

Handling Pesticides Responsibly

Pesticides are valuable to any integrated pest management program. However responsibility goes hand-in-hand with the benefits of pesticide use.

As a golf course superintendent, you need to protect yourself, your workers, your players and your community from possible injury. The way to do this is to know all there is to know about all precautions to take when applying chemicals that require safe application procedures.

Accidents will happen, but many accidents are avoidable. Most accidents result from careless practices or lack of knowledge about safe pesticide handling. Pesticides have four routes of exposure:

- **The Mouth.** Pesticides can come in contact with your mouth from your hands, food eaten with unwashed hands, cigarettes or other tobacco products, or splashes of pesticide.

- **The Skin.** Your skin can be exposed when you handle and open pesticide packages, adjust sprayer nozzles, contact spray mist, touch pesticide spills or broken hoses, wear pesticide-contaminated clothing or fail to wear adequate protective clothing and equipment.

- **The Eyes.** If you are not wearing eye protection, pesticides can get into your eyes from accidental splashes, pesticide blowing in the wind, or your hands if you rub your eyes without washing your hands first.

- **The Lungs.** Without protective equipment, pesticides can enter your lungs from inhaling fumes, dust or fine mist, from prolonged exposure to pesticides in poorly ventilated areas, from re-entering a pesticide-treated area too soon, or from using inadequate equipment.

PROTECTING YOUR BODY

You can help prevent pesticide exposure by wearing the right clothing and using the correct equipment. Follow all directions and precautions that appear on product labels.

Make sure all your employees understand what they should be wearing. Require them to wear protective equipment whenever they are handling pesticides.

The following are various items of protective clothing and equipment you should consider for yourself and your employees who will be handling pesticides.

- **Body Covering.** Always cover as much skin as possible with long-sleeved coveralls, shirts or pants. They should be clean, dry, and free of holes and tears. Collars and cuffs should fit snugly when you fasten them.

- **Gloves.** Liquid-proof neoprene gloves are recommended for handling liquid pesticides. The gloves should be long enough to protect your wrists. However, they should not be lined with fabric because fabric can absorb chemicals. Keep sleeves outside your gloves to help prevent chemicals from seeping down inside your gloves.

- **Hat.** A wide-brimmed hat will protect your neck, eyes, mouth and face. You also can attach a protective hood that attaches to special coveralls. The hat should not have a cloth or leather sweatband. Consider a plastic, liquid-proof hard hat that's cool in hot weather.

- **Boots or Shoes.** Neoprene boots are recommended when you handle large quantities of pesticides because canvas, cloth or leather shoes can absorb pesticides. Sturdy shoes and socks are sufficient for some lighter applications. Wear pant leg outside to keep pesticides from seeping into your boots or shoes.

- **Apron.** It's a good idea to wear a rubber apron when mixing and handling liquid pesticides. It gives you a lot of protection against spills, container leaks and broken hoses.

- **Goggles or Face Shield.** Wear eye protection anytime there is any chance of pesticides getting in your eyes. Eye protection is an absolute if you are mixing pesticides marked *Warning* or *Danger*. If you wear prescription glasses, use a face shield.

- **Respirator.** A dust mask is no substitute for a proper respirator. There are several types of acceptable respirators, with cartridge and canister types being the most common. Choose the correct respirator for the types of jobs that you are doing. Be sure the respirator is approved for pesticide use and that it fits the applicator. Keep the respirator clean and change filters regularly. Respirators may feel uncomfortable, but they're good insurance.

PESTICIDE HANDLING PRECAUTIONS

Make safety part of your regular routine. Train your employees to follow safe practices. Don't let new hires handle pesticides until you are sure they understand and will follow correct procedures.

The following are some special precautions you should consider making part of the routine procedure.

- What you wear to handle pesticides should be used for this purpose only.

- If your clothing becomes contaminated, change immediately. Don't wait until you've finished the job.

- Always wear neoprene gloves when you handle and rinse contaminated clothing.

- Wash clothing and protective equipment daily. Always wear clean clothes each day.

