Wall-to-Wall is a Term

When it comes to spraying chemicals, th

BY JOEL D. JACKSON, CGCS

Anyone managing a golf course in today's world should have a pretty sound foundation in the rules, regulations, safety, application methods and products involved.

Don't be too surprised if you don't find the silver bullet to solve all your problems in the following pages. What you will find is the shift to more environmental awareness in terms of how pest problems are solved and chemicals applied.

The message is loud and clear. Less is better and wall to wall is mostly a term used only in carpet sales.

1 Describe changes made to your overall spraying program to maximize Intergrated Plant Management (IPM) priniciples and minimize the use of chemical products.

Due to the amount of time and repeat chemical applications necessary for effective goosegrass control, 90 percent of our goosegrass is hand-pulled using weed "poppers" or weed forks. For maximum efficiency we use the specified spray tips for the compound being applied, i.e. flat fan tips for fungicides; flood jet for insecticides.

Scott Whorrall

On both Bonnet Creek courses we have increased the use of our 15-gal. electric sprayers whenever possible. Using a spot treatment approach rather than a broad band spray boom application reduces the amount of chemicals used and puts the product only on the actual target.

Last year we used less than half the amount of Orthene from the previous year due to our fairway application of Chipco Choice for mole cricket control. The fairways are still free of mole cricket damage. This seems to be a great IPM tool due to the low amount of active ingredient per acre if you can afford it. We are looking at expanding the treatment into some of the rough areas this year.

Doug Higgins

I have been doing a lot of spot spraying lately with a 3-gallon pump-up sprayer. I am using 3 oz of Illoxan with some spreader sticker and dye to treat crabgrass and goosegrass. It takes about two weeks to kill the weed, so be patient.

I have heard you can use Sencor to do the same. You use 1 oz of Sencor in four gallons of water and spray only the center of the plant. It also takes one to two weeks to die.

We just bought a 14-gallon electric sprayer to make our spot spraying more efficient. We put it in the back of a golf cart and run the sprayer off the cart batteries. The pump only needs 12 volts so the cart doesn't run down.

Jim Goins

2 Describe chemical storage, housekeeping, record keeping procedures, saftey, mix and load site management procedures.

All our chemicals are stored in a rain-tight room which is part of the metal main maintenance building. It has spark-proof electric exhaust vents on the roof to mimimize fumes.

The concrete floor is sloped to a spill containment area that can be pumped out. All chemical containers are lableled and stored on metal shelves with dry powder materials above liquid materials. Large and heavy bags and barrels are stored on pallets.

Whenever chemicals are applied, records including date, location, product name, rate, total area treated, total amount of product used, method of application, and applicator's name.

Personal safety equipment requirements are followed per label instructions. Mixing and loading and wash down are done in multiple remote field locations in the roughs as much as possible since the turf is a great filter.

Doug Higgins

3 Discuss make, model, size, capacity of all spray equipment you use. Do you use a walking boom for the greens?

We use a Toro Multi-Pro 5500 with

n for Carpet Salesmen!

e message is loud and clear: 'LESS IS BETTER'

a 300-gallon tank for all our boom applications and a Spray Hawk (walking boom) on our winter overseeding. We have a Lesco 100-gallon tank mounted on a utility vehicle for our aquatic maintenance. We also use a Lesco 15-gallon electric sprayer for spot treatments and a 1-gallon hand sprayer for even smaller jobs in tight areas.

Scott Whorrall

For about the first year, we used walking boom sprayers on the greens until the surfaces firmed up. We currently use a 150-gallon Hahn sprayer and a Raven controller.

When spraying greens we normally only use 75 gallons of water per tank to keep the weight down to minimize tire marks usually resulting at greater weights. Insecticides and fungicides are the only products used in this sprayer. For herbicides and other miscellaneous spraying we have a 200-gallon tank mounted on a Toro Workman also with a Raven controller.

Doug Higgins

4 Discuss the type of nozzles you use and how you manage drift control.

We use Driftguard Flat fan nozzles to apply systemic fungicides and herbicides, Delvan Raintips for less drift and we add Windcheck drift-control product as needed.

