

# FUNGI IN BOTTLED WATER: A CASE STUDY OF A PRODUCTION PLANT

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A one year fungal survey of a water bottling plant was conducted in order to evaluate the incidence and fluctuations of the biota. The dominant fungal genera in order of highest numbers were *Penicillium*, *Cladosporium* and *Trichoderma* followed by *Aspergillus*, *Paecilomyces*, and others. As expected, highest number of isolates collected were during the summer months, particularly May and June. Indeed during these two months there were more fungi present in the water after it had passed through the filtration system (0.4µm filter), indicating that during those times of the year when fungal contamination is high, filters should be changed on a more regular basis. In order to assess whether contamination was single or multi-loci, molecular methods based on PCR were used. Overall fungal contamination arose from multiple sources. Some fungal strains were very "alike" and were detected during different sampling times, indicating that some strains were endemic to the plant. There was little evidence to suggest that fungi detected in the source water passed through to other parts of the plant. However, there was evidence that fungal strains isolated from the water filter were detected elsewhere in the factory, confirming the need to change filters more regularly during periods of high fungal contamination. In order to improve quality control a HACCP programme was implemented and Best Practice Guidelines introduced.

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