we pay for, and if the results are showing something consistently, whether it be on the harvester or with farming, it is important to do it,” Mr Reinaudo said.

“I start off talking to people like Phil, but I also then want to talk to owners and operators who have experience with it. That’s where we get our best understanding and make the decision. It really is about practical application of research.”

- www.schlot.com.au

Screen shots of the new online tool, SCHLOT


Harvest speed



At harvesting speeds between about 4 and 6-8 km/hour the machine is moving fast enough for the gathering and feed systems to work well without excessive stool damage.

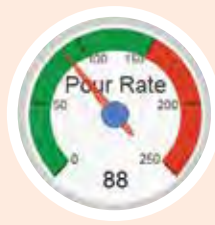
Stool damage can occur at speeds both higher and lower than this optimum range in different crop configurations.

Cleaning rate



When the flow rate through the cleaning chamber is over about 90 tonnes/hour, the selectivity (ability to extract trash rather than cane) of the cleaning chamber drops rapidly, and the amount of cane extracted to the trash blanket increases significantly. It is important to appreciate that cane extracted by the cleaning system (especially at high rpm) is 'atomised' as it passes through the fan, and not visible in the trash blanket.

Elevator pour rate



In green cane, elevator pour rates over about 150 tonnes/hour generally lead to boiling and spillage, and this increases losses.

Primary RPM 750 rpm	Estimated yield 95	Burned/Green Green <input type="button" value="v"/>
Harvest speed 6 km/hr	Crop lodged % 50	Field conditions Average day hav
Billet length 100 % Max length	Chopper 6 Blade Chop <input type="button" value="v"/>	Row spacing 1.5 single <input type="button" value="v"/>
Topping? <input checked="" type="checkbox"/>		
Generic high trash variety, Generic modern full sized harvester		

Yield delivered to mill	98 t/ha
Tonnes CCS lost / hectare	1.2
Fibre in Cane	18.6%
Extraneous matter (leafy) in cane	13.2%
Clean stalk lost through billeting	3.9
Clean stalk lost through cleaning	3.3
Total crop yield as delivered to the mill, including clean stalk, tops and dry and green leaf.	