

Cleanup Clues

Be prepared for post-application cleanup before you begin applying pesticides.

By Dr. Robert Belinger

After you've finished applying pesticides on your golf course, it's time to think about disposing of the containers, right?

Well, yes and no. Yes, pesticide containers do need to be disposed of promptly after application. But the time to think about container disposal is before application. In fact, you should think about it even before you buy the pesticide.

Container disposal can be a problem, but the earlier you start to manage the situation, the less of a problem it will be. The easiest containers to dispose of are those you have not yet purchased. Your future purchases give you the most container-management options.

Look at it this way: How do you select a pesticide? Your first consideration is probably the product's ability to effectively control a particular pest. Of course, the intended-use crop must be listed on the product's label. Other considerations include formulation, cost, re-entry interval, applicator safety and potential for contaminating surface water and groundwater.

However, you should also consider container disposal when choosing a pesticide. Plan a container-management strategy with the same care you give to your pest-management strategies. By carefully planning your pesticide-application needs, and buying only the amount of pesticide you need, you can reduce the number of containers you'll have to dispose of. Buying only what you need will also help you avoid having to store pesticides.

You can even go one step further. Consider the kind of container you're buying. Ask yourself some questions about the containers your pesticides come in, and then go out and get the answers. For instance, can the container be recycled in your area?

Ask your dealer, supplier, chemical sales representative or cooperative extension service about the availability of products that can reduce or even eliminate the need for pesticide-container disposal. And keep up with the trade journals for tips and success stories from others in your industry.

For many golf courses, the total elimination of containers may not be possible. When containers are still a fact of life, proper cleaning—with triple or pressure rinsing—is necessary before disposal. Properly washed, empty pesticide containers are considered solid—not hazardous—waste.

Clean pesticide containers as soon as they are emptied. Don't wait until you are done with your application! Rinse the container over the spray tank to collect the rinsate for re-use; the rinsate then becomes part of the makeup water for the application. After you've cleaned the containers, crush or puncture them to prevent reuse by others.

One option for emptying and cleaning containers is to use a closed system. These systems have advantages and disadvantages; it's best to investigate the possibilities carefully to see if there is a system to fit your particular needs.

Assume you've cleaned your containers immediately after emptying them. What's next? Get your containers to the appropriate solid-waste disposal facility as soon as it is practical to do so. If you can't get them to a disposal site right away, put them in a secure location—for instance, in the same place you store your pesticides.

Never leave any container—empty or not—unattended at the application site.

Pesticide labels usually give very general treatment to the subject of container disposal. This is necessary because specific requirements for container disposal vary from state to state, county to county, and community to community.

You may need prior approval to dispose of pesticide containers at your local landfill; check with the landfill operator. If you have a contract waste hauler who picks up your cleaned empty pesticide containers with your other solid waste, be sure he knows what he is hauling.

Clean containers may not carry any pesticide residue, but they often carry a stigma.

While container disposal is important, it's not the only cleanup that needs to be done. Your personal protective equipment must also be properly cleaned and stored. Wash rubber gloves, rubber aprons and protective eyewear as soon as possible with hot water and a heavy-duty detergent. Respirator manufacturers usually supply instructions on how to clean and disinfect their products.

Here are some pointers for laundering protective clothing that isn't chemical-resistant:

- Before laundering, store pesticide-contaminated clothing in a separate, covered container. A commonly recommended, easy and inexpensive method is to use a cardboard box lined with a disposable plastic bag. This will prevent transferring pesticides to other clothing.
- Rinse the articles, either in a washing machine or by hand.
- Wash pesticide-contaminated protective clothing separately from other clothing.
- Launder the protective clothing with a heavy-duty detergent and plenty of hot water; don't pack the machine. Moderately to heavily contaminated articles should be laundered twice, separately. (Unfortunately, while rinsate from containers can be reused, nobody has come up with a good solution for what to do with the water from washing contaminated clothing.)

