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The cornerstone of your turf management program.

continued from page 60

Shoot growth can also be retarded by high rates of lime applied to established turfs growing on strongly acid soil.

It is best to apply lime when grass leaves are dry, so the material will sift down to the soil. Watering immediately after spreading not only washes the dust off the leaves, but also carries the material onto moist soil where its action can begin.

Lowering pH—Soils that are waterlogged, rarely leached, irrigated with water containing calcium and magnesium,

or limed excessively can develop moderately alkaline pHs of 7.5 to 8.4.

A decline in turfgrass vigor usually occurs on alkaline soils. High pH may result in symptoms of lime-induced chlorosis.

Alkaline pHs (above 7.5) can be corrected by applying an acidifying material: elemental sulfur, gypsum (CaSO_4), certain fertilizers such as ammonium sulfate and iron sulfate, or aluminum sulfate. The last, however, can be toxic to turfgrasses if not properly used.

Elemental sulfur can be applied in a mix with sand or topdressing material. The rate of a single application should not exceed 5 lbs./1000 sq. ft. Do not apply sulfur during mid-summer stress periods.

—Sources: "Turf Management Handbook" by Howard B. Sprague; "Turfgrass: Science and Culture" by James B. Beard; "Practical Turfgrass Management" by John H. Madison; and "Lawns" by

Making turf diagnosis easier

■ The Plant and Pest Diagnostic Clinic (PPDC) at Ohio State University recently published this list of the top 10 factors you should include when writing or calling a college or university about a turf problem:

1. List all symptoms. Describe the general appearance of the turf. Does it look waterlogged, dried or scorched? Have any patterns or color changes occurred? A clear color photograph is the best visual aid.

2. Pattern of development. Does the problem appear in full sun or shade? Do the affected areas occur near irrigation lines, high traffic areas, sidewalks or buildings? Does it occur in low, moist places?

3. Amount of turf affected. How much of the lawn, green or field is affected? Do lawns nearby show similar symptoms?

4. Crop. Please list grass varieties planted, so consultants can determine which grass is more affected by the pathogens.

5. Seeding date. Was the lawn seeded or sodded recently, or is it a mature lawn?

6. Time of infection. When did symptoms first appear? What were the weather conditions prior to symptoms? Did the condition worsen coincidentally with an environmental or cultural change?

7. Treatments. When, at what rate, and what chemicals or fertilizers were applied? Was the grass irrigated before or after treatment? Send any samples of turf before fungicide applications were made. Fungicides prevent or impair culturing results.

8. Irrigation. Specify frequency, amount and time of day that irrigation is applied, if any.

9. Cultural practices. Was the turf aerated or topdressed? When? Did the problem occur afterward? How long afterward?

10. Environment. What amendments have been added to the soil? Include the results of recent soil tests, if applicable.

Key to long-lived landscapes: the right plant for the right spot

■ Whether soil is too wet, too dry, too shady or too steep, there are beautiful, hardy plants that will thrive in these conditions.

"The trick to a low-maintenance, long-lived landscape is selecting plants best suited to grow in the climate and soil conditions," says Dr. J. Robert Nuss of Penn State University.

Overly wet soils occur in low-lying areas and are produced by springs, a high groundwater table or nearby ponds or streams. "Wet areas can support a wide range of exotic plants, many of which grow nowhere else," Dr. Nuss

observes.

For clayey soils, he recommends coltsfoot, Siberian iris, perennial sweet pea, red maple, American hornbeam, pin oak or arborvitae.

"If you want to grow annuals in clay soil, you will need to work in a generous amount of organic material," he says. "Unless you're willing to spend time adding a lot of organic matter to clay soil, it's best to stick with plants whose roots easily penetrate clay."

Other plants to use for specific growing conditions are listed in the adjacent chart.

PLACING PLANTS APPROPRIATELY

WET, SHADY AREAS

impatiens
sweet alyssum
scarlet sage
blue sage
verbena
wild iris
many violets
many wildflowers
alder
dogwood
pussy willow
weeping willow
magnolia
mountain laurel

DRY, SHADY AREAS

columbine
lily of the valley
bleeding heart
balloonflower
daylily
boxwood
false cypress
holly
hemlock
pine
yew
barberry
cotoneaster

SUNNY, DRY AREAS

marigold
zinnia
four o'clock
geranium
cosmos
yarrow
butterflyweed
daylily
lupine
oriental poppy
many orn. grasses
prickly pear cactus
crownvetch
sedum

