

What you need to know

- ✓ Exposure to hop (*Humulus lupulus*) dust can cause respiratory disease including asthma.
- ✓ Workers who develop breathing problems during the hop harvest or when working directly with hop products should see their doctor.
- ✓ Hop industry employers can take steps to reduce the risk of respiratory disease.

Background

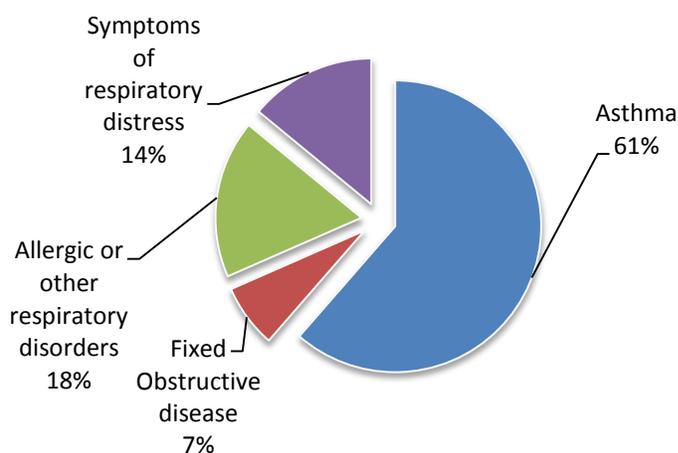
Washington State's Yakima Valley produces the majority of the US annual hop harvest. From 1995 through 2011 a total of 57 hop industry workers experienced work-related respiratory illness. The 57 cases described here are workers' compensation claims filed with Washington State's Department of Labor and Industries industrial insurance system. Most of the cases occurred during the hop harvest, which typically begins in late August and ends in early October. Because not all workers file workers' compensation claims, it is expected that respiratory disease occurs more frequently than what is described here. While hop industry workers also seek medical care for skin rash following contact with hop, the frequency of dermatitis is not discussed here. This document, along with letters to industry employers and healthcare providers, was developed to raise awareness for the association of hop exposure and respiratory disease.

Key Findings

✓ Hop exposure causes asthma

Out of 57 cases for respiratory illness reported from hop exposure, the majority of cases (n=35) were diagnosed* as asthma.

*Diagnosis codes (ICD) given by the healthcare provider at the initial medical visit were used to characterize the type of respiratory illness.

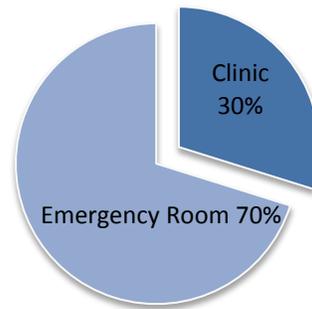


Hop Dust and Respiratory Disease

Key Findings (continued)

✓ *Workers seek emergency care*

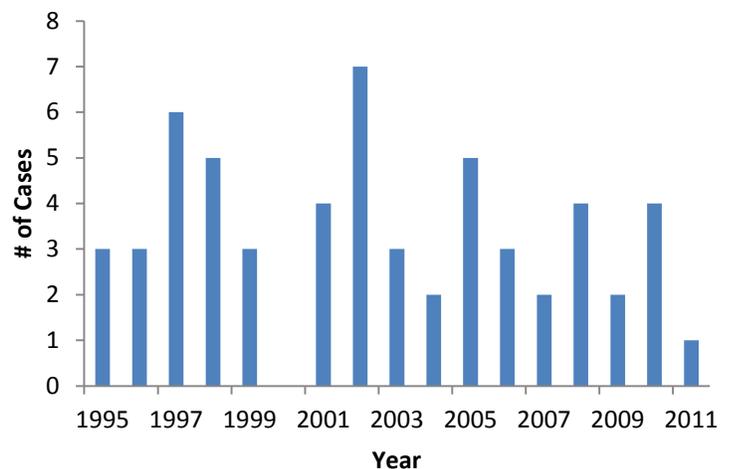
Hop dust can result in acute shortness of breath. The majority of workers who file workers' compensation claims seek emergency help at their local hospital.



✓ *Cases occur most years*

With the exception of the year 2000, between 1 and 7 cases have been reported each year since 1995 for exposure to hop dust.

The cases are expected to be an under-estimate of the true number of affected workers. Many workers may not file workers' compensation claims.

