

## **Powdery mildew species infecting mungbean in Australian paddocks**

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Powdery mildew affects mungbean (*Vigna radiata*) in all areas of production across Australia. Field trials in Queensland have demonstrated that early disease infection can reduce yields by up to 40% in conducive seasons. Despite spending significant time and resources attempting to breed cultivars with improved resistance, the Australian National Mungbean Improvement Program has only released cultivars that are rated as moderately susceptible to the powdery mildew pathogen(s). Consequently, disease management relies solely on multiple fungicide applications. In Australia, mungbean powdery mildew is thought to be caused by *Podosphaera xanthii*. This species used to be known as *Sphaerotheca fuliginea* or *S. fusca* in the earlier literature. Research outside of Australia, however, refers to the pathogen of mungbean as *Erysiphe polygoni*. This project was designed to validate the identification and taxonomy of the species causing powdery mildew in Australia, and improve our understanding of the pathogens host range, virulence and potential resistance to DMI fungicides. Results thus far have indicated that *P. xanthii* and a second species, preliminary identified as *Erysiphe* sp., are responsible for causing powdery mildew of mungbean in Australia. Future research will focus on accurately identifying the *Erysiphe* sp., and determining the host range, virulence, fungicide resistance and yield losses caused by both pathogens. The outcomes of this project will significantly improve our understanding of the pathogens infecting mungbean, their life cycles, and provide the necessary foundations for the development of integrated disease management strategies.