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## Complex pellets of white-rot fungi for biotechnological applications

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Complex pellets (C.P.) of white-rot fungi *Anthracoxyllum discolor* and *Trametes versicolor* were formulated with mycelium, activated carbon and sawdust (2:1:1) in Kirk medium for 15 days. The ligninolytic enzyme potential of C.P. was evaluated in solid medium (PDA/Poly R-478 and PDA/ABTS). Reactive orange 16 (RO16) and Basic violet 4 (BV4), were used as model molecules for decolourisation and ligninolytic activity, in modified Kirk medium with an 100 mgL<sup>-1</sup> of dye, 100 rpm, 25 °C for 15 days.

In solid medium complex A. *discolor* pellets have only showed peroxidase activity. In contrast, complex T. *versicolor* pellets have showed peroxidase and laccase activities. Decolourisation of RO16 by complex T. *versicolor* and A. *discolor* pellets was 97 and 100%, respectively. Furthermore, BV4 decolourisation by T. *versicolor* and A. *discolor* pellets was 77 and 76%, respectively. Complex T. *versicolor* pellets presented high manganese peroxidase and laccase activities with 163.2 and 84 UL<sup>-1</sup> respectively. Complex A. *discolor* pellet presented high manganese-independent peroxidase with 78.92 UL<sup>-1</sup> and less lignin peroxidase activity (5.7 UL<sup>-1</sup>). In conclusion, the application of C.P. of white-rot fungal isolates from southern of Chile has potential for biotechnological applications such as the decolourisation of synthetic dyes in industrial effluent or in bioremediation processes.

Keywords: Complex pellets, ligninolytic enzymes, white-rot fungi, synthetic dyes