Effect of temperature and water activity on growth and aflatoxin production by *Aspergillus flavus* and *Aspergillus parasiticus* on cured meat model systems

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Abstract

Dry-cured hams may be colonised by aflatoxin-producing *Aspergillus flavus* and *Aspergillus parasiticus* during the ripening process. The objective of this study was to evaluate the interaction between non-ionic water stress and temperatures may have on lag phases prior to growth, growth rates and aflatoxin production by two strains of each *A. parasiticus* and *A. flavus* on meat matrices over a period of 12 days. Results showed that *A. flavus* CBS 573.65 had shorter lag phases than *A. parasiticus* CECT 2688, however the growth rates were quite similar. For both species, no growth occurred at 10 °C and all aw tested and optimum growth happened at 25 °C and 0.95 a_w. Similar aflatoxin B1 production profiles between both species were found, however *A. flavus* produced much higher concentration of such toxin than *A. parasiticus*. Both species produced aflatoxins when the temperature and the a_w were ≥ 15 °C and ≥ 0.90.