Source: Dr. J. Robert Nuss

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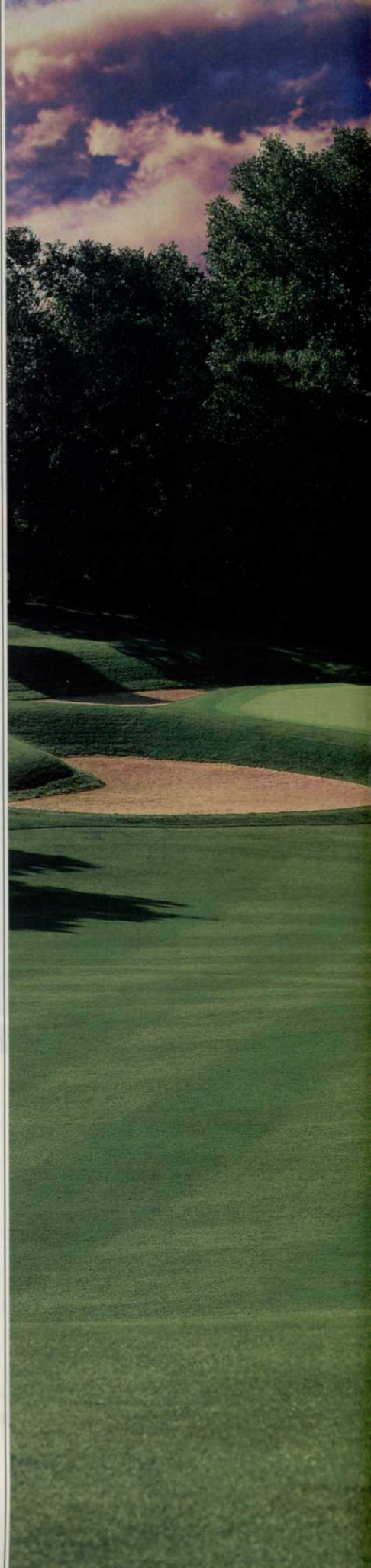
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LAWN CARE INDUSTRY

Pre-emergents applied early in spring give good control, too

Proper fertilization and mowing allow turfgrass to out-compete crabgrass, but sometimes pre-emergents needed.

■ Most LCOs would be tickled if they could apply a pre-emergent about two weeks prior to crabgrass germination. That way the material would be in place to kill emerging seedlings and still, probably, be active through the 8- to 10-week period of additional crabgrass germination.

LCOs usually can't be so precise with



No wonder homeowners hate crabgrass in their lawns. (photo courtesy Monsanto)

applications. Routing pressures won't allow it. They have to treat some lawns much earlier in the spring.

Not to worry, says Dr. Clark Throssel, associate professor of agronomy at Purdue University. Pre-emergents applied earlier in the spring, when soil temperatures are low, should still be effective when the crabgrass germinates.

The reason: soil microbes don't start breaking down pre-emergents until the soil temperature rises. Crabgrass, a prolific seed producer, starts germinating when soil temperatures climb to around 55-60° F. for three to five days in a row.

"Once that seed starts to germinate, its development occurs rapidly and your opportunities, particularly using pre-emergence herbicides, to control crabgrass vanish very quickly," explains Throssel.

Crabgrass is one of the home lawn's biggest curses and the LCO's biggest enemies.

It germinates later in the spring than most other plants. (In the far south it can germinate year-round.) Although the first frost signals its end, in the dog days of summer, when the sun is high and hot, crab-



Clark Throssel: properly mowed, fertilized, watered turfgrass will crowd out crabgrass.

grass is one of the toughest, most defiant weeds in the lawn. From a homeowner's viewpoint it's an ugly sight—squat, spreading, broad-leafed, and light green.

The best longterm strategy for keeping it at bay is proper fertilizing, watering and mowing. Crabgrass won't germinate in the shade of healthy turf.

"Keep the mowing height up," advises Throssel. "It creates a dense turf which shades the soil surface and reduces the amount of (crabgrass) seed that germinates. It makes the turfgrass more competitive with the crabgrass plants."

Even so, just about any appearance of crabgrass in lawns is unacceptable to most homeowners. That's one of the big reasons they hire lawn care professionals.

Throssel spoke about crabgrass at the PLCAA Convention this past November.

—Ron Hall

Tips for better product applications

■ So you've been a lawn applicator a few years and you think you're a hotshot.

Even so, you probably need a refresh-er. Now, as the season starts, is a good time for it.

That's not to say that what you're doing is wrong. No two applicators have exactly the same spray/spread techniques. Likely, all you'll have to make is slight changes in your application technique, or adjustments in your delivery equipment.

"We tend to become very complacent in our application techniques. We don't



Pre-season practice session, spraying water over your parking lot, good way to sharpen application skills. (photo courtesy TruGreen/ChemLawn)

really focus on this," says TruGreen/ChemLawn regional technical manager Bob Avenius.

In fact, Avenius advises that when a particular product isn't giving the results it should, examine first how the product is being put down.

Common spray application faults:

- putting down too much product in trim areas and on turns,
- not overlapping during passes over the lawn,
- over-pressurizing backpack sprayers,

continued on page 69

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Newer products give additional crabgrass control options

Flexibility. That's what several of the newer herbicides give turfgrass managers in controlling annual grassy weeds, says Fred Haskett of the J.C. Erlich Co. in Reading, Pa.

