



# FROM UNKNOWN TO KNOWN – NEWLY IDENTIFIED SUGARCANE FUNGI

**S**RA scientists have discovered a type of fungi that can cause significant productivity losses in sugarcane in glasshouse and experimental conditions.

The fungus, called *Sclerotium rolfsii*, was recently identified and analysed in a series of experiments at SRA's Woodford pathology farm and, through this work, the fungus was shown to cause germination loss of greater than 70 percent in experiments.

However, it is not yet known if the fungus is affecting commercial sugarcane.

SRA Principal Researcher (Disease Management) Dr Shamsul Bhuiyan conducted the work with fellow SRA staff Priyanka Wickramasinghe (former staff), Stephen Mudge, Prakash Adhikari, and Kylie Garlick.

This fungus creates red to patchy-red lesions on the external surface of cane internodes, as well as pale-red to red discolouration of internal tissue of cane

stalks. Other symptoms also include light-brown and water-soaked lesions at the base of leaf sheaths of a seedling, along with white tendrils of fungus.

Through their work, the scientists inoculated (infected) sugarcane with the fungus and compared it to clean cane using the varieties Q208<sup>ph</sup> and Q205<sup>ph</sup>. They showed the substantial germination losses of greater than 70 percent in field conditions.

"Five weeks after inoculation, sett germination was five-fold higher in un-inoculated (clean cane) compared to the inoculated plots," Dr Bhuiyan said.

The sugarcane industry already deals with a range of fungi, with some of the most notable of these being *Pachymetra* root rot, and also sett-rot diseases like pineapple sett rot and fusarium sett rot.

"Sett rots are currently typically controlled by fungicides, but in the case of *Pachymetra* there are no fungicides that are effective at economic rates," Dr Bhuiyan

said. "Therefore, with the discovery of any new type of fungus, there are several steps that we need to take to learn more about what this means for our industry."

One of the first steps would be to determine the prevalence of the pathogen – how widespread it is and how much of a problem it could be. Another step would be to investigate any variation in the pathogen, varietal resistance, and other management options, including whether currently used pineapple sett rot fungicides affect the fungus. ■

*(Top left) Symptom of the fungus. (Top middle) An example of the fungus under 400 times magnification. (Top right) A comparison of un-inoculated ("clean") cane compared to cane inoculated with the fungi Sclerotium rolfsii. (Above) Sclerotium rolfsii fungal culture.*

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