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Pesticide Container Rinsing and Water Quality

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Proper rinsing of pesticide containers saves money, is easy to do and prevents serious hazards for people, animals or the environment that may result from unrinsed containers. **Only containers that have been properly triple-rinsed or pressure washed can be legally recycled or disposed of properly.** Container rinsing may take a little time during a busy season, but it is time well spent.

Container Rinsing

When a pesticide container is emptied, it should be rinsed immediately. Rinsate from the pesticide container should be added to the spray tank so all the pesticide is used for its intended purpose. This eliminates the need to store and dispose of the rinsate. It also eliminates the chance of the pesticide drying inside the container, making it almost impossible to remove. Immediate rinsing of containers eliminates a potential source of exposure to people and animals. Proper rinsing is required by law and is a good environmental practice.

Rinsing of pesticide containers prevents possible contamination of soil and water. When contamination occurs, plants, animals and water supplies may be affected. Preventing contamination is always better than cleanup.

To legally recycle or dispose of a container at a landfill or with a container recycler, only properly rinsed containers can be accepted. Containers that are buried or burned on a private applicator's property must also be rinsed so a potential source of pollution is avoided. Commercial applicators must recycle or dispose of containers at an approved landfill.

Effectiveness of Rinsing

Proper rinsing of nearly all pesticide containers will remove over 99 percent of any pesticide residue remaining in the container. This should be done immediately after it has been emptied. Table 1 shows efficiency of container rinsing.

Table 1. Percent of pesticide residue remaining after proper rinsing with the different methods.

Pesticide	Container	Rinse Method	Wt. (gm) pure pesticide removed	% of Original Contents
Alachlor	5 gal metal	rinser	6.1	<0.1
Chlorpyrifos	2 gal metal	triple	1.0	<0.1
	2 gal metal	rinser	17.5	0.4
Carbofuran	1 gal plastic	rinser	3.1	0.1
Diazinon	5 gal metal	triple	0.3	<0.1
	1 gal metal	rinser	2.5	0.1
Parathion	2 gal metal	rinser	7.9	0.1
Trifluralin	5 gal metal	triple+1	0.2	<0.1

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How to Properly Rinse

Two different rinsing procedures are effective at cleaning pesticide containers: pressure rinsing and triple rinsing.

Pressure Rinsing — The simplest pressure rinser is a nozzle attached to the end of a hose to flush the remaining pesticide from small containers. Other types are available that are capable of rinsing small containers and barrels. A punch type pressure rinser is pictured (Figure 1). Pressure rinsing is usually faster and easier than triple rinsing and can be used with plastic and non-pressurized metal containers. Pressure rinsing is becoming the preferred method due to the use of more water that is directed under pressure against the inside of the container.

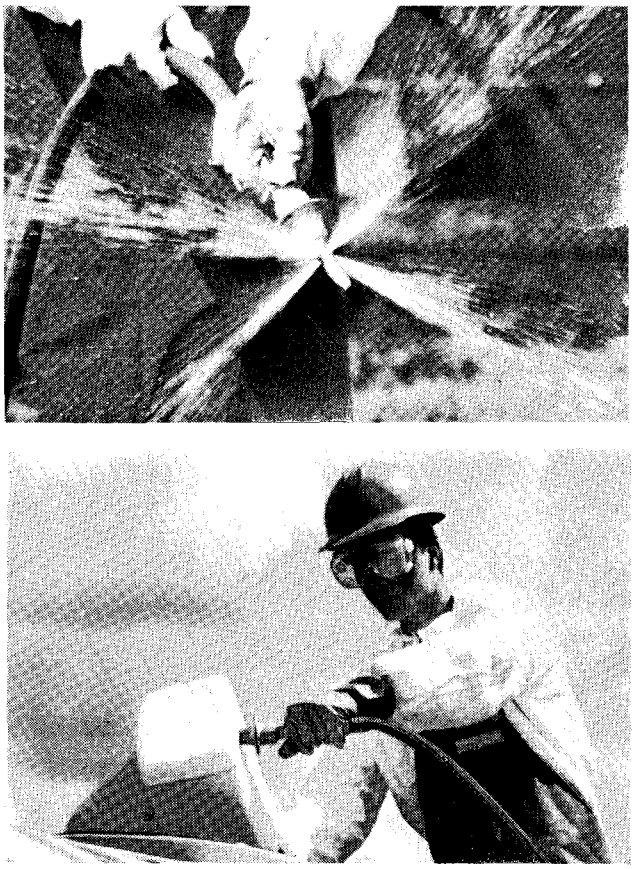

Figure 1. Punch type pesticide container rinser.

How to Pressure Rinse

1. Empty the pesticide into the spray tank and let the container drain for 30 seconds.
2. Insert the pressure rinser nozzle by punching a hole through the lower side or bottom of the pesticide container.
3. Hold the container upside down over the spray tank opening so rinsate will drain into the sprayer tank.
4. Rinse for the length of time recommended by the chemical manufacturer (generally 30 seconds or more). Rock or rotate the nozzle (Figure 2) to rinse all inside surfaces.
5. Inspect the container to be sure it is clean. Chemical may remain in corners, the handle and container opening threads. Also, be sure chemical on the container threads and drips on the outside of containers are removed.
6. Rinse covers separately in a bucket of water and pour rinse water into the spray tank.
7. Put cover back on the container and dispose of according to label directions. If containers are to be recycled, leave the covers off and remove the label. Store rinsed containers in a dry, secure area.
8. Containers (barrels) with the fill opening a short distance from the sidewall do not drain well. This can be corrected by punching a hole next to the sidewall with a hammer and chisel.

