

Title Impact of relative humidity and temperature on visible fungal growth and OTA production of ochratoxigenic *Aspergillus ochraceus* isolates on grapes

Author E. Pardo, S. Marín, V. Sanchis and A.J. Ramos

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Abstract

Aspergillus ochraceus is an ochratoxin A (OTA) producer mould found in grapes and this may contribute to OTA contamination in wines and grape juices. The influence of relative humidity (R.H.; 80, 90 and 100%) and temperature (10, 20 and 30 °C) on visible mould growth on grapes and OTA accumulation after 14 days of incubation by this fungal species has been studied using a full factorial design with three replicates.

The two abiotic factors and their interaction (R.H.×temperature) affected significantly the *A. ochraceus* growth in berries, which was maximum at 90–100% R.H. levels. With regard to the optimum temperature level, it occurred at 30 °C at 80 and 90% R.H., whereas no significant differences were detected at 20 and 30 °C when R.H. was 100%.

OTA production by *A. ochraceus* on grapes was not significantly modified by the assayed levels of temperature and R.H, with a mean value of 3.53 ng g⁻¹.

Predictive models of percentage of grapes with visible growth of *A. ochraceus* isolates under different relative humidity and temperature are presented.