

Protect Yourself and Your Workers from Dusts and Molds on Cured Tobacco

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What are Molds?

Molds are fungi (plural of the Latin word fungus), and are a large class of living organisms, one of the “kingdoms” into which biologists categorize life. They are not plants, animals, or bacteria[1]. Molds are found nearly everywhere, even in tobacco stripping rooms, and their spores are in the air or carried by airborne dusts.

Weather conditions this year have been favorable to the growth of blue mold on tobacco. This has raised a concern about inhaling mold during the stripping process, but blue mold itself requires living tissue for sporulation (giving off spores) and would not be active on cured tobacco.

Conditions have also been favorable for other molds, however, and the molds we’ll see most commonly on cured tobacco would be species of *Penicillium* and *Aspergillus*, as well as some *Mucor* and *Rhizopus*. Some mold is likely present on cured tobacco every year, however this year the weather conditions during curing have been particularly favorable for molds. When the cured tobacco is taken down and stripped, the shaking and movement of the leaves can release large amounts of dust and mold spores. In an enclosed barn or stripping room, the dust and mold can become concentrated creating greater health risks for farmers and their workers.



Should You Be Concerned About Molds?

Molds can produce large quantities of spores that can easily become airborne and/or attach to dusts, spreading throughout an

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environment such as a tobacco stripping room, and that can result in exposure to you and your workers. Damp environments, such as we have had this fall, can contribute to conditions that can harm your health. Molds can contribute to allergies and may aggravate other health conditions, including asthma [1].

It poses higher risks to children, to persons with preexisting conditions, such as asthma, and especially to persons with impaired immune systems, who are susceptible to direct and serious fungal infections.

Symptoms associated with mold exposure tend to leave when the person is no longer in contact with the mold. However, there are two types of illnesses that farmers and other agricultural workers may get when exposed to dusts and molds. **Organic Dust Toxic Syndrome** (ODTS), is an illness caused by breathing air with high concentrations of organic dusts. The key here is the high amount of contaminants that is breathed. ODTS is characterized by fever occurring four to 12 hours after exposure and flu-like symptoms such as a general weakness, headache, chills, body aches, and cough. Shortness of breath may also occur. No specific therapy is needed to treat ODTS; it usually disappears within 24 hours after the person is removed from the exposure [2].

Hypersensitivity Pneumonitis, commonly known as Farmer's Lung or Tobacco Worker's Lung[3], also is caused by breathing air contaminated with organic dusts, but unlike ODTS, it is not the heavy concentrations but a person's allergic reaction to the dust and molds. The symptoms are similar to ODTS. The problem with developing this allergic reaction is that once you have become sensitized, even a relatively small exposure later on can cause the symptoms to reoccur. In other words, you have developed a serious allergy. Being a cigarette smoker can increase the effects.



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What Can A Farmer Do?

The logical and practical choice is to wear an approved dust respirator[4]. These are inexpensive and readily available, and disposable. National Institute for Occupational Safety and Health (NIOSH)-approved dust respirators are tested against concentrated dust with an average diameter of 0.4 to 0.6 microns, meaning they would filter out the mold spores in stripping rooms. A farmer should purchase what is known as an N95 dust respirator (they look similar to cheaper “dust masks”, but these are actually respirators). Make sure the product you buy is a NIOSH-approved N-95 respirator. If it is advertised as an N-95 respirator, it will be NIOSH approved. For a few cents more, dust respirators can be purchased with exhalation valves, which make breathing easier. N-99 or N-100 respirators offers an even higher level of protection, but are more expensive and would not be necessary unless a person already has severe allergies to dusts and molds.



How Do I Use the N95 Dust Mask?

Fitting is simple but important. Instructions should come with the respirator and be strictly followed; here are the basics. . The respirator has two straps, one going above the ears and the other below. At the bridge of the nose there is usually a bendable piece that can be made to conform to the nose. After strapping it on and fitting the nose, the user should trace a finger around the mask to be sure it is contacting the face in all places. Then, to be sure air will not leak in between the skin and mask, the person puts their hands over the mask (not pushing the mask against the skin) and inhales; the mask should want to start collapsing if it is sealed properly against the skin (Note that beards will not allow a seal, and a respirator will not work with a beard).

Preventing mold and dust in the tobacco stripping room is impossible; protecting yourself and your workers from the effects of mold exposure is inexpensive and easy to do.



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Some manufacturers also make N95 respirators to fit smaller faces.

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References:

1. Umbach, K.W. and P.J. Davis, *Indoor mold: A general guide to health effects, prevention, and remediation*, C.R. Bureau, Editor. 2006, California State Library: Sacramento, CA.
2. Olade, R.B., D.-D. Lessnau, and J. Fayeyaz (2009) *Tobacco Worker's Lung*. emedince.
3. Reed, D. and P. Kidd, *AgDare—Agricultural disability awareness and risk*, College of Nursing University of Kentucky, Editor. 2009, NASD: Lexington, KY.
4. NIOSH, *Request for Assistance in Preventing Organic Dust Toxic Syndrome* D.o.H.a.H.S. National Institute of Occupational Safety and Health, Editor. 1994, National Agricultural Safety Database (NASD): Washington, D.C.

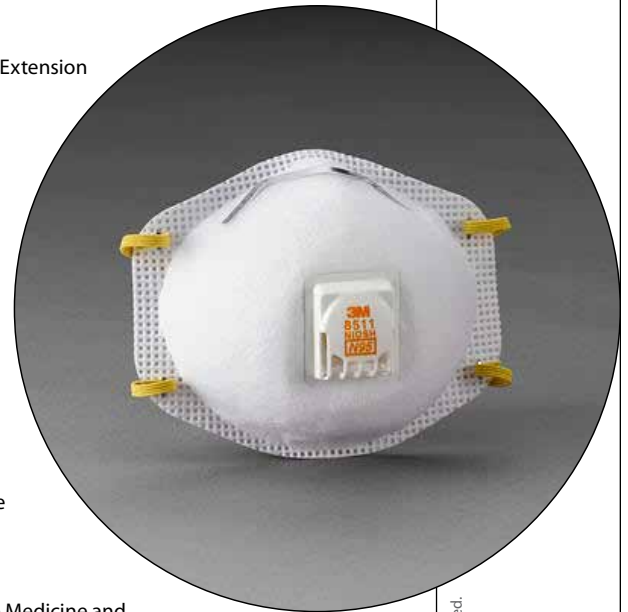
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