



# Pesticide:

# Safety Q & A

**W**hat are the three main commandments of dealing with pesticides? Safety! Safety! Safety! Safety towards oneself; safety towards others; safety towards the environment. Failure to follow published and common-sense safety practices eventually leads to harm, which in turn often leads to lawsuits.

The safest way to handle pesticides is not to use them at all, relying instead (whenever possible) on IPM or cultural solutions to pest problems. Unfortunately, sports turf undergoes so much stress that pesticides are almost unavoidable.

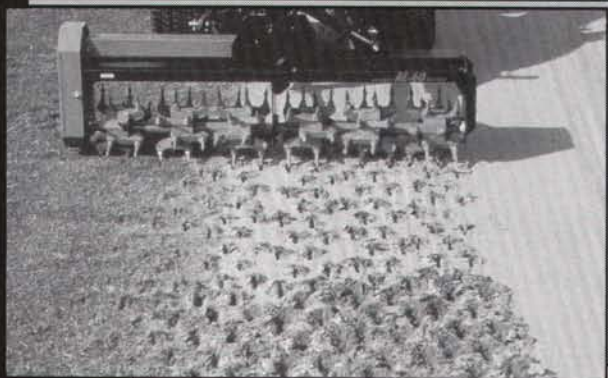
If you deal with pesticides either as an applicator or as a manager, test your knowledge of fundamental safety practices by taking the following quiz. It comes from the "Mixing, Loading and Application" section of the national pesticide applicator training core manual — *Applying Pesticides Correctly* — a book that is available for \$5, plus \$3 shipping, from the Environmental Programs Office, University of Nebraska, 101 Natural Resources Hall, Lincoln, NE 68583-0818; or free on the Internet at the following site: <http://ianrwww.unl.edu/ianr/pat/pat.htm>. If you cannot supply reasonably close answers to the ques-



**Applicators should always follow label guidelines for protective clothing, while remembering that some applications may require more personal protective equipment than the items specified.**

tions below, consult the manual or another authority for more detailed information. In other words, you best do some studying. Your life and livelihood, as well as those of others, depend upon your expertise.

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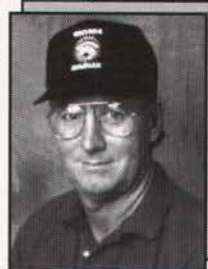
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### Test Your Knowledge of Mixing, Loading & Application

**Q-1.** What two precautions should you take to avoid getting pesticides into your water source at a mix-load site?

**Q-2.** What four types of personal protection, beyond what you need during application, should you consider wearing while mixing or loading pesticides?

**Q-3.** What should you do with an empty pesticide container?

**Q-4.** What types of empty pesticide containers can be rinsed?

**Q-5.** What two methods of rinsing can you use?

**Q-6.** What are three ways to help you decide whether you can safely mix two pesticides together for application?

**Q-7.** Name at least four types of pesticide application activities that might require more personal protective equipment than that specified on the pesticide labeling.

**Q-8.** What safety procedures should you follow each time you apply a pesticide?

**Q-9.** When you are finished with a mixing, loading, or application task, what should you do right away?

**Q-10.** What should you do with rinsate that you create when you clean your pesticide equipment?

**Q-11.** When you are finished with pesticide handling tasks, what steps should you take for personal cleanup?

**Q-12.** Why should you keep records of pesticide applications?

**Q-13.** What are closed mixing and loading systems?

**Q-14.** What are enclosed application systems?

**Q-15.** When should you consider installing a pesticide containment system?

**Q-16.** What are the advantages of pesticide containment systems?

### Answers

**A-1.** Two precautions to avoid contaminating water at a mix-load site are:

I. Keep the water pipe or hose well above the level of the pesticide mixture, and use a device to prevent back-siphoning, if necessary.

II. Avoid mixing or loading pesticides in areas where a spill, leak, or overflow could allow pesticides to get into water systems.

