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Poster paper

Unknown to known – *Sclerotium rolfsii* can cause severe germination failure and seedling death in sugarcane

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An unknown sclerotia-forming fungus was observed and isolated from sugarcane clones grown at Sugar Research Australia, Woodford Pathology farm in 2016. The fungus appeared to cause germination failure of sugarcane setts. Subsequently, Koch's postulates for this unknown fungus were fulfilled (Wickramasinghe and Bhuiyan 2018).

The fungus was isolated onto Potato Dextrose Agar (PDA) from the infected tissue and mycelia from internal pithy tissue. White mycelia and abundant sclerotia were grown on PDA (Figure 1A). Morphological observation and molecular analysis confirmed the identification of the fungus as *Sclerotium rolfsii*, the anamorphic stage of *Athelia rolfsii*.

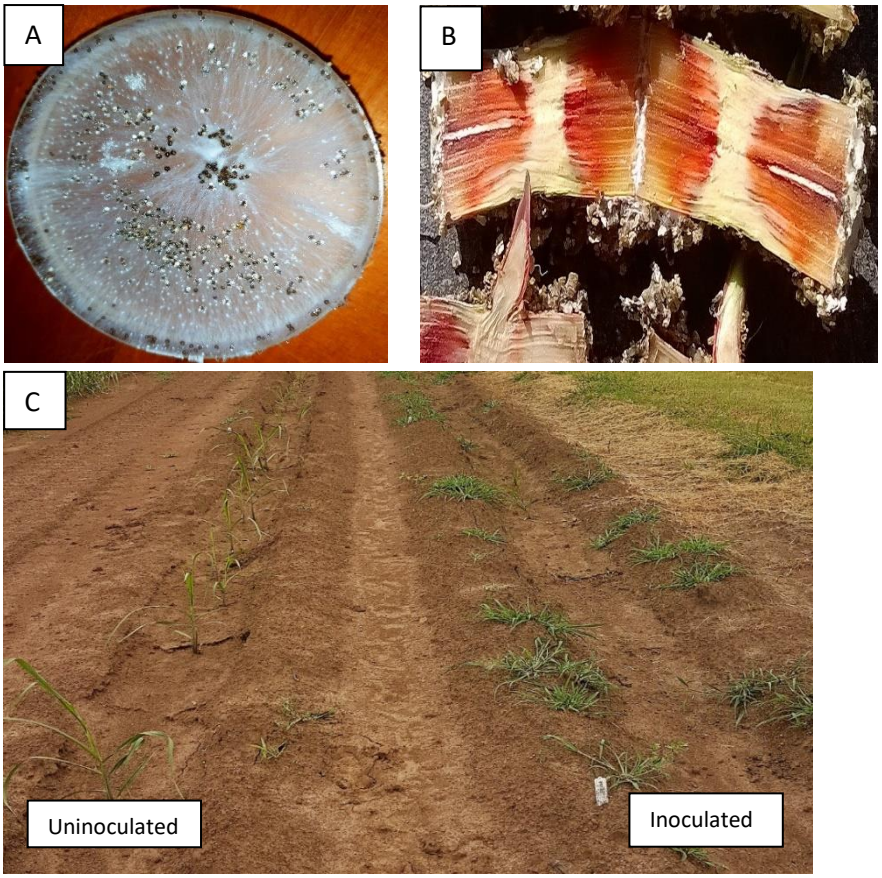

Figure 1. *Sclerotium rolfsii* – morphology, symptom and damage: (A) white fungal mycelia and sclerotia on PDA medium; (B) Reddish lesion in the internal tissue and white mycelia in pithy tissue and cut end; (C) Germination failure, uninoculated (left) and inoculated (right) plots.

Substantial sett-germination failures (>70%) were observed in the field when inoculated sugarcane setts were planted (Figure 1C). Reddish patchy lesions were observed on the external surface of the setts, pale red to red discolouration in the internal tissue associated with white mycelial growth in the pithy tissues and on the cut ends (Figure 1B). Symptoms on seedlings included water-soaked to light-brown lesions on the base of the seedling, production of sclerotia and white mycelium in and around the lesions, and seedling death.

This is first report demonstrating that *S. rolfsii* can cause germination failure and seedling death of sugarcane. No information is available on the magnitude of this disease in Australian sugarcane industry in relation to yield loss, extent, diversity of the pathogen, interaction with other abiotic and abiotic factors, and possible management practices. More work needs to be done to understand the importance of this pathogen in different locations and environments. A comprehensive survey to identify the extent and diversity of the pathogen in Australian sugarcane is needed.

Key words *Sclerotium rolfsii*, *Athelia*, germination failure, fungus

REFERENCE

Wickramasinghe P, Bhuiyan SA (2018) A mysterious fungus affects sugarcane sett germination and growth - a preliminary investigation. *Proceedings of the Australian Society of Sugar Cane Technologists* 40: 315.