

NSW DPI Technical Officer, Nathan Ensbey, inspects variety trials as part of the Australian Soybean Breeding Program.

## Soybean continues to boost NSW sugarcane production

*Improvements in varieties and crop management are triggering an ongoing interest in soybean at the beginning of the sugarcane cropping cycle, and also delivering potential benefits to the subsequent cane crop.*

The role of soybean crops in the sugarcane crop cycle is continuing to grow across the industry, with the legume crop's popularity particularly strong within the sugarcane growing regions of northern NSW.

Farming in the heart of Australia's largest production region of soybean, NSW cane growers have jumped in boots and all to a soybean fallow rotation, as have other production regions all the way along the coast.

Technical Officer with the NSW Department of Primary Industries, Nathan Ensbey, said that the growth had been driven by improvements in varieties and agronomy over the last 10 years, as well as a shift to soybean varieties that produced grain suitable for higher value human consumption markets.

At the NSW DPI research station at Grafton, Mr Ensbey works with team leader Dr Natalie Moore and Technical Assistant Sam Blanch.

Their work covers the NSW component of the Australian Soybean Breeding Program, where they evaluate potential new varieties, as well as conduct other research such as crop agronomy.

This is a co-investment between NSW DPI, the Grains Research and Development Corporation, and CSIRO.

The big factors in their variety assessments include weathering tolerance (as the NSW harvest coincides with the wet season), rust resistance, yield, protein, and other issues such as lodging and pest resistance.

"We have seen a shift over the last five years, where the aim of soybean crops in the cane growing cycle has moved towards getting the agronomy precise, selecting the right variety, and building relationships with processors," Mr Ensbey said.

"We are also seeing new varieties that present more options for cane growers. For example, the late-season variety Hayman has high yield and high protein, so it allows growers to plant in January and receive a viable crop, which has been well received by cane growers.

"We know that if you keep your soybean crop clean, with no weeds, and grow it well then it can reduce host nematodes. We've also had up to 90 kg of nitrogen per hectare left in the soil from a well grown crop, although a poor crop may be half of that.

“So it is a great opportunity to keep weeds out and boost nitrogen.”

As a cane grower himself, Nathan knows of course that there is still much work required to follow it up with a successful crop of cane.

At the research station, the agronomy work is looking at factors including nutrition, plant population, and time of sowing. Mr Ensbey is also working on a Grower Solutions program that works with local growers and agronomists on solving locally relevant issues.

This program is co-funded by NSW DPI, GRDC and QDAF and includes issues such as raised beds, controlled traffic, and even work looking at mill mud and ash within raised beds to improve grain production.

For example, one of the recent successes of this Grower Solutions program came with an on-farm demonstration comparing the variety Richmond to the familiar variety Asgrow A6785.

In the demonstration, at Tim McMahon’s property, Richmond yielded 7% higher than Asgrow A6785 (4.2 t/ha compared to 3.9t/ha), with potential for a premium price as well. In the premium pricing scenario, the improved gross margin was up to \$397 higher for Richmond.

A short way north of the research station, Lawrence sugarcane farmer Bob Ensbey supplies the Harwood mill and says that he has seen a massive shift in the way farmers approach their soybean crop, shifting from simply a break crop to a cash crop in its own right.

“The soybean varieties are improving, with better standability and increased production per hectare,” he said. “They stand on their own two feet as a crop to grow with cane, particularly as we can get into the human consumption market with new varieties.

“Until 1990 we were a dairy farm here and basically grew soybeans for cow feed and round bale silage, but that has shifted now to a cash crop, with the side benefit being they are magnificent for the soil and the cane after it.”

#### More information

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**Left:** “We are seeing varieties that present more options for cane growers,” says Nathan Ensbey.

**Below:** The research trials at the NSW DPI Grafton Research Station.

