



# Rinsing Pesticide Containers

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*It is estimated that every year 1 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 for pesticide use.*

Proper rinsing of pesticide containers is easy, saves money, and contributes to good environmental stewardship. Rinsing containers when preparing spray solutions prevents potential problems with unrinsed containers, storing rinse solution (rinsate), and generating hazardous waste. Even during periods of high activity, container rinsing is important and worth the time it takes. For example:

- Rinsing pesticide containers ensures your ability to use the full amount of pesticide you purchased. When the rinsate is added immediately to the load and applied to a labeled site, you eliminate the need to store and later dispose of it.
- Rinsing pesticide containers immediately after emptying easily removes leftover concentrate. If the container is not rinsed immediately, remaining pesticide residues may dry inside the container and become difficult to remove.
- Rinsing containers prevents potential pesticide exposures to people, wildlife, and the environment.
- Proper rinsing is required by federal regulations.

### Rinsing Saves Money

It is very easy to leave 6 ounces or more of pesticide product in a 2.5-gallon container. That is about 2 percent of the container's capacity. If you do not rinse, you either

**Rinsate:** A liquid obtained from rinsing pesticide containers and application equipment. Rinsate contains rinse water and pesticide residue.

apply 2 percent less product, which can affect performance of the pesticide, or incur 2 percent more cost for the application. Neither option is good.

Delayed rinsing of empty containers makes it more challenging to remove leftover residues. This increases the time you will have to spend cleaning them. Removing pesticide product from containers that were not rinsed immediately may also require additional cleaning agents. These added chemicals are costly, and some may even cause non-target injury if applied with rinsate to a labeled site.

### Rinsing Helps Protect the Environment

Properly rinsing pesticide containers reduces the risk of contaminating soil, surface water, and groundwater. Contamination harms plants and animals and affects water supplies. Whenever possible, you should prevent environmental contamination. Cleaning up contamination is far more expensive and time-consuming than preventing it.

### Rinsing is NOT Optional

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

## Types of Pesticide Containers

The most common agricultural pesticide containers are plastic drums in 15-, 30-, and 55-gallon sizes, and portable refillable containers (minibulks, shuttles, totes, etc.), which are usually larger than drums.

2.5-gallon plastic containers also remain popular. Portable refillable containers are intended to be returned to and reused by the supplier. Applicators returning these containers are not required to rinse them. Instead, it is the supplier's responsibility to rinse the containers. If the supplier intends to refill the container with the exact same formulation as it held previously, they may choose not to rinse. Wax paper bags or other water-resistant containers are commonly used to sell granular and dust insecticides. The majority of pesticide products for animals and household use are packaged in plastic containers.

Plastic drums and 2.5-gallon containers may be recycled after the pesticide materials have been removed by rinsing. Properly rinsing empty plastic pesticide drums and containers removes more than 99 percent of any leftover pesticide residue. Two commonly used procedures are effective for rinsing pesticide containers: triple rinsing and pressure rinsing.

### Triple Rinsing

Triple rinsing means rinsing the container three times. This method can be used with all plastic containers.

#### How to Triple Rinse 2.5-Gallon Containers (Figure 1)

1. Wear the same personal protective equipment (PPE) while rinsing containers as the pesticide label requires for handling and mixing. (For information on selecting PPE, see *Protective Clothing and Equipment for Pesticide Applicators*, G758.)



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

2. Remove the cap from the pesticide container. Empty all pesticide into the spray tank, allowing the container to drain for 30 seconds. Begin rinsing the container immediately or the product may be difficult to remove. If you are not able to clean the container right away, put the cap back on until you can.
3. Fill the container 10 percent to 20 percent full of water or rinse solution (i.e., fertilizer solution).
4. Place the cap back on the container.
5. Swirl the liquid within the container to rinse all inside surfaces.
6. Remove the cap from the container. Pour the rinsate from the pesticide container into the spray tank and allow it to drain for 30 seconds or more.
7. Repeat steps 3 through 6 **two more times**.
8. Puncture the container to improve drying and prevent reuse. Keep any puncturing tools with the pesticides.

Never use these tools anywhere else, especially in the kitchen or household.

9. Place the cap back on and dispose of the pesticide container according to label directions.
10. If recycling, remember that caps and containers are made from different materials; therefore, caps cannot be recycled. Ensure that caps are clean before landfilling.

### How to Triple Rinse Drums

First, reread the procedures for triple rinsing containers because they contain important information not listed here. Triple rinsing a drum may require two people.

1. Empty the drum as much as possible.
2. Fill the drum with water to 25 percent of capacity. Replace and tighten bungs (plugs) to seal the drum.
3. Tip the drum on its side. Roll it back and forth for 30 seconds, ensuring at least one complete revolution.
4. Stand the drum on end and tip it back and forth several times to rinse the inner edging.
5. Turn the drum over, onto its other end, and repeat this procedure.
6. Carefully pour the rinsate out of the drum into the spray tank.
7. Repeat steps 2 through 6 **two more times**.
8. Carefully rinse the bung(s) over the spray tank opening and then dispose of as regular solid waste.
9. Puncture the base of the drum with a drill to improve drying and prevent reuse. Keep a drill bit with the pesticides for this purpose and this purpose only.
10. Store rinsed drums under a weather-proof cover to keep the elements out.

