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Effect of the combined inoculation of the antifungal protein PgAFP and *Debaryomyces hansenii* on the reduction of aflatoxin production on cheese

Josue Delgado, Miguel A. Asensio and Felix Nunez
University Complutense of Madrid, Spain

Mycotoxins are secondary metabolites that can be produced by molds when growing on intermediate moisture foods, such as cheese. Aflatoxins are among the most concern mycotoxins in this kind of food, due to its carcinogenic, teratogenic and mutagenic effects. Thus, it is necessary to design strategies to reduce mold growth and aflatoxin production. The protein PgAFP, produced by *Penicillium chrysogenum* and some strains of *Debaryomyces hansenii* are able to partially reduce fungal growth and mycotoxin production. Thus, the aim of this work was to evaluate the combined antifungal activity of PgAFP and *D. hansenii* against an aflatoxigenic strain of *Aspergillus parasiticus*. The inhibition assay was carried out on cheese simulating the ripening environmental conditions for 15 days at 25°C. The combined inoculation of PgAFP and *D. hansenii* provoked a growth inhibition of 102 ufc/cm^2, from 3,40E+05 ufc/cm^2 in the control batches to 2,33E+03ufc/cm^2 in the combined inoculation. In addition, in the control batches were detected 30 ppb of aflatoxins whereas are duction under 1 ppb of aflatoxin concentration was achieved with the joint inoculation. The joint inoculation can be proposed to control unwanted molds on dry-cured cheese.

Biography

Josué Delgado has completed two masters regarding to Meat science and technology and Research. He is finishing his PhD, regarding to antifungal proteins and microorganisms as strategies to limit mold development and mycotoxin production. He has work in proteomic analysis of mold. He has published 3 works in reputed journals.

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