

Chapter 15

Safe Fungicide Storage

*Diane Brown-Rytlewski,
Michigan State University*

Store Fungicides Correctly to Prolong Shelf Life

Growers who purchased fungicides in anticipation of using them for managing soybean rust may have unused product that requires storage. Properly stored fungicides typically have a shelf life of two to three years. General guidelines for proper pesticide storage are summarized in this report. More specific storage requirements for individual products can be found on the pesticide labels or can be obtained by contacting the manufacturer. Products that require protection from freezing or extreme heat should have that information on the label.

Pesticide containers (or packaging) have a batch number and a manufacture or formulation date. They may display a suggested use-by or expiration date. Information about the storage life of a fungicide once the container is opened is rarely found on the label; however, this information should be available from the distributor or manufacturer. Always use opened products first, followed by the oldest products. To make it easier to keep track of what you have in storage, tag or mark the date of purchase on each pesticide container when it is delivered.

For information and regulations related to constructing a

new pesticide storage facility or evaluating your current pesticide storage area, consult the Farm-A-Syst program or the Department of Agriculture in your state.

The storage tips presented here apply to all pesticides and are not limited to fungicides.

Prevent Water and Moisture Damage to Pesticides

Water or excess moisture can damage pesticide containers and their contents. Moisture can cause metal containers to rust and paper and cardboard containers to split or crumble. Dry pesticides stored under these conditions may cake or clump. Slow-release products may release their active ingredients. Pesticide labels may smear, peel, or otherwise become unreadable.

To prevent water and moisture damage:

- Keep containers securely closed when not in use.
 - Place opened bags of dry formulations (i.e., wettable and soluble powders, dry flowables, and granules) into sealable plastic bags or clear plastic containers. Plastic bags or containers allow the label to be easily identified, while

reducing moisture absorption and preventing spills.

- When storing liquid formulations on shelves (preferably metal shelving, to prevent possible absorption of pesticide by the shelving material), avoid placing liquids above dry materials, where leaking could cause damage.
- A jug containing a liquid formulation may be set inside a plastic pan on the shelf to contain leaks.
- Keep bags off the floor; store on plastic pallets.
 - Keep metal drums from direct contact with floors (where they may be more prone to rusting) and place them in a drum rack or on a plastic pallet.
 - Avoid locating a pesticide storage facility near an area likely to flood or where runoff water can be a potential problem, such as at the base of a slope.

Control Pesticide Storage Temperatures

Protection from temperature extremes is important because either freezing or excess heat can shorten the shelf life of

pesticides and may reduce their effectiveness. The normal temperature range for storing liquid pesticides is usually 40°F to 100°F. Low temperatures may cause the product to break down or separate, or the container may rupture. If a pesticide does freeze, some products may be shaken, rolled, or agitated to re-suspend the contents after thawing. Contact the manufacturer for advice on using specific pesticides that have frozen. Heat expansion of containers may place the contents under pressure, causing the container to overflow or break.

To prevent damage to pesticides from temperature:

- Water-soluble packages may attract moisture and become brittle when frozen. Store them in a warm, dry location.
- The storage area should be insulated or temperature controlled to prevent freezing and or/overheating.
- Exhaust fans vented to the outside can help reduce temperatures and remove vapors and fumes from the storage area.
- To avoid overheating and degradation of product, pesticide containers should not be stored where they are exposed to direct sunlight.

General pesticide storage tips:

- Whether your pesticide storage area is an entire

room or a building, or a closet or a cabinet devoted to pesticide storage, keep it locked to prevent unauthorized entry, vandalism, and theft.

- Post warning signs on doors and windows to let people know that pesticides are stored inside.
- No Smoking signs should also be posted, since many pesticides are flammable.
- Regularly check containers for leaks. The contents of leaking containers should be transferred to a sound container with the exact same formulation and label. Follow label recommendations for disposal of damaged containers.
- Store pesticides in their original containers with the labels intact.
- Put the heaviest containers and liquids on lower shelves; be sure shelves are sturdy enough to handle the load.
- To avoid cross-contamination, store each type of pesticide (fungicides, herbicides, and insecticides) in a separate location or on a separate shelf within the storage unit.
- Store pesticides away from food, pet food, feed, seed, fertilizers, veterinary supplies, and flammable materials.

References

National Pesticide Applicator Certification Core Manual. 2006. Edited by C. Randall, Michigan State University; W. Hock, The Pennsylvania State University, and EPA Consultant; E. Crow, Maryland Department of Agriculture; C. Hudak-Wise, North Carolina Department of Agriculture and Consumer Services; and J. Kasai, EPA Office of Pesticide Programs. Chapter 8, Transportation, Storage and Security, pp.127-131. Published by the National Association of State Departments of Agriculture Research Foundation.

Safe Transport, Storage, and Disposal of Pesticides, 2001-2006. Clyde L. Ogg, Larry D. Schultz, and Shripat T. Kamble. University of Nebraska, Lincoln, Extension Bulletin EC2507.

Storing Fungicides Safely. August 22, 2005. A. Robertson and R. Pope. Iowa State Integrated Crop Management Web Site: <http://www.ipm.iastate.edu/ipm/icm/2005/8-22/storefung.html>:

Temperature Effects on Storage of Greenhouse, Ornamental, and Turf Pesticides. F. Fishel. March 2002. University of Missouri, Extension Bulletin IPM1012.