**A-2.** Four types of extra personal protection for mixing or loading are:

I. Front protection — a bib-top apron made of butyl, nitrile, or foil-laminate material; the style of apron that includes built-in gloves and sleeves is especially protective.

II. Face protection — a face shield to keep splashes and wafting dusts off your face and out of your nose and mouth. Or, if you need to wear a respirator, goggles or shielded safety glasses, which will fit better with a respirator than a face shield.

III. Protection from dusts — a dust/mist respirator with NIOSH/MSHA approval;

also wear eye protection, such as shielded safety glasses, goggles, or a face shield.

IV. Protection from vapors — eye protection and a vapor-removing respirator with NIOSH/MSHA approval.

**A-3.** When pesticide containers are empty:

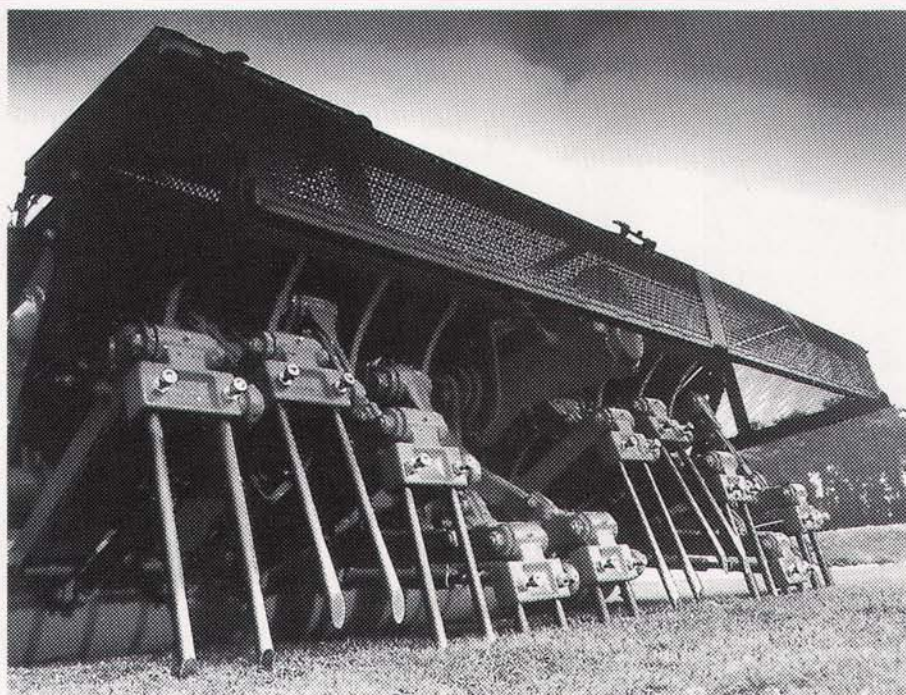
I. If containers are rinsable, rinse them as soon as they are empty. Remember, all liquid containers are required to be rinsed (the pesticide

that clings to the inside of the container can be dangerous).

II. Return all empty pesticide containers to the pesticide storage area or the container holding area when you finish your task. Do not leave them unattended at the mixing, loading, or application site.

III. Crush, break, or puncture empty containers that cannot be refilled,

*continued on page 26*



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## Pesticide

*continued from page 25*

reconditioned, recycled, or returned to the manufacturer. (This will make the containers unusable and may also save storage space.)

IV. Dispose of containers in accordance with labeling directions and with any laws or regulations that apply.

**A-4.** Rinsable pesticide containers are:

- I. Glass, metal, and plastic containers.
- II. Plastic-lined paper or cardboard containers.

III. Unlined paper or cardboard containers that can withstand the rinsing process.

**A-5.** Two methods of rinsing are triple rinsing and pressure rinsing.

•To triple rinse a container:

1. Empty the container into the tank. Let it drain an extra 30 seconds.
2. Fill the empty container 10-20 percent full of water.
3. Replace the closure and rotate the container for about 30 seconds. Invert the container so the rinse reaches all the inside surfaces.

