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FUNGI FROM A BOTTLED WATER PRODUCTION SYSTEM.

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Fungi may cause “off” tastes and odours in bottled water and there are potential health problems from mycotoxins. Additionally, fungal spoilage is manifested as visible clumps of growth in the bottles which is unacceptable to consumers. Direct and indirect financial losses for bottlers arise; the former due to product recall and downtime caused by the need for special sanitation, and the latter is the result of bad publicity created by such incidents. An EU project is ongoing in Micoteca da Universidade do Minho in order to control the mycological contamination of bottled water. Only limited data exists on which species may be present, and which can be considered as particularly problematic despite the problems mentioned above. Fungi were isolated and identified. From samples collected in a bottled water plant from seven water sample points. Four were water sources, one was the storage-tank outlet, another the filter outlet and, the finally the end product. Rinse samples of: (a) glass bottles at the washer inlet and outlet, (b) of caps were also analysed. The methods to concentrate fungal biomass in the samples were filtering, baiting and swabbing. Detection of fungal growth was based on plating on the selective media NGRBA, CMA ½ strength, YMG and DRBC. All colonies formed were counted. The fungal ones were transferred and isolated on MEA. Fungal counts from the water source often reached more than 20/L fungal colonies. However, the number of fungi decreases throughout the bottled water production system. These results demonstrate of that filtration offered an effective barrier to prevent the presence of fungi in bottled water. Moreover, it was observed that glass bottles and caps are an external source of fungal contamination.

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