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PREVENTION OF PATULIN ACCUMULATION IN GRAPE JUICE BY THE INTERACTION BETWEEN PENICILLIUM EXPANSUM AND BOTRYTIS CINERFA

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Interactions between fungi occur frequently in many commodities while they compete for the same host. This is the case of Botrytis cinerea and Penicillium expansum on grapes, being both species producers of earthy odours and P. expansum a possible producer of the mycotoxin patulin. In this study, the influence of the interaction between both these fungi on their growth parameters and on patulin accumulation in the medium was studied. For that purpose, spores of B. cinerea and P. expansum were inoculated as pure cultures and as mixed cultures, and the corresponding growth rate, time for growth and patulin accumulation were assessed. It was found that the presence of P. expansum conidia shortened the time for growth of mixed inoculum colonies which, at the end of incubation, were B. cinerea-like. Although some P. expansum growth was observed in the mixed inoculum colonies, very low levels of patulin were observed. In assays carried out in patulin-spiked medium, B. cinerea was found to be capable of metabolizing patulin. The capabilities of B. cinerea to shorten time for growth and to prevent patulin accumulation are competing abilities that facilitate grape colonization.

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