

HYGIENIC CONTROL IN BEER BOTTLING AND DISPENSING SYSTEM

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Abstract

Beer is considered resistant to microbial contamination due to the presence of inhibitors such as: hop compounds, alcohol, carbon dioxide, acidity, pH. Moreover, processes such as filtration, storage conditions and pasteurization reduce the risk of contamination. Bottling is one of the most complex aspects of brewery operations, and the most labor intensive of the entire production process. This study is focused on hygienic control in bottling and dispensing of beer system because it ensures a very good quality of the final product. It is important to detect as soon as possible dangerous microorganisms that affect the quality, and optimization of cleaning procedures.

To achieve our goal we used rapid tests and microbiological cultivation methods with some standard and selective media, suitable for the examination and detection of the presence of harmful microorganisms. Also are carried out physico-chemical analyses for bottled beer in returnable and non-returnable bottles, and keg beer. A total control of hygienic conditions, from the equipment used in bottling line till to dispensing systems has been done.

Beer spoilage microorganisms such as lactic and acetic bacteria, enterobacteria and yeasts were shown to be present on the surface materials of the bottling and dispensing line. The most resistant beers were strong beers and beers with pH below 4.2. Most prone to spoilage were beers with low acidity, and alcohol; beers with high fermentable rest extract and beers with low carbon dioxide concentrations. By hygienic control performed in some dispensing equipment in different periods it was noted the presence of biofilms in pipes and lines.

The results of this study reveal that hygienic control in brewery is very important and should be applied in all chain of bottling and dispensing system, in order to have a safe and secure product for the customers.

Key words: *Hygienic control, Beer bottling, Dispensing system, Microorganisms, Biofilm.*