MICROBIOLOGICAL ANALYSES AND INFLAMMATORY EFFECTS OF SETTLED DUSTS FROM RICE AND HAY

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Fourteen samples of settled dust from two factories processing rice and wheat straw near Shanghai, China, were examined by dilution plating for total bacteria, gram-negative bacteria, thermophilic actinomycetes and fungi. They were also examined for aflatoxin, endotoxin and potential to stimulate production of human interleukin lB (IL-lB) and to consume complement. The concentrations of total microorganisms were consistently greater than 107 CFU/g and ranged from 107 to 109 CFU/g. In general, the level of microbial contamination was greater in the hay dust samples than in the rice dust samples, with bacteria being the most numerous microorganisms observed followed by molds, thermophilic actinomycetes and yeasts. The predominant fungi were species of *Asversillus, Cladosporium, Penicillium, Trichosporon,* and *Cryptococcus.* No significant levels of aflatoxin were observed and the isolate of *A. flavum* examined lack significant aflatoxigenic potential. The levels of microorganisms in these samples, the types of organisms found, and the inflammatory mediators such as endotoxin suggest that workers exposed to these dusts may be at risk for respiratory illness.

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