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## Fungicides: Safety and restrictions

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# Fungicides: Safety and restrictions

## **Abstract**

Reading through a pesticide label will give you most of the needed information concerning safety for both yourself and others while spraying field crops. Below is a synopsis of some of the dangers and restrictions for some common fungicides. For details on a specific fungicide, please follow the label's directions for mixing and application along with the instructions for safe use.

## **Keywords**

Plant Pathology, Entomology

## **Disciplines**

Agricultural Science | Agriculture | Entomology | Plant Pathology

normal temperatures, which are unfavorable for the disease. If this prediction is correct, it is safe to say that this year's risk will be lower than 2004. Listen to local weather forecasts in the next two weeks to assess the risk of white mold in your field.

The risk of white mold varies from field to field. In general, narrow row soybean fields have a higher risk than wide row soybean fields. Soybean fields planted early have a higher risk than those planted later. In narrow row or early-planted soybean fields, the canopy closes earlier, which helps the soil retain moisture, a factor favoring white mold mushroom production. River-bottom fields, fields with long hours of shade in the morning, fields applied with manure, and fields with a dense canopy all carry a higher risk of white mold due to the higher moisture content in the soil as well. If the soil is dry, though, the disease should not be a problem.

In summary, the risk of white mold this season should be lower than in 2004. A regional outbreak as severe as the one in 2004 is unlikely; however, we cannot rule out another outbreak this season just now. The weather in the coming two weeks will be the determining factor for the recurrence of white mold in soybean fields that had the disease in 2004.

Besides an assessment, you should make efforts to scout for white mold mushrooms from now until mid-July. If you find a surge of white mold mushrooms in your fields, a chemical application should be considered to contain the outbreak and minimize damage to your crop.

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*X. B. Yang is professor of plant pathology at Iowa State University.*



## Plant Diseases

# Fungicides: Safety and restrictions

by Daren Mueller, Department of Plant Pathology, and  
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Reading through a pesticide label will give you most of the needed information concerning safety for both yourself and others while spraying field crops. Below is a synopsis of some of the dangers and restrictions for some common fungicides. For details on a specific fungicide, please follow the label's directions for mixing and application along with the instructions for safe use.

*Eighth  
in a  
series*

### Personal protective equipment

Fungicides labeled for use on field crops have minimal requirements for personal protective equipment, with a few exceptions:

- long-sleeved shirt and pants,
- shoes plus socks, and
- chemical-resistant gloves.

Some fungicides require coveralls over regular work clothing, and some fungicides only require waterproof gloves. Also, nearly half of the available fungicides require protective eyewear.

Other requirements include chemical-resistant footwear, chemical-resistant headgear for overhead exposure, and a chemical-resistant apron when cleaning, mixing, or loading (Headline<sup>®</sup>, Headline<sup>®</sup> SBR, and



**Nearly half of the available fungicides require protective eyewear. (Joyce Hornstein)**

Laredo<sup>®</sup> 25EC). A few fungicides may require the use of a respirator. The details about the specific type of respirator will be listed on the label.

### The Worker Protection Standard (WPS)

The WPS is a federal regulation designed to protect agricultural workers and handlers. It covers pesticides that are used in the production of agricultural plants on farms, forests, nurseries, and in greenhouses. If the pesticide that you are using has an "Agricultural use requirement" statement in the "Directions for Use"

section of the label, you must comply with the WPS. The most recent information about the Standard may be obtained by checking the September 2005 updated WPS *How to Comply* manual. A helpful Web site that has information about the WPS is [www.epa.gov/agriculture/twor.html](http://www.epa.gov/agriculture/twor.html).

### Restricted-Entry Interval (REI)

All agricultural pesticides labeled after April 1994 are required to have a Restricted-Entry Interval (REI) stated on the label. REIs for fungicides, like other pesticides, are established to reduce pesticide exposure and are based on the product toxicity. REIs typically range from 12 to 24 hours for most fungicides available in Iowa for field crops.

In general, workers may not enter a treated area during a Restricted-Entry Interval. Early entry that will result in contact with surfaces treated with pesticides is permitted in only three work situations:

- Short-term tasks that last less than one hour and do not involve hand labor.
- Emergency tasks that take place because of an agricultural emergency.
- Specific tasks approved by EPA through a formal exception process, which includes additional pesticide training for the worker.

### Preharvest Interval (PHI)

These intervals state the minimum amount of time that must pass between the last pesticide application and the harvesting of the crop, or the grazing or cutting of the crop for livestock feed. Typically, PHIs for fungicides applied to field crops range between 21–30 days. Chlorothalonil products have 42-day PHIs. Some triazoles and triazole + QoI fungicides have restrictions based on growth stages instead of a specific number of days—fungicides cannot be applied later than soybean growth stage R5.

Stricter residue limits from other countries are being established. If a crop is harvested before the PHI has passed, there may be excessive pesticide residues on that crop.

### Other restrictions and precautions

Listed below are additional restrictions or precautions. These do not necessarily pertain to all fungicides. Carefully read labels prior to application to get specific information for the product being used.

- Some fungicides cause irreversible or temporary eye damage.
- Quadris® and Quilt® are phytotoxic to certain apple varieties.
- Several fungicides are toxic to aquatic organisms so do not apply or rinse equipment near water bodies.
- Soybean forage or hay treated with several fungicides cannot be fed to livestock.
- For Alto®, wheat and corn may be planted 180 days after last treatment and 365 days for all other crops.

The following Iowa State University Extension publications may be purchased or viewed by contacting Iowa State University Extension Distribution or by visiting their Web site, [www.extension.iastate.edu/store](http://www.extension.iastate.edu/store):

PM 1663a *Understand label precautions*

PM 1663b *What to do when clothes are soiled with pesticide*

PM 1663c *Wear the right gloves*

PM 1663d *Wear coveralls and aprons*

PM 1663e *Use eye and lung protection*

PM 1878 *For Pesticide Work*

*Guard your Hands with Gloves!*

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