



## Water quality work that works for us

*The Protecting our Chemicals project is working collaboratively with growers and using practical demonstrations to create a positive impact in the Wet Tropics.*

When Frank Vecchio attended a Tully Cane Productivity Services Shed meeting about SRA's Protecting Our Chemicals for the Future project, he was so happy to hear about it that he approached Project Leader Belinda Billing to offer his farm for demonstration work straight away.

"I'm just glad that our own research organisation is getting involved with water quality and sustainability. I can trust the information and if I have any questions I can speak to SRA directly," explained Frank.

The project Frank joined is helping growers to become more knowledgeable of how the herbicides they use interact with their local environment.

They are engaging in on-farm trials and demonstrations, and testing different herbicide strategies to those they might normally use. A key part of the project is directly involving growers in the science of the behaviour of pesticides in different situations.

For example, growers have the opportunity to participate in rainfall simulations and end-of-paddock monitoring to measure and compare the losses of pesticides from paddocks.

Participants also learn about the properties of pesticides that cause them to have environmental impacts.

For example, different herbicides exhibit differences in solubility, how tightly they bind to soil and organic particles, UV stability, biodegradation, and toxicity to aquatic ecosystems.

Additionally, different herbicides may have vastly different application rates, from 75 grams active/ha to more than 3 kg active/ha. Growers get to learn how all these characteristics combine to give each herbicide a "relative risk".

Frank was one of three growers in the Wet Tropics who hosted rainfall simulation demonstrations.

### Objective

To help growers have information and support so they can make informed decisions, and to have confidence that alternative pesticide strategies can still give effective weed control and contribute to improved water quality.

He commented that he likes this work because he can see how it is done, how it works and, then, the results tell him which herbicides are more mobile than others. "I want to know if herbicides are leaving my paddock, and it helps me to understand how that research was done. It means that I can trust the information," he said.

Fellow Tully grower Gerry Borgna says it's not just knowing which chemicals are more mobile and toxic, he wants to know the good news.

"When I look at this data, I can see that some chemicals are barely being picked up in the monitoring. There is also information coming out that shows us that some chemicals are far more dangerous to the environment than others – I want to hear about this and understand the positive choices I can make. This work allows us to talk about good news and not just focus on the negative," Gerry said.

The project draws on research conducted by SRA weeds agronomist Emilie Fillols as well a range of research conducted through the Queensland Government's Paddock to Reef program.

Discussions with growers involved has revealed that they often feel that water quality research and monitoring is done in isolation from them, despite the fact that they are being asked to change.

With this in mind, the Protecting Our Chemicals team works to bring the latest relevant research to the grower groups and to connect them with researchers, such as the DSITI End-Of-Catchment Loads Monitoring team.

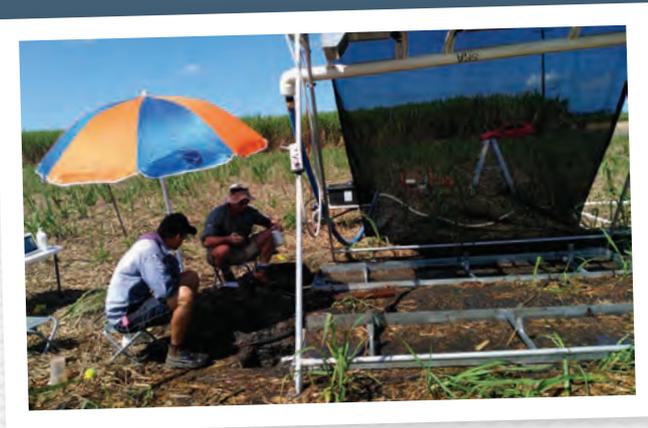
A great benefit of the project identified by all participants is having the water quality scientists and also Government policy makers on the farm. This allows for great two-way exchange of information, ideas and opinions.

Ryan Turner from the Department of Science, Information Technology and Innovation's Great Barrier Reef Catchment Loads Monitoring Program said that he and his team members are passionate about sharing their work with every stakeholder that is involved in improving water quality at the regional, local and state wide scales.

He said this is not only to provide access to the information, but to gain context and local knowledge that makes the information more useful for everyone.

"We have these great datasets that can inform changes to make the improvements needed together, but we only have part of the story," Ryan said. Coming to the regions provides us with the opportunity for open discussion with everyone involved. For us, spending time in the regions talking with growers, extension providers, industry representatives and everyone else gives us fantastic context and local knowledge on the waterways that we are monitoring. I learn from everyone I meet with and it gives greater value to the dataset meaning we can get better, more useful information for everyone."

**Opposite:** Tully grower Frank Vecchio has been a keen participant in the Protecting our Chemicals project.



**Above:** One of the rainfall simulations in action.



**Above:** A shed meeting at Tully discussing the project.

## What have growers been interested in?

Grower groups are working with the project team to compare different application techniques and chemicals. Demonstrations with low cost end-of-paddock water quality monitoring equipment are in place in Tully, Innisfail and Gordonvale. Some sites are comparing newer, non PSII chemicals, one is looking at a zonal application of residual herbicide in problem areas of the block with only knockdowns used elsewhere, while others are looking at the potential for only using knockdown herbicides in ratoons with lower weed pressure.

Growers were motivated to look at the newer, lower risk residuals after seeing that the potential for loss is lower than traditional herbicides used. While some in the groups were already using these, others had been unsure and wanted to see how they work. Growers were particularly interested in learning about a newly registered product flumioxazin (Valor® 500 WG) and demonstrations have been established in Tully, Innisfail and Mulgrave districts.

Reports will be written for all demonstrations and shared with grower groups and within each district. For more information contact Belinda Billing [bbilling@sugarresearch.com.au](mailto:bbilling@sugarresearch.com.au) or (07) 4056 4512.