The Facts on Triple Rinsing

By Dr. Fred Whitford

Editor's Note: *This article you are about to read comes from one of the richest lodes of information on agricultural matters in the world—the publications, articles and bulletins from the Cooperative Extension Services at America's land grant universities. If you are ever in Madison with a few minutes to spare, treat yourself to a visit to the agricultural bulletins room on the University of Wisconsin-Madison campus.*

Dr. Whitford's advice comes from the Purdue University Cooperative Extension Service. He is the coordinator of Purdue Pesticide Programs at that institution. Fred received a MS and a PhD in entomology from Iowa State University. With only a couple of pesticide applications remaining, you may want to make certain this article is saved for reference in 1993. It is a good one!

Pesticide labels direct turf managers to rinse each empty pesticide container, to incorporate the rinse solution back into the spray tank mixture, and to use the product according to the label. The triple rinsing of pesticide containers is a management tool that has weathered the storms of regulatory change for nearly 20 years. When implemented within a pesticide management program, this tried and true method reduces the potential for adverse environmental impact by converting pesticide containers from hazardous waste to solid waste. Additionally, triple rinsing ensures that all of the pesticide product is incorporated into the tank mixture, ensuring access to the total amount of product purchased and thereby providing the applicators their money's worth.

In an age when professional turf managers are overwhelmed by the explosion of scientific information, positive benefits from simple techniques such as rinsing residues out of pesticide containers are often overlooked. The consequences of not following label directions include monetary loss for each unrinsed container, potential contamination of drinking water by allowing improperly rinsed containers to be placed in a landfill, and legal ramifications from local, state, and federal regulatory officials. The consequences can be averted by taking time to manage containers properly.

Triple rinsing is defined by a 1974 federal regulation as the "flushing of containers three times, each time using a volume of the normal diluent equal to approximately ten percent of the container's capacity, and adding the rinse liquid to the spray mixture." Pesticide labels on metal, plastic, and glass containers refer to this federal definition when directing applicators to triple rinse or the equivalent. The following examples provide instructions that allow the consolidation of triple rinsing procedure into your pesticide management program.

TRIPLE RINSING PROTOCOL

1. The same personal protective clothing worn for mixing concentrate should be worn during the removal of pesticide residues from the containers.

2. The rinsing procedure should begin immediately after emptying the contents into the application equipment. Allowing the residue to dry in the empty container for even a few hours will reduce the effectiveness of this procedure.

3. Pour the pesticide into your spray solution and hold the container in a vertical position for an additional 30 to 60 seconds prior to the first rinse. This one step greatly enhances your ability to remove the residue during the complete triple rinsing process.

4. Add clean water (or other specified by the label) equal to 10 to 25 percent of the container's volume.

5. The container cap should be properly secured to prevent spillage. Shake or roll the containers so that the interior surfaces will be rinsed.

6. Apply the rinsed solution (rinsate) into your spray mix and allow the container to drain for an additional 30 seconds. This completes the first cycle.

7. Follow the procedures outlined in steps one through six.

This completes the second cycle.

8. Repeat steps one through six. A quick visual inspection of the container should indicate a clear rinsate. If the solution appears cloudy or milky, then repeat steps one through six until the water is clear in appearance. If thoroughly rinsed, your obligation for following the label directions for triple rinsing have been fulfilled.

9. If the pesticide is an emulsifiable concentrate (EC) or a liquid flowable (LF), a fourth rinse would be advisable.

10. The final step is to render all plastic and metal containers unuseable by puncturing or crushing.

11. It takes about five minutes to completely remove 99.999 percent of the active ingredient by the triple rinsing procedure.