Scott Whorrall

Both of our boom sprayers are equipped with Delavan #15 cone nozzles. These deliver a nice coarse spray for "windy" conditions. With the Raven controllers, rates can be changed with the push of a button. This is especially good when weight, wind or water volume per acre is a concern.

Doug Higgins

5 Discuss some of the successful tank mixes you have used. Give the problem target and product, rates, and frequency and timing of applications.

We have been using a broad spectrum preventive program on our bentgrass overseeding that has given us excellent 21-day control at reduced product rates over longer periods. Our tank mix is Chipco 26019 at 2.0 oz/M or 2 gal/A plus Cleary's 3336 at 1.2 oz/M or 1.25 gal/A plus Daconil 2787 at 4 oz/M or 4 gal/A. (M = 1,000 sq.ft.. A = acre.)

We also rotate standard label applications of Alliette, Subdue, and Banol every 21 days for pythium control.

Scott Whorrall

Tank mixes that have been successful for us include MSMA plus Lesco Threeway when we have enough broadleaf and grassy weeds present together. I've found that 2 pints of Basagran per acre plus 4 to 8 oz of Image per acre works well on purple nutsedge in Tifway 419. Two applications may be necessary. At those rates, keep it off of Tifdwarf.

We have had great success on mole cricket hot spots with Orthene at 3.5 pounds per acre plus M-Pede at 1 quart per acre.

Doug Higgins

6 Discuss your most successful methods for dealing with hydraulic fluid leaks on turf.

Sod!!

Scott Whorrall

We flush hydaulic fluid leak trails with a soap solution to move it out of the root zone to aid in recovery, but the damage is usually already done. The quickest most successful way to remedy large visible damaged areas is to re-sod.

Doug Higgins

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Spray Program on a Public Course

Blanket Application is a Thing of the Past

Since we are a public golf course, we have to be careful and selective when making a decision to spray any chemicals, especially on greens and tees.

Fortunately our early morning players are regulars who understand what we are doing. I think the biggest change over the years in spraying is spot treatment of an insect, weed or fungus.

The overall blanket application has hopefully become a habit of the past.

I have at least three employees who can spot a potential problem starting to occur and report it to me.

Bob Farrington, who has been here 21 years, knows the course as well or better that myself. Bob and I have our Commercial Use Pesticide licenses and do all the necessary spraying.

Bob Keeth, a retired superintendent, works part time mowing greens, fairways and green and tee banks. He is another set of experienced eyes to catch anything happening to those areas.

Steve Brown, another employee who has been here over 18 years, has also learned what to look for.

All of our spraying is done with an 85-gallon tank and John Bean R10 pump mounted on a Jacobsen T2000 truckster. Our unit is calibrated to cover 50,000 square feet. We use 8004VS flat fan nozzles on a 15-foot dry boom with shut-off valves on each side unit.

We feel this set up gives us adequate water for good coverage and not much drift problems at 35 pounds per square inch of pressure.

When we calibrate for our 2-acre coverage rate on fairways for Primo or other chemicals, we have enough water per acre to meet most label requirements so we don't have to recalibrate very often.

We keep some granular fungicides and insecticides on hand so if it is too wet for our spray rig we can spot treat as needed.

Joe Ondo applies mole cricket bait only where needed. File photo by Joel Jackson.

Our chemical storage area is in a corner of our maintenance building in a separate room. The room has a cement floor, block walls and steel shelving for all our products.

We have been using a pesticide application log printed by FMC the past few years so all we have to do is fill in the blanks after each application. We also keep a separate daily diary of all work performed for our records.

Mix, load and wash-down is done on a cement pad next to our shop and all rinsate is sprayed back on the course on labeled target areas in fairways or roughs.

Some of the tank mixes that have been successful for us are Basagran at 1 ounce per 1,000 sq. ft. along with 2 pints of MSMA per acre for sedge and crabgrass. Sometimes we don't have to come back with a follow-up treatment, but if we do there's usually not that much to retreat.

When we had a larger weed problem, a mixture of 2 ounces of Sencor plus 2 1/2 pints of MSMA and 1 pint of 2,4,D with a spreader-sticker was very successful.

The last few years, we have been using one wall-to-wall application of Barricade pre-emergent herbicide on a fertilizer carrier in the fall. We follow up as needed by spot treating post-emergent weeds as needed. This has worked very well for us with good results.