4. Drain the rinse water from the container into the tank. Let the container drain for 30 seconds.

5. Repeat steps 2 through 4 two more times for a total of three rinses.

•Some pesticide equipment includes a mechanism to pressure rinse containers by (A) inserting a pressure rinse nozzle into the container, (B) rotating the nozzle and rinsing for at least 30 seconds, and (C) draining the container thoroughly into the mix tank.

**A-6.** Three ways to determine if pesticides can be mixed are:

I. Check the pesticide labeling. It may list the pesticides (and other chemicals) known to be compatible with the formulation.

II. Get a compatibility chart, which is available from several sources.

III. Test a small amount of the mixture before mixing large quantities of the pesticides together.

**A-7.** Application activities requiring extra personal protection include:

- I. Hand-carrying application equipment.
- II. Entering the path of the released pesticide.

III. Walking into a just-treated area.

IV. Using high-exposure application methods where the pesticide may engulf you.

V. Applying pesticides in enclosed spaces.

VI. Adjusting pesticide application equipment.

VII. Immersing hands and forearms in pesticides.

VIII. Applying into or across air currents.

IX. Applying concentrated pesticides.

**A-8.** Safety procedures during applications include:

I. Delivering the pesticide to the target site.

II. Checking the delivery rate.

III. Checking for appearance.

IV. Avoiding nontarget organisms.

V. Avoiding nontarget surfaces.

VI. Operating equipment safely. (Whenever you pause to take a break, to move to another site or to make any adjustments or repairs, turn off the equipment, and depressurize any pressurized tanks. Turn off the main pressure valve on the tank and release any pressure remaining at the nozzles. Also, check hoses, valves, nozzles,

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hoppers, and other equipment parts occasionally while you are applying chemicals. If you notice a problem, stop immediately and fix it.)

**A-9.** Immediately after mixing, loading or application:

I. Wash your pesticide equipment and then wash yourself.

II. Return equipment to its designated place.

III. Safely store or dispose of all pesticide materials and other chemicals that you have used.

IV. Be sure that your work site presents no hazards to people or to the environment. (Never leave the site unattended until everything has been cleaned up and put away. Carefully wash any vehicles that may be used for transporting unprotected workers or for family use. Do not allow rinsates to flow into water systems. Do not leave puddles that children, unprotected persons or animals could get into.)

V. Record what you have applied and the conditions at the application site.

**A-10.** After you create rinsate from cleaning equipment:

Collect the rinsate. Reuse it, if possible,

or dispose of it as excess pesticide.

**A-11.** During a personal cleanup after pesticide handling tasks:

Wash the outside of your gloves before taking them off. Then carefully peel back your personal protective equipment to avoid getting pesticides on your skin. Remove any other clothing that has pesticide on it. If you cannot take a shower right away, use a mild liquid detergent and warm water to wash your face, hands, forearms, and any other area that may have pesticides on it. As soon as you can — no later than the end of the work day — wash your whole body and hair thoroughly with a mild liquid detergent and plenty of warm water.

**A-12.** Reasons for keeping pesticide records are:

I. Records can establish proof of proper use.

II. Good records can save you money by improving your pest-control practices and your efficiency.

III. Records can help you reduce pesticide mistakes or misuse.

IV. Good records can help you reduce carryover by showing exactly how much was needed last time.

**A-13.** Closed mixing and loading systems are:

Systems designed to prevent pesticides from contacting handlers or other persons during mixing and loading. (There are two primary types: one uses mechanical devices to deliver the pesticide from the container to the equipment; the other type uses soluble packaging.)

**A-14.** Enclosed application systems are:

Enclosures, such as a cab, that surround occupants and prevent them from contacting pesticides outside of the enclosure.

**A-15.** You should consider installing a pesticide containment system:

If you often mix and load pesticides in one place, or if you often clean equipment at one location.

**A-16.** Advantages of pesticide containment systems include:

They can save time and money. They make spill cleanup easier, and they reduce pesticide waste by allowing reuse of rinse water and spill cleanup water. They also help prevent the harm that spills and runoff can cause to the environment or to people. □

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