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## Peracetic acid fogging and Personal traffic effects on microbial air quality and comparison between number of air total fungi and bacteria in food processing area

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**Objective** – Microbial contaminants, if entering into the product, will most likely affect the product adversely, the contamination can influence the shelf-life and food safety. The airborne dust particles can introduce foreign matter including microbial contaminants into the products. This study constitutes a descriptive analysis of the hygiene/sanitation conditions implemented in a food industry. We were evaluated the effects of peracetic acid fogging and also personnel traffic in production section air quality. The results should help risk managers to better define control measures to be adopted in order to prevent foodborne infections.

**Material and methods** - Peracetic acid diluted with Reverse Osmosis water to obtain 150 ppm solution and fogging, sampling performed in three steps, before fogging and after fogging included at-rest (static) and in-operation (dynamic) status using of passive air technique on tryptic soy agar and dicoloran glycerol agar cultures. After incubation the Total Viable and fungi counts were evaluated.

**Results**- In all statuses the number of bacteria were 95.8 CFU higher than fungi, both were significant after fogging (Anova,  $P < 0.05$ ) although they decreased during rest and increased during production comparing before fogging. Bacteria and fungi CFUs decreased about 71.8% and 54.8% respectively after fogging. personnel increased microbial air contamination comparing to other times and CFU increased about 80.6% comparing to the “at-rest” time and 46.1% comparing to the “at before fogging” time for all microorganism.

**Conclusion**- the results showed bacteria are amount 17% more sensitive than fungi to PPA fogging. Our results showed one worker spread about 0.26 microorganisms per min. air microbial quality in the condition without cleaning, disinfection and with no personnel presence was better than the personnel presence time after the cleaning, disinfection and fogging, in other words personnel presence can affect on air quality as much as other mentioned methods.

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