

## Rinsing Pesticide Containers

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It is estimated that every year one million plastic agricultural pesticide containers are used in Nebraska. Effective rinsing of these containers saves money, protects the environment and meets federal and state regulations on pesticide use.

Proper rinsing of pesticide containers is easy to do, saves money and contributes to good environmental stewardship. Rinsing containers at the time of spray solution preparation prevents potential problems with unrinsed containers, storage of the rinse solution (rinsate), and the generation of hazardous waste. Even during a busy season, the few extra minutes it takes to properly rinse empty pesticide containers is time well spent. For example:

- Rinsing pesticide containers efficiently and economically uses all the pesticide that you purchased. When the rinsate is added immediately to the load, the need to store and later dispose of it is eliminated.
- Rinsing pesticide containers immediately upon emptying easily removes leftover concentrate. If the container is not rinsed immediately, remaining pesticide mixtures may dry inside the container and be difficult to remove.
- Rinsing containers removes potential pesticide exposures to people, wildlife and the environment.
- Proper rinsing is required by federal regulations and is a sound management and environmental practice.

### Rinsing Saves Money

It is very easy to leave six ounces or more of pesticide product in a 2.5-gallon container. Six ounces is about two percent. If you do not rinse, you either apply two percent less product, which can affect performance of the pesticide, or incur two percent more cost for the application. Neither option is good.

If you delay rinsing your used pesticide containers it is more difficult to remove product from the containers. Because it is more difficult, more time is required and time is money. Removing pesticide product from containers that were not rinsed immediately may also require additional dilutents. These added chemicals are costly and some may even cause injury if applied to the target site.

### Rinsing Helps Protect the Environment

Proper rinsing of pesticide containers reduces a potential source of contamination of soil, surface and ground water. Contamination harms plants and animals and affects water supplies. Preventing environmental contamination is always better and less expensive than cleanup.

Federal laws require the rinsing of liquid pesticide containers. Violation of these laws is punishable by criminal and/or civil penalties. When an empty container is recycled, returned to the supplier or disposed of according to label directions, **it must be properly rinsed**. Approved pesticide container recyclers and those receiving returned minibulk containers can only accept properly rinsed containers. Some landfill operations may not accept rinsed pesticide containers.

### Types of Pesticide Containers

The most common agricultural pesticide containers are the minibulk containers from 85 to 300 gallons, plastic drums of 15-, 30- and 55-gallon sizes, and returnable shuttle containers. The 2.5-gallon plastic containers also remain popular. The minibulk containers and shuttles are intended to be returned and reused by the supplier. Granular and dust insecticides are sold in waxed-paper or other water-resistant containers. Pesticide products used on animals and in households are nearly all sold in plastic containers.

Plastic drums and 2.5-gallon containers may be recycled after the pesticide materials have been removed by rinsing. Proper rinsing of plastic pesticide drums and containers will remove more than 99 percent of any pesticide residue after it has been emptied. Two commonly used procedures are effective for rinsing of pesticide containers: triple-rinsing and pressure-rinsing.

### Triple-Rinsing

Triple-rinsing means rinsing the container three times and can be used with all plastic containers.

**Before emptying pesticide containers:** With the cap on, shake the container to thoroughly mix the pesticide. If dilutents or solvents have separated from the pesticide product in the container, mixing will help in the complete removal of the product.