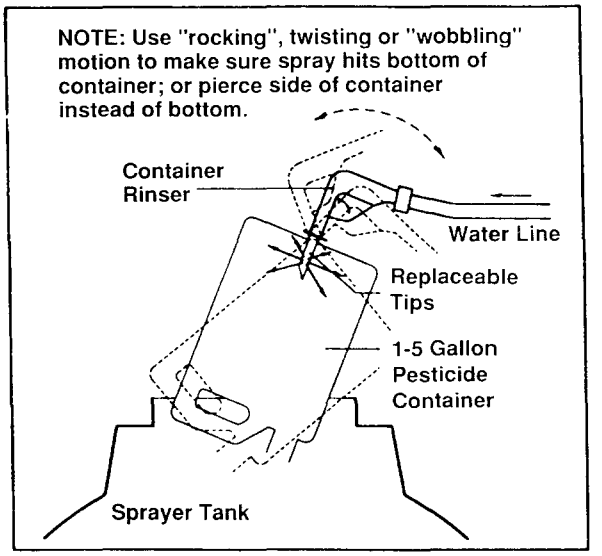

Figure 2. Pressurized water container rinse nozzle.

Pressure rinsers can be an integral part of a closed chemical handling system. Some chemical suction probes contain a pressure rinser so when a container (barrel) is emptied (Figure 3), the container is rinsed and the rinsate transferred to the spray tank. These units are designed to reduce potential danger of exposure to pesticide handlers.

Triple Rinsing — Triple rinsing is effective if done as recommended by the following procedure. If applicators ignore the last of the three rinses due to the time required, rinsing effectiveness is reduced. This is shown in Table 2.

Table 2. Pesticide left in a 5-gallon container after rinsing.

Stage	Residue Liquid	Residue Pesticide
Empty container	1 oz.	14.1875 grams
Rinse/drain 1	1 oz.	0.2183 grams
Rinse/drain 2	1 oz.	0.0034 grams
Rinse/drain 3	1 oz.	0.00005 grams

How to Triple Rinse

1. Empty the pesticide into the sprayer tank and let the container drain for 30 seconds.
2. Fill the container 10 percent to 20 percent full of water or rinse solution.
3. Put the cover on the container.
4. Swirl the container to rinse all inside surfaces.
5. Add the rinsate to the spray tank and let drain for 30 seconds.
6. Repeat steps 2 through 5 **two more times**.
7. Inspect the container to be sure it is clean. Chemical may remain in the corners, the handle and container threads. This must be removed. Also, be sure drips on the outside of containers are cleaned off.
8. Put the cover back on the container and dispose of according to label directions. If containers are to be recycled, leave the cover off and store in a dry, secure area.

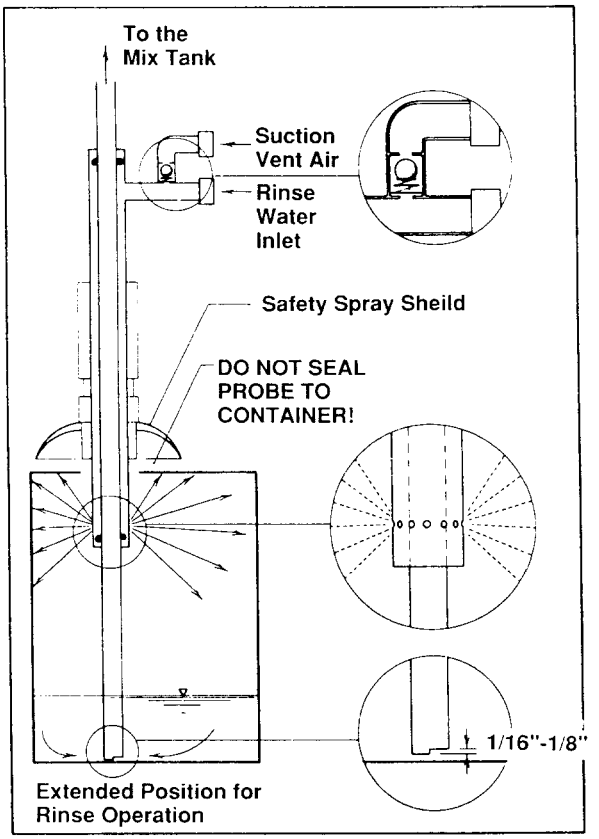

Figure 3. Suction probe with transfer and rinse system.

REMEMBER

- Read and follow all label instructions.
- Wear appropriate protective clothing when handling pesticides and "empty" containers.
- Never reuse a pesticide container for any purpose.
- Dispose of all pesticide containers properly.
- Always use a back-flow prevention device when filling sprayer tanks or rinsing pesticide containers.
- Mixing and loading sites should be at least 150 feet away from all water wells. Rinse containers where they will not endanger people, animals or the environment.
- If at all possible, deliver empty rinsed containers to a pesticide container recycling center. Used pesticide containers can be used to make new containers or used in other plastic products. This helps save resources and reduces disposal problems that may arise from burning or burying containers.

Some of the information for this publication was obtained from "Rinsing Pesticide Containers," Minnesota Extension Service, AG-FS-3771.

1. *Trask, H.W., "Empty Pesticide Container Management: An Overview," Pesticide Waste Disposal Technology, 1985, pp 106-11. Noyes Data Corporation, Park Ridge, NJ.*

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