I found I was having more transition problems in the spring when we used a pre-emergent while the turf was trying to recover from winter traffic, so we eliminated that application.

When a granular fertilizer is about to run its course on greens and tees, we will use 4 ounces/1,000 sq.ft. of Ferromec and 2 ounces/1,000 sq.ft. of iron to keep the turf going until the next granular application starts to work.

Serious hydraulic leaks are few and far between since we have used the red dye in all our equipment. If we do get a severe leak on the greens, we use Aabsorb oil which works fairly well or we just go ahead and replace the damaged strip with sod from our nursery.

Some new products for hydraulic leaks at the GCSAA Trade Show looked promising. I asked them to send me more information.

New chemicals and products are constantly changing our maintenance practices so call around and ask what is working best for other superintendents and give them a try.

Joe Ondo, CGCS
Winter Pines GC

Planning, Prevention and Spot Treatments Are Key to IPM

BY BRIAN LENTZ, GCS
DeBary Golf and Country Club

Our spraying program is most likely the same as most clubs. We have a limited budget so we have to use our pesticides wisely.

We start in November with the preparation of the budget. Without allocating the proper funding, it's hard to implement an IPM program.

We start with known expenses: Ronstar application for the roughs in March; limited Chipco Choice applications in May; Dursban bait application in early August and pre-emergent control for the overseeding in October. We try to assess the rest of the products we will need from last year's application records.

Our IPM program changes drastically from year to year, depending on how successful our efforts were the previous year. If we had good results from the Ronstar application in the roughs last year, we may only spot treat the roughs this year. The Chipco Choice worked so well last year in the fairways that this year we're treating the roughs instead.

These days we rarely put out a preventive fungicide treatment. The greens are scouted daily and we train employees to spot problems before they get out of hand.

When infestations are detected, other areas throughout the course are checked to see if we can treat just the infected greens or tees or if we should treat all 18.

The easiest program to implement was for sod webworms.

We have several greens that are checked regularly; we know that if these greens become a host, the rest are sure to follow. We try our hardest to limit pesticide applications as much as possible. With the owner's support of our programs, it's easier to endure some damage every now and then.

Spot-spraying is a vital part of our program. My assistant and I both have three sprayers mounted on our carts: one 15-gallon electric, one 2-gallon pump-up and a 1-quart handheld sprayer.

We use the 15-gallon sprayers according to the season. In the spring we may have it loaded with Trimec to treat the hard-to-pull broadleaf weeds.

In the summer we may use a different mix each week: Roundup for the large landscape beds; MSMA for some crabgrass that made it past the Ronstar application; or some insecticide to treat a bunker face that has a few worms.

The 2-gallon sprayer is used for mole cricket control on the greens, using a mixture of 8 oz of Down-n-Thru and several drops of Oftanol to the 2 gallons of water. The mix is then injected into each burrow. We generally get 90 percent control and can keep the cricket damage to a minimum with both of us checking the greens weekly.

The 1-quart sprayer filled with 1 tablespoon of Sencor and dye as needed is our biggest asset. The goosegrass barely stands a chance with this mixture and one jug of Sencor has lasted four years.

We treat each plant with a small squirt and recheck the treated areas weekly for plants we may have missed during our daily routine . The dye helps to prevent treating the same plants twice and indicates which ones we may have missed the first time around.

For our large-scale broadcast applications we have a 120-gallon Broyhill sprayer mounted on a three-wheeled Cushman with a dry boom. We switch among three different nozzles depending on the application.

The Twinjet 8005 nozzles work great for contact fungicides and herbicides. The standard 8005 and 8006 flat fan nozzles fill our remaining requirements depending on the gallons per acre and the wind conditions.

The sprayer is calibrated before each use and fully rinsed after all applications. The rinsate is sprayed on the back of the driving range or in nearby landscape beds according to labeled uses.

Our chemical room is limited in size, so we try not to keep too much product. All shelving is steel and all dry formulations are stored above the liquids. There's 4-inch lip built into the entrance of the room to prevent any spillage from escaping; a ventilation fan runs continuously.

Only three persons have access to our chemical storage area: the superintendent, assistant superintendent and the spray tech. The room is equipped with a self-locking door preventing it from accidentally being left open. All safety equipment is stored in the maintenance shop away from the chemical room.

