

Title Involvement of antifungal compounds from rockmelon fruit rind (*Cucumis melo* L.) in resistance against the fruit rot pathogen *Fusarium oxysporum* f. sp. *melonis*.

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Abstract

Fusarium rot caused by *Fusarium oxysporum* f. sp. *melonis*, causes significant postharvest losses in rockmelon crops. Although latent infection is often present in the field, symptoms of the disease may not appear until fruit maturity. The susceptibility of different-aged rockmelon fruit cv. "Colorado" was determined by inoculating fruit at different stages of development with a spore suspension of *F. oxysporum* f. sp. *melonis*. Disease symptoms appeared first and were more severe in older fruit compared to younger fruit. Disease symptoms on fruit 35 DAA (Days After Anthesis) and 42 DAA appeared within 3 days of inoculation and rapidly covered the fruit within 5 days. In contrast, disease symptoms on fruit 7 DAA appeared 6 days after inoculation and grew slowly. Extraction of antifungal compounds without involving acid hydrolysis from 7 DAA fruit rind did not show antifungal activity on TLC plates. However, hydrolysis of the ethyl acetate fraction resulted in a strong fungal inhibitory zone on agar plates against colonies of *F. oxysporum* f. sp. *melonis*. Separation of the hydrolysed crude extracts on TLC plates indicated the presence of two distinct antifungal zones with R_f 0.36 and 0.13 in young fruit 7, 14 and 21 DAA. The area of fungal inhibition of compound R_f 0.36 was greater than that of R_f 0.13 on the TLC plate. Extracts from mature fruit of 35 and 42 DAA did not have detectable levels of antifungal compounds. The decrease in the susceptibility of rockmelon fruit during maturity may be correlated to a decrease in the antifungal compounds in the fruit with maturity.

<http://www.springerlink.com/content/f537111035j31717/fulltext.pdf>