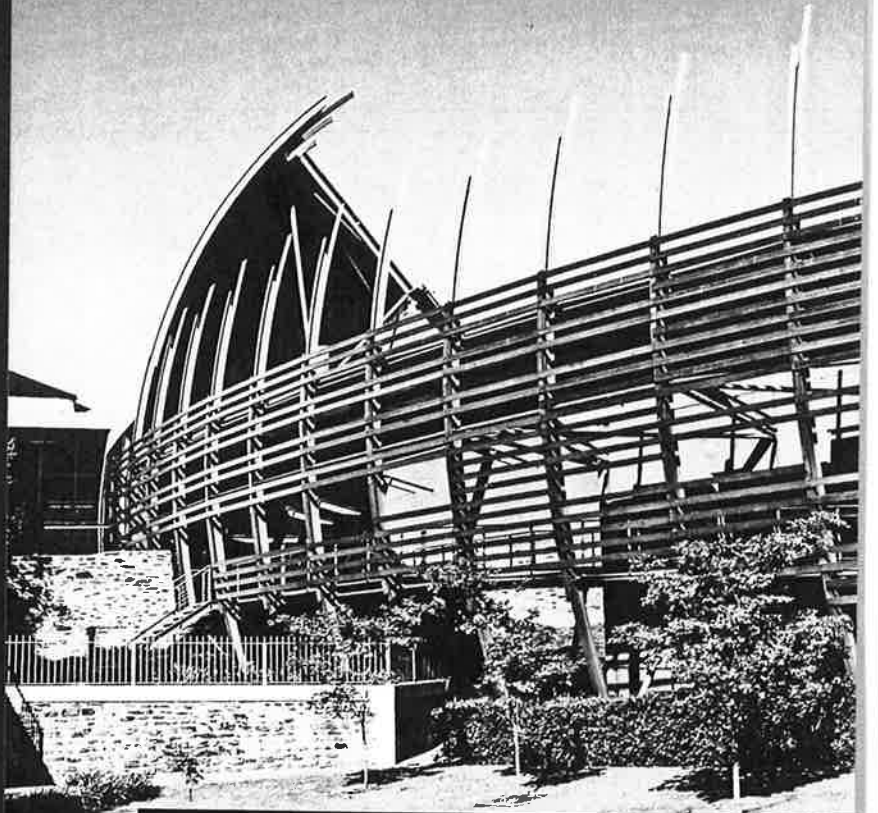


9IWGTD

National Wine Centre of Australia
18 - 20 November 2014

9th International Workshop on Grapevine Trunk Diseases



PROGRAM & ABSTRACTS



TUESDAY 18th

SESSION 4 Host-Pathogen Interactions

Chairpersons: Eileen Scott & Florence Fontaine

- 16.00 4.1 Susceptibility of the Vitaceae family to Botryosphaeriaceae: a focus on *Vitis sylvestris*
X. GUAN, S. ESSAKI, H. LALOUE, P. NICK, C. BERTSCH and J. CHONG
- 16.15 4.2 Effect of growth stage on sensitivity of grapevine (*Vitis vinifera* L. cv Mourvèdre) to infection by the Botryosphaeria dieback agents *Neofusicoccum parvum* and *Diplodia seriata*
A. SPAGNOLO, P. LARIGNON, M. MAGNIN-ROBERT, A. HOVASSE, C. CILINDRE, A. VAN DORSSELAER, C. CLEMENT, C. SCHAEFFER-REISS and F. FONTAINE
- 16.30 4.3 Plant-based markers of infection for *Neofusicoccum parvum*
K. BAUMGARTNER, S. CZEMMEL, G.R. CRAMER, E.R. GALARNEAU, R. TRAVADON, D.P. LAWRENCE, A.J. MCELDRONE and D.A. CANTU
- 16.45 4.4 Variable levels of laccase are secreted by four species of *Ilyonectria* that infect grapevines.
B. PATHROSE, M.O. OUTRAM, E.E. JONES, M.V. JASPERS and H.J. RIDGWAY

17.00-19.00 **Wine Tasting**
(Sponsored by Yalumba)

TUESDAY 18th

4.4

Variable levels of laccase are secreted by four species of *Ilyonectria* that infect grapevines.

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Laccases are a family of enzymes (polyphenol oxidases; PPO-1 and PPO-2) implicated in pathogenesis and degradation of lignin by many phytopathogens, including those that infect grapevines. The aim of this study was to (i) confirm that *Ilyonectria* species pathogenic to grapevines secrete laccase, (ii) to determine whether isolates vary in laccase secretion and (iii) to determine whether the amino acid sequence of laccase (*lcc1*) differs between species. Laccase activity was measured using ABTS (2, 2¹-azino-bis [3-ethyl-benzthiazoline-6-sulfonic acid]) and DMP (2,6-dimethoxy-phenol). Six isolates of *I. liriodendri* and five isolates of the *I. macrodidyma* complex, including, *I. macrodidyma* (n=3), *I. torrensensis* and *I. novozelandica* were inoculated as agar plugs into minimal liquid media and incubated at 20°C for 7 days. The mycelium free extracellular fluid was assayed for PPO-1 and PPO-2 activity by their oxidation of ABTS and DMP, respectively. The results showed that all isolates produced PPO-1 activity but only seven produced detectable PPO-2 activity. There was isolate variation in both PPO-1 and PPO-2 activity for all species for which >1 isolate was tested ($P < 0.000$). Degenerate PCR was used to amplify the *lcc1* gene from *I. macrodidyma*, *I. novozelandica*, *I. torrensensis* and *I. liriodendri*. Six amino acid polymorphisms were identified within isolates of *I. liriodendri* and the *I. macrodidyma* complex. Amino acid polymorphism was not found between isolates of the same species. Thus, variable laccase activity is likely to result from variable amount of enzyme secretion rather than isolate differences in enzyme activity.