- Empty all pockets of any pesticide granules outside.

- Keep contaminated clothing in containers separate from all other laundry and always wash contaminated clothing separately.

- Test gloves for leaks by filling them with water and gently squeezing. If you find leaks, get a new pair of gloves.

TAKING CARE OF SPILLS

Despite the best precautions, accidents do happen. Make sure your employees understand how to handle a pesticide emergency. Post lists of emergency procedures in easy-to-find locations. Keep a copy of procedure in all trucks.

The first thing to do in a pesticide emergency is don't panic. Call the local fire department and state pesticide authorities immediately. Seek first aid for anyone injured.

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Irrigation Expansion – Pebble Creek Rough

By **CARY FEMRITE**

Pebble Creek Head Superintendent

It was Fall of 1989. After enduring two years of severe drought, reseeding 75 acres of rough, losing our primary water source and drilling a new well, we finally decided to expand our irrigation system. With concerns of future water restrictions, limited well drilling and added costs in the future, the city council was convinced the expansion was justified. If you are presently considering expansion or are under new construction, hopefully this article will answer some questions or help you determine your needs.

Since the original system was Toro, it was agreed upon to expand with similar equipment. I conferred with our Toro representative and reviewed the existing system to arrive at expansion cost estimates for budgeting purposes.

Pipesizing coming out of the pumphouse was substantial enough to adequately increase pumping capacity without repiping the mainlines. A 40 h.p. centrifugal pump was added to the present 40 h.p. and 20 h.p. system. This brought total pumping gallonage to 850 g.p.m. We added another wet well to reduce the change of a vortex through increased drawdown from pumping.

From this point we proceeded to determine coverage on all non-irrigated areas. Footages were measured from perimeters to existing lines to determine tie-ins, isolation valves and accurate head location.

Existing utilities were noted and sleeving locations under cart paths were highlighted. Sleeving is an added convenience during installation which aids future repairs. Consideration must be made to provide a slight bend creating side pressure in the sleeve because piping tends to vibrate inside the sleeve. Pipe sizing was laid out and double checked for correct pressure at perimeter locations. When the design was finalized and approved, the bidding process commenced.

The specification process is detailed and all areas of concern must be noted. Areas for concern are as follows:

- Previous contractor projects and references.
- Insurance and bonding.

- Crew size and foreman names.
- Starting and finishing dates.
- Penalty clause.
- Unit prices on materials list.
- Determine single or double head control.
- Approval of head locations.
- Power sources access.
- Change order process.
- As built design.
- Contractor warranties.
- Trench compaction.
- Pressure testing.
- Pump operation.

There are many additions to this list that can be specific to your needs. If you have additional projects like trenching or fountain wiring, you get prices on these also at bidding time.

After it was all done, 27,000 lin. ft. and 345 heads were installed. There were 20 areas where additions or deletions were determined. Gate valves were added, heads were relocated and piping was added. Total cost of the project was approximately \$170,000 or \$290.00/head for materials and \$158.00/head for labor. The project lasted approximately 4 weeks.

Areas of concern that needed to be communicated are glueing of tie-ins so as not to hinder watering cycles. The majority of glueing was done in the a.m., so glue would set up throughout the day.

The golf course enjoyed the benefits and versatility of the expansion immediately as we were able to water in newly fertilized rough areas and speed the grow-in. We even expanded our injectables such as wetting agents and liquid fertilizers. The benefits far out-weigh the costs. Our concerns include planning, budgeting and day-to-day monitoring during installation, plus becoming comfortable with the increased maintenance and operation.

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Try to contain spills by using a chemical spill absorbent. Keep people away from the area.

Chemtrec (Chemical Transportation Emergency Center) has a toll-free number (800-424-9300) that you can call day or night for help in chemical emergencies involving spills, leaks, fires or explosions.

The responsibility you and your employees show helping to prevent accidents and handling any problems that do arise will have a direct effect on how you are perceived in the community. A well-prepared staff will reflect well on you and the pesticide application industry.

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