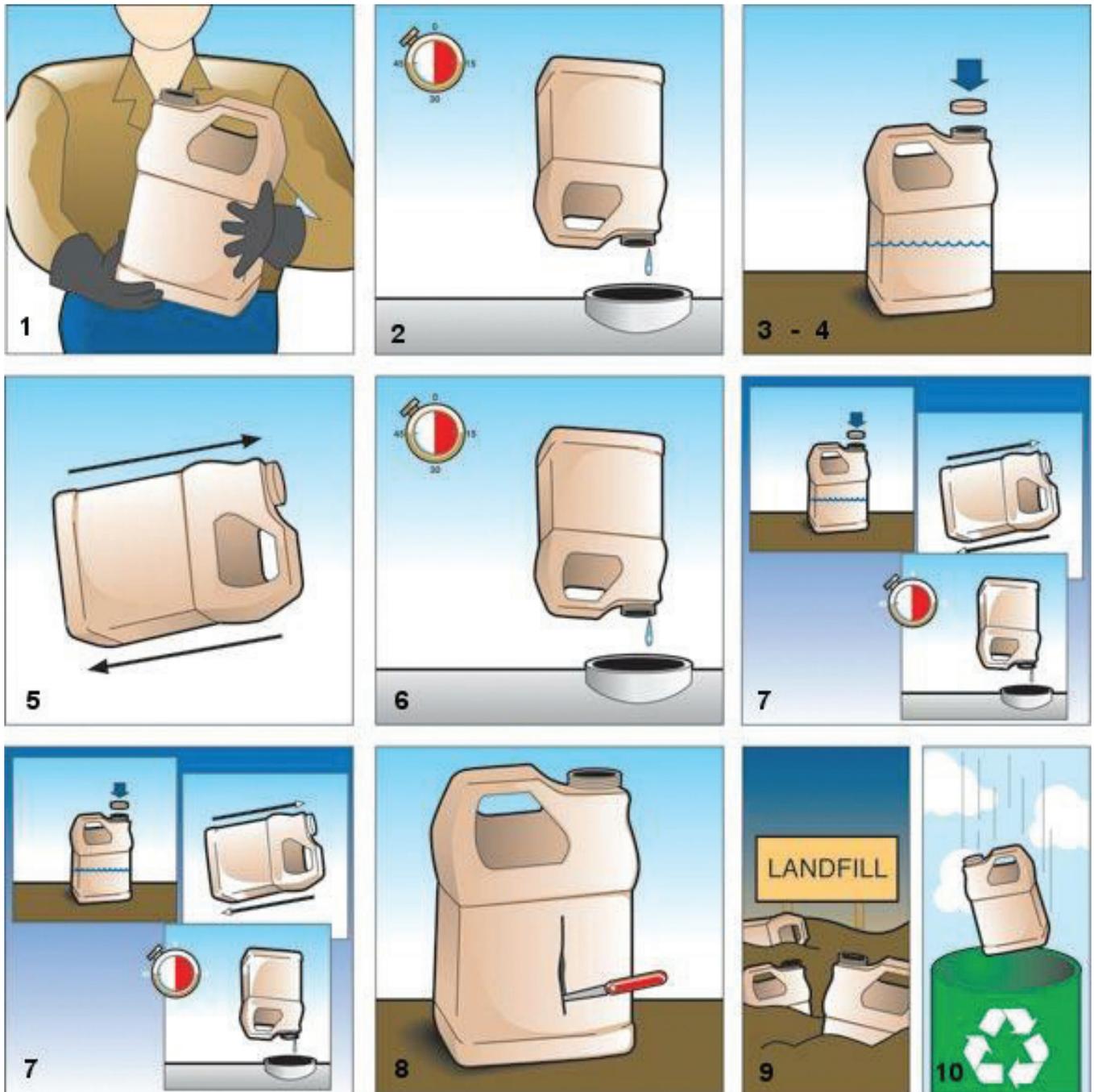


Figure 1. Triple-rinsing procedure for plastic pesticide containers. Used with permission from Fred Whitford, Purdue University. Scott Dallas and John Metzinger, illustrators.

### How to triple-rinse (Figure 1):

1. Wear the same personal protective equipment while rinsing containers as the pesticide label requires for handling and mixing.
2. Remove cap from the pesticide container. Empty all pesticide into the spray tank, allowing the container to drain for 30 seconds. Begin rinsing immediately or the product may be difficult to remove. If you are not able to rinse the container immediately, replace the cap until you can.
3. Fill the container 10 percent to 20 percent full of water or rinse solution (i.e., fertilizer solution).
4. Replace the cap onto the container.
5. Swirl the liquid within the container to rinse all inside surfaces.
6. Remove cap from the container. Add the rinsate from the pesticide container to spray tank and allow to drain for 30 seconds or more.
7. Repeat steps 3 through 6 **two more times**.
8. Render container unusable by puncturing or crushing.

- Replace cap and dispose of pesticide container according to label directions.
- If recycling, remember that caps and containers are made from different materials; therefore, caps cannot be recycled.

### How to triple-rinse drums:

First re-read the procedures for triple-rinsing containers because they contain important information not listed here. Using the following procedures for triple-rinsing drums may require two people:

- Empty the drum to the lowest possible level.
- Fill the drum with water to 25 percent of capacity. Replace and tighten bungs.
- Tip the drum onto its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds.
- Stand the drum on its end and tip it back and forth several times to rinse the corners.
- Turn the drum over, onto its other end, and repeat this procedure.
- Carefully empty the rinsate into the spray tank.
- Repeat steps 2 through 6 **two more times**.

