

## ANTIFUNGAL ACTIVITY OF TEA TREE ESSENTIAL OIL AGAINST PLANT PATHOGENS

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*Melaleuca alternifolia*, *Fusarium* spp., *Pyrenophora graminea*, *Blumeria graminis*, essential oil

*Melaleuca alternifolia* (tea tree) essential oil (TTO) has a long history of use as topical antiseptic in human pharmacology, revalued in recent years looking for novel antimicrobial agents. The mechanism of action of the oil, studied both in bacteria and in *Candida*, involves the loss of membrane integrity and function, with consequent release of intracellular material, inhibition of respiration, inability to maintain homeostasis and changes in cell morphology. Most components of TTO have activity against a range of human pathogenic fungi, even if Terpinen-4-ol seem to be the most active agent. This monoterpene, present in some other plants like *Origanum majorana*, has contact and fumigant insecticidal action against several economically important pests. Against this background, studies were undertaken to examine the effects of TTO and of some of its components on four cereal-pathogenic fungi- *Fusarium graminearum*, *Fusarium culmorum*, *Pyrenophora graminea*, *Blumeria graminis* - characterised by very different life cycles, transmission modes and effects on plants and derived products.