Our spray records are kept in a 1-inch, 3-ring binder that is clearly marked for the current year. A new folder is made for each year and is colored differently to distinguish the year easily.

We keep the old folders in my office next to the MSDS file, which is a 5-inch thick, 3-ring binder.

We also keep a copy of C&P 's *Turf and Ornamentals* handy in case we're missing any MSDS's. DTN now has MSDS's available on their system .

The DTN weather system service is a very important part of our program. It's nice to be able to glance at the radar to see if it's worth making an application. There's little point in spraying if it's going to rain in the near future.

We've been fighting nutsedge on our greens for several years by mainly hand spraying with Manage. The amount of time it took to monitor and hand spray each green became overwhelming. We decided to boom spray all 18 greens with the Manage last summer and the results have been outstanding. We may need one or two more applications to eradicate the weeds. We have seen no adverse effects on the bermudagrass.

Another outstanding product we incorporate into our spray program each year is Award Fire Ant Bait. We make two wall-to-wall applications, one in the spring and another in late summer. We have yet to have a problem with fire ants and rarely need to spot-treat mounds with powders or drenches.

Planning is a key to any IPM program, whether it's for budgeting purposes or scouting for problems. After working at DeBary for four years, it's easier to anticipate the seasonal pest problems and where those problems are going to occur. Longevity at a club helps to build a solid program and ensure its success. It's hard to plan for future problems if there is no history to build from.

Super Tip

Taking An Extra Step Can Save You Time!

Blowing Off Clippings Before Washing Saves Water, Wash Time

DARREN J. DAVIS, GCS
Olde Florida Golf Club

There seems to be a growing trend among golf course managers in Southwest Florida. They are building and maintaining organized state-of-the art turf maintenance facilities.

This affords further proof that the "old barn" is a dying object in today's more advanced world of golf course management.

When these new facilities are being constructed, another trend is also surfacing, that is the trend of golf course superintendents becoming even more exceptional stewards of the environment. One area that superintendents are becoming more competent in this regard is water conservation.

Matt Taylor is the golf course superintendent at the new Tom Fazio-designed Cypress Golf Course in northeast Naples. The Cypress Course is one of two 18-hole tracks that together will be known as Bonita Bay East.

Matt is also the proud manager of the newest modern turf maintenance facility in the Naples area that was built to house the maintenance operations for his two golf courses.

One of the features Matt has installed at his facility is a blow-off station at the entrance to his equipment wash-down area. Matt's intention of the blow-off station is to have his equipment operators use the compressed air to blow turfgrass clippings from the equipment prior to washing the machine with water.

Matt explained, "Not only do we conserve water but we also save valuable time. The clippings are certainly much easier and quicker to remove from the machine when the are dry."

When asked if his employees have expressed any objections to the added step Matt responded, "Absolutely not. In fact they enjoy using the compressed air, they are able to perform the same necessary job as before and they even stay drier.

"Even though the blow-off station adds another step to the cleaning process, it decreases the labor needed to keep the equipment-wash-down area clean."

Matt was referring to the fact that since the clippings are blown on a pad prior to entering the wash down area, there is a decreased need to shovel away mounds of wet, stinky clippings from the wash-down area.

According to Matt, "That certainly helps improve employee morale!"

Only an OSHA-approved nozzle should be used on the hose and, when using the system, all the operators should wear safety glasses.

Blow-off stations can be fabricated in a variety of shapes and styles. They can be as simple as a bundle of hose plumbed into a compressed air source, or they can be made a little more sophisticated by utilizing retractable hose reels.

Regardless of the size or shape of the blow-off station, there are a few safety features that all of the systems should definitely incorporate.

Only an OSHA-approved nozzle should be used on the hose and, when using the system, all the operators should wear safety glasses. It would also be a good idea to post a warning sign declaring this requirement.

Basic blow off station at the new Tom Fazio designed Cypress Golf Course in Naples. Photo by Darren Davis.

A slightly more advanced blow-off station utilizing a retractable hose reel, a warning sign, and a safety glasses holder. The shovel mounted behind the support pole is used to clean up any build up of clippings in the area. Photo by Darren Davis.