ACUTE PULMONARY RESPONSE
IN LANDSCAPE WORKERS: JOB REDESIGN

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ABSTRACT

Substantial efforts have been made in the study of occupational induced airway diseases. A strong link has been found between worker exposure to organic dust and resulting acute pulmonary spasms. The supporting studies behind this link are primarily in the industries of cotton, animal and swine farming; however, some studies have been related to landscaping type tasks (i.e. mowing, leaf blowing). The relationship between organic dust and pulmonary response is associated with respiratory irritants that are found in materials such as soil, grain, and compost, especially when these materials have become moist. Some of the culprits that have been identified as causative agents of respiratory spasms are endotoxin, fungal spores, and fungal mycotoxin.

This study focused on the respiratory hazards in the landscaping industry. During the month of March, landscapers worked heavily with wood mulch, which contains many organic materials that potentially harbor the aforementioned irritants. This study measured the exposure levels of endotoxin and fungal spores in the landscaper workers’ breathable space. While also measuring the pulmonary function of participants and evaluating disposable respirators as an intervention. Low levels of endotoxin and fungal spores were found in the breathable space of the participants during the two days of data collection. The users were not completely satisfied with the half face disposable respirator provided, and offered detailed feedback concerning the design and use of the respirator intervention.