### Pressure Rinsing

Use a pressure rinser with an anti-siphon device to flush the remaining pesticide from the container. The anti-siphon device will prevent pesticide-contaminated water from backflowing into your source of fresh water. Special nozzles with spear points, available from pesticide suppliers and other sources, are well suited for pressure rinsing.

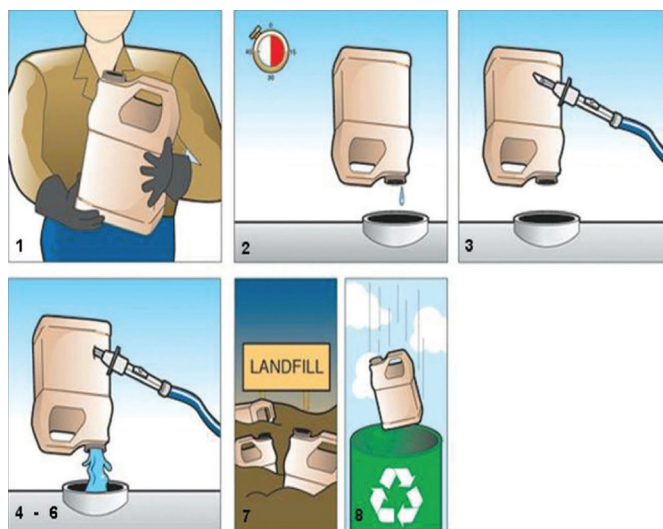


Figure 2. Pressure-rinsing procedure for plastic pesticide containers. Used with permission from Fred Whitford, Purdue University. Scott Dallas and John Metzinger, illustrators.

Attach the nozzle to the end of a water hose and force water under pressure into the pesticide container. Pressure rinsing is faster and easier than triple rinsing and can be used most effectively with plastic 2.5-gallon pesticide containers.

### How to Pressure Rinse 2.5-Gallon Containers (Figure 2)

1. Wear the same PPE while rinsing containers as required on the pesticide label for handling and mixing.
2. Remove the cap from the pesticide container. Empty all pesticide into the spray tank. Turn the container so that any product in the handle flows out. Allow the container to drain for 30 seconds. Begin the rinsing procedure immediately or the product may become difficult to remove. If you are unable to rinse the container immediately, place the cap back on until you are able to rinse the container.
3. Insert the pressure-rinsing nozzle 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 (usually 30 seconds or more). Rotate or twist the nozzle to wash all internal surfaces.

6. Rinse the cap separately in a bucket of water and pour this rinse water into the spray tank.
7. Place the cap back on and dispose of the container according to the label directions.
8. If recycling, remember that caps and containers are made from different materials; therefore, caps cannot be recycled. Dispose of cleaned caps as regular solid waste.

### Storing Empty Pesticide Containers

- Unrinsed empty pesticide containers should be stored in the same way as containers with pesticide still in them. Place the cap back on and store unrinsed containers upright in a weather-proof (locked) structure over an impervious surface.
- Store rinsed, punctured 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.
- When you are ready to offer rinsed pesticide containers for recycling, remove the caps (they cannot be recycled) and any labels, plastic sleeves, or wrappers attached to the container. Dispose of these materials in an approved landfill.

### Container Recycling

Recycling clean agricultural pesticide containers protects Nebraska's environment. Several locations in Nebraska accept rinsed, plastic, agricultural (and other professional-use) pesticide containers for recycling. All containers are thoroughly inspected before acceptance.

Any pesticide container with pesticide residue that can be rubbed off with a neoprene- or nitrile-gloved hand will be rejected. Properly rinsed containers that are stained will be accepted. Do not include pesticide containers in household or curbside recycling programs. Check with your Nebraska Extension educator, other local officials, or <https://pested.unl.edu/recycling> to determine the locations and availability of plastic pesticide container recycling sites in Nebraska.

### Remember

- Read and follow all pesticide label directions. Federal regulations require 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. Do not exceed labeled application rates.
- Store pesticides only in their original, labeled containers. Never reuse a pesticide container for any purpose. Never use other containers (e.g., soda bottles) to store pesticides. Children, as well as adults, have died from ingesting these, thinking they were food beverages.
- Wear appropriate PPE as required by the label.
- Always use an anti-siphon or backflow prevention device when filling spray tanks or rinsing pesticide containers.
- Sites used for mixing and loading pesticides should maintain a minimum distance of 150 feet from all wells. Carefully review pesticide labels. Be aware of requirements for specific setbacks from wells regardless of whether the well is active or not.



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