

BIOAEROSOLS FROM PULP MILL EFFLUENT TREATMENT SLUDGES

FOREST INDUSTRY HEALTH RESEARCH PROGRAM

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The *Forest Industry Health Research Program (FIHRP)* has completed a study on airborne bacteria and fungi in areas where sludges from secondary effluent treatment systems are dewatered and transported. The report, which is now available to members is titled "**Bioaerosols from Pulp Mill Effluent Treatment Sludges**". To request a copy, phone **Agi Lee** at the Pulp and Paper Forum at (604) 777-1533, send a fax to (604) 777-1567 or E-mail at alee@paperforum.com. Non-members of the Forum may be charged for the reports.

Three B.C. pulp and paper mills participated in the study from August to October, 1998. Sampling sites included sludge presses, conveyor galleries, conveyor transfer points, a landfill, and a truck-loading operation.

Samples were collected on agar plates for counting and identification of bacteria and fungi, and on filters for analysis of endotoxin. Endotoxin is a compound on the cell wall of Gram-negative bacteria that is linked to airways inflammation and fever-like symptoms.

Colony counts for total and Gram-negative bacteria were generally low compared to guidelines proposed by the American Conference of Governmental Industrial Hygienists (ACGIH). One mill had primarily Gram-negative bacteria, the other two mainly Gram-positive bacteria.

Colony counts for fungi were low for most samples. The predominant species of airborne fungi was *Aspergillus fumigatus*, an opportunistic fungus that can cause lung infections in individuals with weak immune systems. Healthy workers are not at risk of developing lung infections.

Endotoxin levels were elevated at one or more sites at each mill, compared to guidelines and proposed exposure limits. The extent of the risk for allergic respiratory effects is uncertain because widely-accepted exposure limits based on well-documented health effects are not yet established.

Results of the study do not support clear-cut conclusions about health risks for pulp mill workers, but do indicate the need for caution under worst-case exposure conditions, including high dust levels