

## Bacteria and fungi involved in the development of diarrheic and respiratory diseases in workers handling bovine hides during the tanning process

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The tanning process has preservation of the hide of the animal. The industrialization of animal skins corresponds in its great majority to the skin of bovines. Indoor the tanneries the presence of 11 contamination indicator species in the tanning work environment with pathogenic potential are the following: *Bacterium pumilus*; *Bacterium subtilis*; *Bacterium cereus*; *Cladosporium lubricantis*, *Cladosporium cladosporioides*; *Penicillium commune*; *Penicillium echinulatum*; *Penicillium chrysogenum*; *Penicillium crustosum*; *Candida parapsilosis*, and *Candida albida*. The microorganisms could compromise the state of health of tanning workers due to their incidence, propagation and concentration. This work showed that samples of nasal and oropharyngeal mucosa taken from the tanners (the sentinel group) demonstrated a high burden of bacteria and yeasts, with values up to  $76 \times 10^7$  CFU/ml for bacteria and  $80 \times 10^7$  CFU/ml for yeasts, observing bacterial and fungal growth in all of the participants. The nasal-mucosa results of the second group of tanners and of the control group, in which the sample was taken at the clinical laboratory, confirmed the presence of bacteria and fungi previously observed in the first tanners group; however, the concentration was less with respect to the sentinel group of tanners, with values of  $1.5 \times 10^3$  CFU/ml and  $1.9 \times 10^3$  CFU/ml for bacteria and yeasts, respectively. In that prior work, the identification was carried out of bacteria, fungi, and yeasts. The bacterial families identified were Bacillaceae, Corynebacteriaceae, Enterobacteriaceae, Moraxellaceae, Nocardioptaceae, Pseudomonadaceae, and Staphylococcaceae. The genera of fungi identified were mainly *Aspergillus* and *Penicillium*, which are considered the most significant allergenic fungi in air, and these have been associated with adverse effects on human and animal health. The yeasts identified were *Candida krusei* and *Candida glabrata*, which have been associated with adverse effects on the health of immunosuppressed individuals.

### Biography

María Maldonado Vega is a graduate of PhD in Science with specialization in Toxicology. She has received her PhD and Master of Science in Research and Advanced Studies Center-Polytechnical National Institute (CINVESTAV-IPN) México, D.F. She received several awards for her research such as Prize 2006-2007 ADIAT, Technology transfer mode to companies PyME and Technical merit recognition. She has developed different projects in research and technology, which have resulted in forum disclosure of more papers, technical report and technology transfer. Currently, she has 18 papers refereed journals and 20 international papers. She is serving as an Editorial Board Member of several reputed journal like *Journal of Nuclear medicine & Radiation Therapy*, *Journal International Pollution*, and *Medical Journals and Magazine of Biochemistry Education*. She is a member of Mexican Society of Biochemistry and Member Research Ethics Committee.

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