

2023 PhD research opportunities

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The successful candidates will receive:

- A \$35,000 p.a (tax-free) scholarship for up to three and a half years
- Training in Australia's first integrated agricultural systems biology research centre, AgriBio
- Professional development programs
- International travel opportunities

The research projects are based at AgriBio, the Centre for AgriBiosciences, Melbourne Australia

Successful applicants must meet the Australian University entry requirements for a Doctor of Philosophy degree.

For enquiries and to apply, please forward a covering letter, your curriculum vitae (please include evidence of research writing) and academic transcripts to:

Kendra Whiteman
Higher Education Manager
Agriculture Victoria Research
kendra.whiteman@agriculture.vic.gov.au

Closing date for applications: until filled

Current projects:

To study viruses associated with *Agaricus* mushrooms in Australia.

Virus-like diseases, such as brown cap and patch disease, are observed in Australian mushroom production. These diseases are like those described as part of the disease complex known as Mushroom Virus X (MVX) that occurs in Europe. However, only some of the MVX associated viruses, including *Agaricus bisporus* virus 6 and mushroom bacilliform virus were detected in Australian mushrooms using routine detection methods (polymerase chain reaction (PCR) and reverse transcription (RT)-PCR) and the cause of disease remains unclear. The proposed PhD project aims to conduct research activities that will delve deeper into the host/virus interactions to improve our understanding of their impact on quality and yield.

Specific objectives include:

- I. Surveys to characterise and determine the prevalence of mushroom viruses associated with disease on farm and in diseased or asymptomatic wild *Agaricus* species
- II. Testing of historical and naturalised/wild mushrooms from herbaria across Australia, with the aim of developing a timeline of when introduction of viruses may have occurred and the presence of novel viruses that may threaten production
- III. Development of a grading system to determine the health of mushrooms and whether symptoms can indicate what viruses/pathogens may be present
- IV. Development of in-field and laboratory-based diagnostics targeting viruses associated with diseases in Australian mushrooms and exotic viruses associated with disease overseas.

The project's primary outcome is that the Australian mushroom industry and growers have a better understanding of the occurrence of mushroom viruses in Australia the diagnostics capability available to improve detection. By addressing the diversity and prevalence of viruses associated with disease in Australian mushrooms, growers will have a greater understanding of the threat of introduction into their farms from within Australia or overseas.