

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Historical Materials from University of
Nebraska-Lincoln Extension

Extension

1993

G93-1150 Rinsing Pesticide Containers

Larry D. Schulze

University of Nebraska - Lincoln, lschulze1@unl.edu

Clyde Ogg

University of Nebraska - Lincoln, cogg1@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/extensionhist>



Part of the [Agriculture Commons](#), and the [Curriculum and Instruction Commons](#)

Schulze, Larry D. and Ogg, Clyde, "G93-1150 Rinsing Pesticide Containers" (1993). *Historical Materials from University of Nebraska-Lincoln Extension*. 1227.

<https://digitalcommons.unl.edu/extensionhist/1227>

This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Historical Materials from University of Nebraska-Lincoln Extension by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.



Rinsing Pesticide Containers

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.

Larry D. Schulze, Extension Pesticide Coordinator
Clyde L. Ogg, Extension Assistant-Pesticide Training

- [Rinsing Helps Protect the Environment](#)
- [Types of Pesticide Containers](#)
- [Pressure-Rinsing](#)
- [Triple-Rinsing](#)
- [Container Recycling](#)
- [Things to Remember](#)

Proper rinsing of pesticide containers is easy to do, saves money and helps protect people and the environment. It also helps prevent potential problems with unrinsed containers and storage of the rinse solution (rinsate). Even during a busy season, the few extra minutes it takes to properly rinse empty pesticide containers is time well spent. For example:

- Rinsate added directly into the spray tank efficiently and economically uses all pesticide in the container. This eliminates the need to store and later dispose of the rinsate.
- Unless the container is rinsed immediately, some pesticides will solidify and become difficult to remove.
- Rinsing containers removes a potential source of pesticide exposure to people, wildlife and the environment.
- Proper rinsing is required by federal regulations and is a good, sound management and environmental practice.

Rinsing Helps Protect the Environment

Proper rinsing of pesticide containers reduces a potential source of contamination of soil, surface and ground water. When contamination occurs, plants and animals may be harmed and water supplies affected. Prevention of environmental contamination is always better and less expensive than cleanup.

Federal laws require the rinsing of 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**. Landfill operators, approved pesticide container recyclers and those receiving returned bulk containers can only accept properly rinsed containers.

Types of Pesticide Containers

There are different types of pesticide containers. The most common agricultural pesticide container is a 2.5 gallon plastic jug. Many liquid agricultural pesticides are also sold in bulk containers, intended to be returned and reused by the supplier. Pesticides are also sold in various sizes of metal containers and many granular insecticides are sold in paper containers. Pesticide products used on animals and in households are often sold in glass containers.

Proper rinsing of nearly all types of pesticide containers will remove more than 99% of any pesticide residue remaining in the container after it has been emptied (*see Table I*).

Two commonly used procedures are effective for proper rinsing of pesticide containers: pressure-rinsing and triple-rinsing.

Table I. Percent of pesticide residue remaining after proper rinsing.*

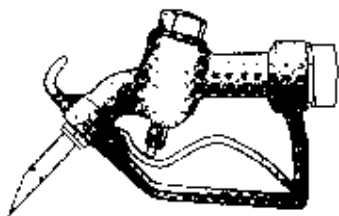
Pesticide	Container	Rinse	% Pesticide Remaining
Alachlor (Lasso®)	5 gal metal	pressure rinse	< 0.1
Chlorpyrifos (Lorsban®)	2 gal metal	triple rinse	< 0.1
	2 gal metal	pressure rinse	0.4
Carbofuran (Furadan®)	1 gal plastic	pressure rinse	0.1
Diazinon	5 gal metal	triple rinse	< 0.1
	1 gal metal	pressure rinse	0.1
Parathion	2 gal metal	pressure rinse	0.1
Trifluralin (Treflan®)	5 gal metal	rinse 4 times	< 0.1
*See Peck entry in bibliography for source information contained in this table.			

Pressure-Rinsing



Figure 1. Pressure-rinsing nozzles.

A special nozzle, generally available from your pesticide supplier, is attached to the end of a water hose (with back-flow protection device attached) to wash the remaining pesticide from the container. Pressure-rinsing, which may be faster and easier than triple-rinsing, can be used with plastic and nonpressurized metal pesticide containers.



How to pressure-rinse:

1. Remove cap from the pesticide container. Empty pesticide into the spray tank and allow the container to drain for 30 seconds.
2. Insert the pressure-rinser nozzle by puncturing through the lower side of the pesticide container.
3. Hold the pesticide container upside down over the spray tank opening so rinsate will run into the spray tank.
4. Rinse for length of time recommended by the manufacturer (30 seconds or more). Rotate the nozzle to rinse all inside surfaces.
5. Rinse caps in a bucket of water for more than one minute and pour this rinse water into the spray tank.
6. Replace cap and dispose of pesticide container according to label directions. If recycling, plastic caps and containers are usually made from different materials and therefore should be recycled separately.



