

Title Potential use of lemon myrtle essential oil to control brown rot in nectarines

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Abstract

The antifungal proprieties of essential oils against postharvest pathogens have been investigated extensively in recent years. Many essential oils and their active ingredients exhibit an antifungal activity against postharvest pathogens *in vitro* and, to a lesser extent, under *in vivo* conditions. Among the Australian essential oils tested against postharvest fungal pathogens, lemon myrtle has been particularly active. This research investigated the effect of lemon myrtle essential oil on the development of *Monilinia fructicola*, the casual agent of brown rot of nectarines. Fruit which was not inoculated had a significantly low ($P < 0.05$) incidence of brown rot following fumigation compared with the control treatment. Where fruit were fumigated prior to inoculation disease incidence was moderate but also significantly lower ($P < 0.05$) than the inoculated control. Fumigation following inoculation did not significantly reduce the incidence of brown rot in comparison with the inoculated control treatment. These results provide an indication that essential oil fumigation is more protectant—rather than curative—in nature. There was no evidence of phytotoxicity on the fruit. Further large scale studies will focus on the volatility of essential oils, exposure time, formulation, consumer tests and efficacy compared with synthetic fungicides in order to further evaluate commercial use.