

Effect of *Penicillium nalgiovense* as protective culture in processing of dry-fermented sausage “salchichón”

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Abstract

In this work the implantation of a protective culture of *Penicillium nalgiovense* on commercial dryfermented sausages “salchichón” and its effect over presence of mycotoxin-producing moulds belonging to contamination origin was evaluated. In addition, the suitability of real-time quantitative PCR (qPCR) as a rapid and sensitive method to test implantation of protective culture throughout the “salchichón” processing was also tested. Dry-fermented sausages “salchichón” inoculated with a nontoxic protective *P. nalgiovense* and subjected to three different commercial ripening processes were analysed. At first, ability of *P. nalgiovense* strain to avoid growth of an ocratoxin A (OTA)-producing strain and its mycotoxin production in a controlled model system was demonstrated. *P. nalgiovense* was quantified by a qPCR designed on the basis of the ITS region and values higher than 10^6 ufc/cm² in both inoculated and non-inoculated “salchichón” were obtained. This technique should be considered a good tool to verify the implantation of protective culture of *P. nalgiovense*. Producing moulds of aflatoxins, OTA, patulin, sterigmatocystin and verrucosidin and the corresponding mycotoxins were not detected in any dry-fermented sausages tested, including those non-inoculated ones. Thus, presence of *P. nalgiovense* is inhibiting growth of toxigenic moulds. Utilization of a non-toxicogenic fungal protective culture in dry-fermented sausage “salchichón” processing should be considered as a good tool in the preventive programmes to avoid growth of toxigenic moulds.