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- Rinse twice with warm or hot water, if possible.
- After laundering your protective clothing, run the machine, unloaded, through a complete wash cycle with hot water and detergent.
- Line-dry your protective clothing, preferably outdoors. Using a dryer may eventually leave pesticide residue in the machine.

Now, here are some “don’ts” to keep in mind when cleaning contaminated clothing:

- If you spill a fairly large amount of concentrated pesticide—especially an emulsifiable concentrate—on an article of clothing that is not resistant to chemicals, don’t wash it. Remove the article immediately, place it in a plastic bag, and dispose of it according to the pesticide label directions.
- Don’t use a laundromat or a commercial laundry service to wash contaminated protective clothing.
- If possible, don’t allow contaminated clothing to dry before your pre-wash rinsing.

The Environmental Protection Agency’s Worker Protection Standard, which affects all farms, nurseries, greenhouses and forestry operations, contains specific minimum provisions for cleaning protective clothing and for informing those laundering your protective clothing of the potential hazards of pesticide residues (WPS, 40 CFR Part 170,240, Personal Protective Equipment).

The Worker Protection Standard sets the following specific guidelines:

- Any employer of pesticide handlers (the term “handlers” includes applicators) must ensure that all personal protective equipment is cleaned according to the manufacturer’s instructions or pesticide labeling instructions before each day of use. If there are no instructions, the equipment must be washed with hot water and detergent.
- Equipment that can’t be cleaned, or clothing drenched or heavily contaminated with undiluted pesticide that carries the word “Danger” or “Warning”, may not be reused and must be disposed of properly.
- Employers must ensure that contaminated protective clothing and equipment are stored and cleaned separately from other articles.
- Employers must ensure that clean personal protective equipment is dried thoroughly before it is put away, that the articles are kept separate from other personal clothing and that they are not stored in a pesticide-contaminated area.
- Employers must inform anyone who cleans or launders protective equipment and clothing that the articles may be contaminated with pesticides, and must inform them of the harmful effects of exposure to pesticides.
- Employers must instruct employees doing the cleaning or laundering in the proper procedures, including how to protect themselves when handling contaminated articles.
- Employers must provide a clean place to store personal clothing, and to put on and remove protective clothing and

equipment.

- Employers may not allow or tell any pesticide handler to wear home or take home any personal protective equipment or clothing contaminated with pesticides.

After you’ve made a pesticide application, pay close attention to properly cleaning and disposing of pesticide containers, and cleaning and laundering personal protective equipment and clothing. By following careful procedures, you will help make your golf operation safe—and legal—for yourself and your employees.

—American Nurseryman

The Pros & Cons of Closed Systems

Closed systems for applying pesticides usually work only with liquid formulations, but some handle dry formulations. Closed systems often open containers automatically, drain or pump the product out, and rinse the container. The rinsate is then drained or pumped into the spray tank.

Closed systems increase handler safety and can reduce the need for personal protective equipment, as well as the chance of spills. Also, because measurements tend to be more accurate in a closed system, you’re less likely to use too much or too little of the pesticide, and this can save money.

There are several disadvantages to closed systems, however. They are complicated and, initially, somewhat expensive. Some don’t allow you to use only part of the product, and some don’t allow resealing of a partially empty container.

Also, some closed systems are unable to handle a range of container sizes or styles.

In addition, closed systems may not be useful for some pesticide formulations or for the scale of your course operation. They are most useful for growers who use large quantities of pesticides.

GCSAA San Francisco Hotel Rooms Available Through NST

For those planning to attend the 66th GCSAA Show & Conference in San Francisco in February, it’s none too early to make your hotel reservations. As in past years, North Star Turf has secured a block of rooms in conjunction with the event.

A limited number of rooms remain available at the Sir Francis Drake for those interested. The newly renovated Drake is conveniently located seven blocks from the Moscone Center near Union Square. Contact Dan Miller or Joe Campbell at North Star Turf, 612/484-8411, for more information.