- Carefully rinse the cap over spray tank opening and then dispose of as regular solid waste.
- Puncture the base of the drum with a drill so that it cannot be reused.
- Store rinsed drums under cover where they will be protected from rain.

### Pressure-Rinsing

Use a pressure rinser with an anti-siphon device to wash the remaining pesticide from the container. A special nozzle with a spear-point, generally available from your pesticide supplier and other sources, and attached to the end of a water hose, supplies water under pressure to the interior of a pesticide container. Pressure-rinsing is faster and easier than triple-rinsing and can be used most effectively with plastic 2.5 gallon pesticide containers.

**Before emptying pesticide containers.** With the cap on, shake the container to thoroughly mix the pesticide. If diluents or solvents have separated from the pesticide product in the container, mixing will help in the complete removal of the product.

### How to pressure-rinse 2.5-gallon containers (Figure 2):

- Wear the same personal protective equipment while rinsing containers as required on the pesticide label for handling and mixing.



Figure 2. Pressure-rinsing procedure for plastic pesticide containers. Used with permission from Fred Whitford, Purdue University. Scott Dallas and John Metzinger, illustrators.

2. Remove cap from the pesticide container. Empty all pesticide into the spray tank. Turn the container so that any product in the handle may flow out. Allow the container to drain for 30 seconds. Begin the rinsing procedure immediately or the product may be difficult to remove. If you are not able to rinse the container immediately, replace the caps until you are able to rinse the container.
3. Insert the pressure-rinsing nozzle, which should be equipped with a flow control, by puncturing a hole through the lower side of the pesticide container.
4. Hold the pesticide container upside down over the spray tank opening, turn on the flow of water and allow the rinsate to run into the spray tank.
5. Rinse for the length of time recommended by the manufacturer (30 seconds or more). Rotate or rock the nozzle to rinse all inside surfaces.
6. Rinse caps separately in a bucket of water and pour this rinse water into the spray tank.
7. Replace cap and dispose of pesticide container according to label directions.
8. If recycling, remember that caps and containers are made from different materials; therefore, caps cannot be recycled.

### Storing Empty Pesticide Containers

- Unrinsed empty pesticide containers should be stored in the same way you store containers with pesticide. Replace the cap and store unrinsed containers upright in a roofed or covered and secure (locked) area over an impervious surface.
- Pressure-rinsing creates a hole in the container. Store pressure-rinsed containers indoors to prevent water, rain or snow from entering the containers. Remove the caps to allow the containers to completely dry out during storage.
- Triple-rinsed containers should be stored outside only if you replace the cap. Triple-rinsed and capped containers do not need to be stored on impervious surfaces.
- When you are ready to offer rinsed, empty pesticide containers for recycling, remove the caps (they cannot be recycled) and any labels, plastic sleeves or wrappers attached to the container.

### Container Recycling

Recycling clean agricultural pesticide containers protects Nebraska's environment. Several locations in Nebraska accept rinsed plastic agricultural pesticide containers for recycling. All containers are thoroughly inspected before acceptance.

Remove label booklets, plastic shrink-wrap labels and caps from containers before offering for recycling. Any pesticide container with pesticide residue that can be rubbed off with a neoprene- or nitrile-gloved hand is rejected. Properly rinsed containers that are stained will be accepted. Do not include pesticide containers in household or curbside recycling programs. Check with your University of Nebraska–Lincoln extension educator, other local officials, or the Web site (<http://pested.unl.edu/recycling>) to determine the locations of plastic pesticide container recycling sites in Nebraska.

### Remember

- ✓ Read and follow all pesticide label directions. Federal law requires rinsing of liquid pesticide containers.
- ✓ NEVER dispose of rinsate on a site the pesticide product label doesn't allow. Instead, use the rinsate generated by triple- or pressure-rinsing pesticide containers as part of your spray mixture.
- ✓ Store pesticides only in the original, labeled containers. Never reuse a pesticide container for any purpose.
- ✓ Wear appropriate personal protective equipment as required by the label.
- ✓ Always use an anti-siphon or back-flow prevention device when filling spray tanks or rinsing pesticide containers.
- ✓ Mixing and loading sites should be at least 150 feet away from all wells. Review pesticide labels. Be aware of requirements for specific set-backs from wells regardless if the well is active or not.

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