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Polyphasic evaluation of long term preservation on Aspergillus strains

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chratoxin A and fumonisin B2 are mycotoxins that represent serious concerns for food safety. Fungal strains used in biotechnological process should previously be analysed while their potential to produce such kind of secondary metabolites. Moreover, the long-term preservation of fungal strains can be a factor of stress for the production of mycotoxins by fungi. The objective of this study was to evaluate the effect of freeze-drying and long-term storage on the biotechnological potential of Aspergillus strains by a polyphasic approach. 21 selected strains of Aspergillus section nigri were preserved by freeze-drying and aged by accelerated storage at 37°C in the dark for two different periods: two weeks and 4 four weeks. In this work morphological characteristics, mycotoxins and enzymes production, MALDI-TOF MS spectra and ERIC/PCR were used as part of the polyphasic approach to evaluate the biotechnological characteristics of these strains before and after freeze-drying preservation and accelerated storage. Phenotypical changes were observed in aged freeze-dryed strains, nevertheless these changes were suitable for the biotechnological use of these strains, since production of ochratoxin A and fumonisin B2 was maintained or decreased after freeze-drying preservation and the activity of polysaccharide-hydrolytic enzymes (CMCase, xylanase, pectinase and mannanase) was also maintained or increased after freeze-drying preservation. MALDI-TOF MS spectra showed a higher number of peaks (which makes fungal identification more accurate) for 53% and 61% of the strains aged for two weeks and four weeks respectively. These findings provide evidence that freezedrying preservation is a suitable option to preserve biotechnologically relevant Aspergillus strains.

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Incidence of *Listeria* spp. and indicator microorganisms of sanitation in trout processing plants

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C eafood plant sanitation is needed for ensuring safety and quality of the products manufactured. Many microorganisms are used Jas sanitation indicators in food processing plants: Total or aerobic plate counts (APC), total (TCC) and/or fecal coliforms, and Eschericia coli are the most common ones. Some other indicator microorganisms reported for trout (Ictalurus punctatus) processing plants are Pseudomonas and Aeromonas. Listeria (LIS) and Listeria monocytogenes are microorganisms with high prevalence in seafood, including trout products and processing environment. These species could be used as indicators of plant sanitation. The incidence of Listeria in live trout is very low, thus the presence of this organism in food processing plants may indicate inadequate sanitation practices. The objectives of this project were to investigate the incidence of Listeria spp. and Listeria monocytogenes in trout fish processing plants environment and products so as to identify possible points for sanitation. Samples of trout pond water, sediment, and live fish, as well as products, food contact, and non-contact surfaces in processing plants were sampled and tested for indicator organisms and Listeria. Results show that selected sites are high in APC, TCC, and LIS during pre-op.

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