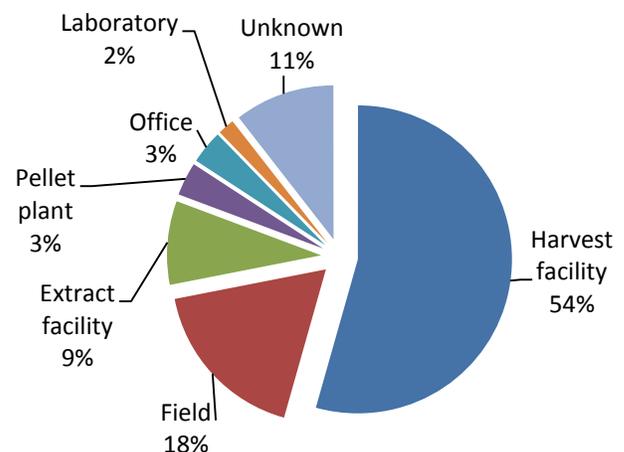


✓ *Workers across the hop industry are affected*

The majority of cases come from the harvest facility during activities including hop hanging, sweeping, kiln, baling, and packaging.

Other cases are associated with:

- Harvesting and truck driving in the field
- The process of CO₂ extract and machine maintenance in extract facilities
- Office work adjacent to hop processing

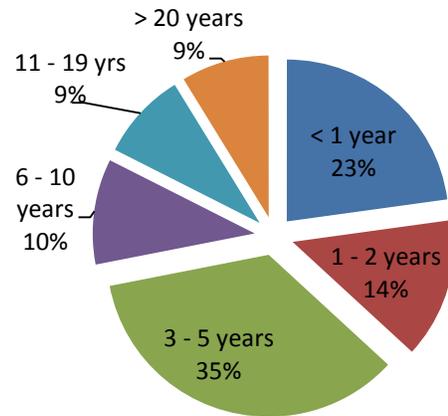


Hop Dust and Respiratory Disease

Key Findings (continued)

✓ *Workers with no history of breathing problems can develop respiratory disease*

Hop related respiratory illness affects not only new workers, but also experienced employees who have been with an employer for a considerable length of time. It is difficult to predict who will be affected, or how long they might work before they are affected. The chart at the right shows employment length at the job of injury, as reported on the injury form at the time a workers' compensation claim is filed.



Limitation: This chart does not reflect an individual's hop exposure that may have occurred while working for previous employers or at home.

What Employers Can Do

For workers that have breathing problems from hop dust:

- ✓ Ask the worker to see a health care provider. Continued exposure may lead to worse health outcomes.
- ✓ Transfer workers with hop-related breathing problems to positions without hop dust.

To protect workers before breathing problems occur:

- ✓ Assess exposure to hop dust. The dust is ubiquitous, but some steps can be taken:
 - Identify processes where local exhaust ventilation could be integrated into machine design.
 - Avoid or minimize concentrated dust exposure. Examples of concentrated dust exposures that have led to immediate shortness of breath include exposures during dust blowdowns, maintenance inside machines or conveyors, and the baling of concentrated hop.
 - Consider restricting non-essential worker access to specific areas or during specific times to reduce unnecessary exposure. Examples include administrative staff exposed to dust in the harvest shed.
- ✓ Establish a Respiratory Protection Program. Provide disposable N95 NIOSH-approved dust-filtering facepiece respirators for workers to voluntarily use for personal comfort. Filtering facepiece respirators are the only style respirator that can be worn without a) medical evaluation and b) respirator fit testing. The use of any respirator requires employee training and record keeping. Bandanas are not effective at filtering hop dust and provide a false sense of protection.
- ✓ Employees routinely exposed to high-dose dust concentrations that cannot be controlled with ventilation may benefit from respiratory protection that is better than filtering facepiece masks. An example of improved protection would be an air-purifying cartridge style respirator, a style that does require medical evaluation and fit testing.

Hop Dust and Respiratory Disease

What Workers Can Do

- ✓ See a healthcare provider if you feel short of breath when working with hops. Early treatment and doctor-prescribed medications give the best health outcome.
- ✓ Discuss your breathing problems with your employer.
- ✓ Hop exposure can cause skin irritation. Long sleeves and gloves can protect the skin.
- ✓ Hop dust can be brought into the home on your clothes. Change out of work clothes as soon as you are home. Wash separately from family laundry and use an extra rinse cycle.

Employer and Hop Industry Assistance

The SHARP Program at the Washington State Department of Labor and Industries (L&I) is a non-regulatory research and prevention program. To prevent respiratory disease, SHARP conducts systematic and routine surveillance of work-related asthma. In 2012, SHARP noticed that hop-induced asthma was occurring regularly, and an in-depth review of the state's workers' compensation database for hop-induced respiratory disease was carried out to better understand worker exposure.

Please call Carolyn Whitaker, Industrial Hygienist, at the SHARP program at 1-888-667-4277 if you would like more information and guidance regarding hop dust exposure. SHARP works with employers on a voluntary and confidential basis¹. For more information about SHARP, see our website at: <http://www.lni.wa.gov/Safety/Research>.

¹RCW 49.17.210 Employer identity, employee identity, and personal identifiers of voluntary participants in research, experiments, and demonstrations shall be deemed confidential and shall not be open to public inspection

This bulletin was developed by the Safety and Health Assessment and Research for Prevention (SHARP) Program, 1-888-667-4277.