



# UPDATE

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## NIOSH WARNS OF AGRICULTURAL HAZARDS

### Organic Dust Toxic Syndrome



*Worker wearing appropriate respiratory protection during exposure to organic dust.*

The National Institute for Occupational Safety and Health (NIOSH) warns agricultural workers that they may be at risk for developing organic dust toxic syndrome (ODTS), a common respiratory illness that may follow exposures to heavy concentrations of organic dust contaminated with microorganisms. Workers are typically exposed to this dust when shoveling or moving organic materials such as oats, wood chips, composted leaves, and silage.

An estimated 30% to 40% of workers exposed to organic dust will develop the disease. Yet, despite its common occurrence, ODTS is not a widely recognized illness. "It is probable that thousands of workers have been affected by a disease

they knew nothing about," said NIOSH Director Dr. Linda Rosenstock. "Moreover, many have been misdiagnosed and received unnecessary or inappropriate treatment. Preventing this illness will be much more likely when workers and physicians are aware of the syndrome, its causes, and its symptoms," she stressed.

The syndrome is characterized by fever occurring 4 to 12 hours after exposure and flu-like symptoms such as general weakness, headache, chills, body aches, and cough. Shortness of breath may also occur. In addition, pulmonary function may be impaired, and an increase in the number of white cells in the blood is common. Listening to the chest usually reveals normal breathing sounds, and chest X-rays are usually normal. Antibodies typically associated with certain allergic lung diseases such as farmer's lung are usually not present.

ODTS usually disappears within 24 hours to a few days after the worker is removed from the exposure. No specific therapy is needed to treat ODTS. However, the syndrome may often be misdiagnosed as acute bronchitis, influenza, or farmer's lung disease, which may lead to unnecessary or excessive therapy with antibiotics or anti-inflammatory medication.

Agricultural workers and employers should minimize the risk of exposure to organic dust by taking the following precautions:

- Be aware of the adverse health effects of breathing organic dust.
- Inform your doctor about recent dust exposures when seeking treatment for respiratory illness.
- Carefully harvest and store agricultural products to minimize spoilage.
- Use automated or mechanized equipment to move decayed materials.
- Use engineering controls such as source containment, local exhaust ventilation, and wet methods of dust suppression to minimize exposure to organic dust.
- Use appropriate respirators approved by NIOSH when exposure to organic dust cannot be avoided.

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U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

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## OTHER SIGNIFICANT HAZARDS

NIOSH recently released reports on confined space hazards and power take-off (PTO) entanglements. While these are not new hazards, they continue to contribute to the injury and death of workers each year.

### Confined Spaces

Confined spaces continue to claim the lives of our nation's workers each year. They pose a serious threat not only in agriculture but in several other industries as well. NIOSH recently released the document *Worker Deaths in Confined Spaces*, which describes circumstances surrounding the deaths of over a hundred workers who lost their lives in confined spaces.

The Institute hopes that recounting these deaths will help to prevent future tragedies. "If proper safety precautions are taken, employers and workers can enter confined spaces with the certainty that they will come out alive," said NIOSH Director Dr. Linda Rosenstock.

Each year, an estimated 2 million workers are required to enter confined spaces to accomplish assigned tasks. In agriculture, confined spaces include manure pits, silos, vats, wells, and digesters. Examples of confined spaces in other industries include storage tanks, compartments of ships, process vessels, sewers, degreasers, boilers, tunnels, underground utility vaults, and pipelines.

Employers and workers who are aware of hazards and take proper safety precautions can work safely in and around these spaces. Potential hazards include oxygen deficiency, flammable atmospheres, toxic gases, solvents, and mechanical, electrical, and hydraulic energy.

Deaths in confined spaces usually result from the failure to recognize and control these hazards and from inadequate or incorrect emergency response procedures. Would-be rescuers of persons overcome in confined spaces often become victims themselves.

Before entering a confined space, employers and workers should determine whether entry is necessary. Standby workers should be trained in rescue procedures including the proper use of rescue equipment such as safety lines and harnesses. The atmosphere should be tested for adequate oxygen level and for the absence of toxic gases or vapors before workers are allowed to enter. Before entry, workers and rescuers should, if necessary, don special protective clothing, such as respirators, chemical protective clothing, boots, and glasses.

For more detailed recommendations, you may request the relevant publications listed in the adjacent box.

### Power Take-Offs

According to a recent NIOSH Alert, *Request for Assistance in Preventing Scalping and Other Severe Injuries from Farm Machinery*, at least 346 farm workers aged 16 or older died from farm-related entanglement injuries between 1980-1989. Of those deaths, 112 were caused by entanglement in PTO-driven shafts and drivelines of farm machinery. Nearly 10,000 nonfatal entanglement injuries also occurred on farms between 1982 and 1986, 864 resulting in amputation. In addition, at least five women have been scalped in PTO incidents.

"It is tragic that men, women, and children, across the nation continue to be maimed and killed when pulled into machinery," said NIOSH Director Dr. Linda Rosenstock, "...particularly when there are well-known preventive measures to preserve their health and their lives."

These injuries, amputations, and deaths are caused by the use of inadequately guarded machinery and the failure to follow proper safety precautions. Ensuring that original or available retrofit guards are placed on farm equipment, disengaging the PTO, and turning off the tractor ignition before performing maintenance will prevent entanglement incidents.

**Workers need to be warned of these hazards and informed of the proper prevention measures. NIOSH urgently requests your assistance in reaching the workers at risk in your community.**

Other NIOSH Publications on these hazards include:

-NIOSH Alert: Request for Assistance in Preventing Organic Dust Toxic Syndrome (94-102)

-Worker Deaths in Confined Spaces (94-103)

-A Guide to Safety in Confined Spaces (87-113)

-NIOSH Alert: Request for Assistance in Preventing Occupational Fatalities in Confined Spaces (86-110)

-NIOSH Alert: Request for Assistance in Preventing Deaths of Farm Workers in Manure Pits (90-103)

-NIOSH Alert: Request for Assistance in Preventing Scalping and Other Severe Injuries from Farm Machinery (94-105)

-NIOSH Update: Farm Safety-Danger of Hair Entanglement in Hay Baler Drive Shafts (93-126)

To request copies of these or other NIOSH publications call: **1-800-35-NIOSH**  
(1-800-356-4674)

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