

Isolation and characterization of polyvinyl alcohol (PVA) degrading fungal strains from soil**Somayeh Mollasalehi**

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During the last thirty years, extensive research has been conducted to develop biodegradable plastics as more environmentally benign alternatives to traditional plastic polymers. Polyvinyl alcohol (PVA) is a water-soluble polymer which has recently attracted interest for the manufacture of biodegradable plastic materials. PVA is widely used as a paper coating, in adhesives and films, as a finishing agent in the textile industries and in forming oxygen impermeable films. Consequently, waste-water can contain a considerable amount of PVA and can contaminate the wider environment where the rate of biodegradation is slow. Despite its growing use, relatively little is known about its degradation and in particular the role of fungi in this process. In this study, we used culture enrichment to isolate fungal degraders from eight uncontaminated soil samples which were shown to have very different fungal populations and dominant species revealed by denaturing gradient gel electrophoresis (DGGE). While all soils contained fungal degraders, the number of recovered species were restricted with the most common being *Galactomyces geotrichum* and *Trichosporon laibachii*. One thermophilic strain, *Talaromyces emersonii* was recovered at 50°C. For *G. geotrichum*, a molecular weight range of 13-23 KDa, 30-50 KDa or 85-124 KDa had no significant effect on the growth rate (mean doubling time 6.3 to 6.9 h⁻¹), although there was an increased lag phase for the higher molecular weight PVA.

Biography

Somayeh Mollasalehi has completed her PhD at the University of Manchester and is working as a Researcher at the University of Manchester.

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