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Australian and Indonesian sugarcane industries sign pivotal biosecurity agreement

A landmark agreement has been signed between the Australian and Indonesian sugarcane industries in a frontline effort which will increase biosecurity protection for Australian farms.

Last month, Sugar Research Australia Chair Rowena McNally and Indonesian company, KPN Corp, Deputy Executive Director Andy Indigo signed an agreement in Brisbane to establish a research and development collaboration between the two countries.

This will see six major Australian sugarcane varieties propagated in plantations across the Indonesian archipelago and monitored for their resistance to a range of pests and diseases in a frontline biosecurity effort to protect sugarcane production in Australia, a relatively short distance away.

Six current SRA varieties representing about 65 per cent of crop production in Australia will be licensed for commercial production in Indonesia in a diverse range of environments and locations.

This will enable SRA to assess the resistance of these varieties to exotic pests and diseases that are currently non-existent in Australia.

Executive Manager Variety Development, Jason Eglinton (*below*), said one of SRA's fundamental services to the Australian sugarcane industry was biosecurity research.

"In 2023/24, \$4.3 million will be invested to support the management of endemic pests and diseases and to prepare for the potential incursion of exotic pests and diseases," Dr Eglinton said.

“Experience has taught us that the best form of pathogen control is varietal resistance which provides the necessary scale and reliability of control at a comparatively low cost to individual growers.

“Australia has been successful over the years in deploying genetic resistance to manage biosecurity threats such as gumming disease (eradicated), Fiji leaf gall (potentially eradicated), orange rust (well controlled) and smut (minimal losses).

“An integral part of testing Australian varieties’ reaction to exotic biosecurity threats must be undertaken offshore. For example, screening for smut resistance began in 1997 at the Indonesian Sugarcane Research Institute, funded by the Australian industry. The information gleaned about the susceptibility and resistance of varieties became crucial in the response to the arrival of smut in 2006.”

Indonesia is host to insects, bacteria, fungi, phytoplasmas, nematodes, oomycetes and viruses that are already recognised in the Australian biosecurity threat summary tables maintained by the federal Department of Agriculture, Fisheries and Forestry, with risk ratings ranging from very low to extreme.

But there are also a significant number of pests and pathogens of unknown risk and unknown potential economic impact to the Australian industry.

“These have not been scientifically identified and characterised,” Jason Eglinton said.

“Evaluating varieties under commercial conditions across the range of environments in Indonesia we will see the impact of known and unknown biosecurity threats. The results will provide a baseline of the risks to the current Australian crop.

“The six varieties have also been used extensively in the SRA breeding program so their reactions will also provide insight into the strengths and weaknesses of the future variety pipeline.”

Under the license arrangements, regular reports will be provided to SRA on the varieties’ reaction to pests and diseases in both propagations and commercial production. In addition, a production-based royalty payment will be paid which will be invested in the Australian sugarcane industry’s research priorities.

Benefits to the Australian industry are:

- Sentinel crops will be established and monitored across Indonesia at no cost to the Australian sugarcane industry.

- The varieties' resistance to a large range of biosecurity threats will be monitored.
- The information will enable SRA to develop a scientific analysis of the key threats to the Australian crop from exotic pests and diseases.
- The project will also provide information on any potential biosecurity weaknesses and strengths in the breeding pipeline.
- Any serious susceptibility will inform future specialist research and breeding efforts.
- If the varieties prove to be commercially successful, SRA will invest the financial returns in Australian industry research priorities.
- If the pilot is successful it could lead to increased collaboration in sugarcane research and development which may include biofuels.

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Caption: Dr Jason Eglinton, SRA Executive Manager, Variety Development



**Media Contact: Glenda Viner, Head of Communications and Marketing, Phone:
0427 208 211**

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