Figure 2. Pressure-rinsing.

Triple-Rinsing

Triple-rinsing means to rinse the container three times. Triple-rinsing can be used with plastic, nonpressurized metal and glass containers.

How to triple-rinse:

1. Remove cap from the pesticide container. Empty all remaining pesticide into the spray tank, allowing the container to drain for 30 seconds.
2. Fill the container 10% to 20% full of water or rinse solution (i.e., fertilizer solution).
3. Secure the pesticide container cap.
4. Swirl liquid within the container to rinse all inside surfaces.
5. Remove cap from the container. Add the rinsate from the pesticide container to spray tank and allow to drain for 30 seconds or more.
6. Repeat steps 2 through 5 **two more times**.
7. Replace cap and return container to supplier or dispose of pesticide container according to label directions. If recycling, plastic caps and containers are usually made from different materials and therefore should be recycled separately.

Container Recycling

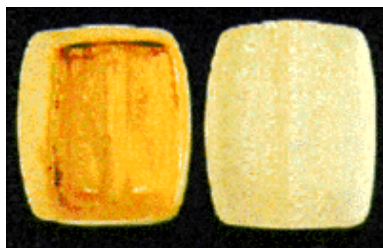


Figure 3. Agricultural pesticide container on the left is NOT acceptable.

Recycling clean agricultural pesticide containers is a way you can protect Nebraska's environment. Several community landfills and other sites in Nebraska are accepting plastic agricultural pesticide containers that have been pressure- or tripled-rinsed. 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 is rejected. Properly rinsed containers that are stained will be accepted. Check with local officials to determine if your community is involved in recycling of agricultural pesticide containers.

Things to Remember

- Read and follow all label directions.
- Store pesticides only in the original, labeled containers.
- Wear appropriate protective gear as directed by the label.

- Never reuse a pesticide container for any purpose.
- To recycle, return the rinsed container to supplier or dispose of pesticide containers properly.
- When not using a water nurse tank, always use a 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.

The following **Bibliography*** provides sources for additional information on the vitally important issue of pesticide container rinsing.

- Bohmert, Bert. *The Standard Pesticide User's Guide*. Reston Publishing Co., Inc., Reston, VA. 1990.
- Cochran, Dale. *Program for the Handling and Disposal of Used Pesticide Containers*. Iowa Dept. of Agriculture and Land Stewardship. 1988.
- Code of Federal Regulations 40. Parts 190 to 399. Revised July 1, 1991.
- Fox, Austin S. and Herman Delvo. *Pesticide Containers Associated with Crop Production*. USDA, Washington, DC. 1972.
- Harein, Phil and Jim Cink. *Pesticide and Pesticide Container Disposal*. AG-FS-0925, Revised 1988. Minnesota Extension Service, University of Minnesota.
- Krueger, Raymond F. *Federal Regulation of Pesticide Disposal*. USEPA, Hazard Evaluation Div., OPP, Washington, DC. 1985.
- Miles, J.R. et al. *Assessment of Hazards Associated with Pesticide Container Disposal and the Rinsing Procedures as a Means of Enabling Disposal of Pesticide Containers in Sanitary Landfills*. Journal of Environmental Science and Health, B(18):305-315. 1984.
- Minnesota Dept. of Agriculture, Agronomy Services Division. *MN Empty Pesticide Container Disposal Report*. March, 1988.
- Minnesota Documents Div., Dept. of Agriculture Pesticide Law Chapter 18B. Extracted from the 1987 MN Statutes.
- Minnesota Extension Service, University of MN. *Private Pesticide Applicator's Training Manual*. 1988.
- Peck, Dana P. *The Determination of Residues of Certain Pesticides after Triple Rinsing*. 1985.
- Shanoff, Barry S. *CERCLA Liability Threatens Business and Industry*. World Waste, Vol. 29, No. 3. March 1986.
- Stanley, Len C., Blanche C. Haning and Michael D. Smolen, Eds. *Pesticide Container Disposal*. Fact Sheet 3, *Pesticides and Water Quality*, North Carolina Agricultural Extension Service, Raleigh, NC. 1988.
- Wintersteen, Wendy and Robert Hartzler. *Pesticides Used in Iowa Crop Production in 1985*. Cooperative Extension Service, Iowa State University. 1987.

*Adapted with permission from Rinsing Pesticide Containers, University of Minnesota, by Dean Herzfeld and Thomas R. Halbach.

File G1150 under: PESTICIDES, GENERAL

D-9, Safety

Issued April 1993; 17,500 printed.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.

University of Nebraska Cooperative Extension educational programs abide with the non-discrimination policies of the University of Nebraska-Lincoln and the United States Department of Agriculture.