The products are:

- **fenoxaprop-ethyl**, a post-emergence herbicide, introduced several years ago and marketed under the trade name Acclaim, and,

- **dithiopyr**, with both pre- and post-emergence activity and sold as Dimension.

Haskett, the company's lawn & tree division manager, says these materials "add another tool and lessen our dependence on the methods we used in the past." They don't, however, eliminate the use of pre-emergence products, he stresses. The Pennsylvania company uses Acclaim to deal with two situations, says Haskett:

1) where a pre-emergent failure necessitates a retreat to satisfy a customer, and

2) on a mid-summer sale to a new customer whose property has a significant crabgrass problem.

He says Acclaim effectively controls germinated crabgrass up to



Haskett: encouraging results from tests.

Tips (continued from page 66)

- not holding the nozzle at the correct height off the turf,

- walking too fast or too slow.

Technicians using granular product are sometimes guilty of:

- not checking spreader settings,

- not filling their spreaders with enough material or too much material,

- not using a spreader shield or cover,

- holding the handle of the spreader so high that the box isn't level,

- walking too fast or too slow,

- not walking in a straight line.

Avenius says faulty application techniques are usually easy to correct, but first they have to be identified. Videotape is often an excellent help.

Want a down-and-dirty check on how you're doing? Spray water over your company's asphalt parking lot, just like you're making an application on a lawn. Then calculate how much water you've applied and what the pattern looks like as it dries. That way you get to see where there's been too much applied or too little.

To monitor or check spreader settings, keep a Lesco gauge handy, and use it often.

"Regardless of what products we use, unless we put these products down correctly, we'll never get the results we need," says Avenius, who works out of Indianapolis.

—Ron Hall

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the four-tiller stage. When the plant gets larger, a higher rate of the product is needed along with the use of a surfactant.

Also during 1992, J.C. Erlich evaluated Dimension on about 90 properties, primarily those requiring spring seeding, or those coming onto the program in mid-season. Results were encouraging, says Haskett.

With this new product, an LCO should be able to seed in the spring and then come back (in late May or early June in Pennsylvania) with an application of dithiopyr to take care of crabgrass both before and after its germination. Also, broadleaf controls can be applied at the same time.

He says his company's most experienced technicians will continue to evaluate dithiopyr this season in field conditions.

In theory anyway, these newer turf-grass herbicides should allow some LCOs to apply fertilizer only during their first application round—if not to all their lawns, to at least their best lawns. This would reduce costs for this first application while extending the time the LCO has to control crabgrass.

Haskett shared his ideas during a presentation at the PLCAA Conference in Indianapolis this past November.

—Ron Hall



Emerged crabgrass, easiest to control when plant youngest. (photo courtesy Monsanto)

Desert landscaper believes quality work delivers profits—eventually



Gustafson appears tiny beside this sahuaro cactus near his home on the outskirts of Tucson.

Steve Gustafson says competition is good but too many 'also-rans' in Tucson market keeps prices and wages low.

■ Steve Gustafson, owner of Blooming Desert Landscape, Tucson, Ariz., is a big man who wears big, dusty cowboy boots.

With the scraping and crunching these boots are making on the crumbling granite, it's unlikely he'll surprise any critters, which is fine with him. His destination is a 55-foot-plus sahuaro cactus (*Carnegiea gigantea*). It's just a 15-minute walk through tugging, thorny brush from his house.

"If I could just buy this piece of property, can you imagine what I could do with it?" says Steve, daydreaming of the ultimate desert landscape he could design with this grandpappy cactus as its crowning glory.

It weighs at least four

tons. He's counted 72 "arms" growing from it. How long has it been growing there? 200 years? Steve thinks longer, long enough at least to see the city sprout and grow out toward it.

There are millions of sahuaro in Southern Arizona. Nothing is as noticeable in the desert unless it's the craggy mountains that surround Tucson. Even the mountains appear to be covered with quills, which are the sahuaro.

But, there's only one Steve Gustafson.

At 39 he's a bear of a man, with an animated, sun-reddened face. A fascinating conversationalist, his language is peppered with anecdotes of both flora and fauna although he's a relatively recent arrival to the Arizona-Sonora Desert. He was raised and educated in Portland, Ore. He landed in Tucson, doing post-doctoral work at the University of Arizona, Tucson.

He left academia and research because he says he'd rather work in the practical and applied aspects of horticulture.

"I became involved in landscape work when I was about nine with my three brothers. We mowed and took care of about 30 lawns," says Gustafson. "As the older brothers went to college, the younger ones took over. I was the last one."

He continued to work on yards as he earned degrees at Portland State and a Ph.D. in horticulture at Oregon State University. Now his goal is to be recognized as one of Tucson's best landscape contractors.

That, says Gustafson, is a tall order. Profits are getting harder and harder to dig out of the crowded Tucson landscape market, he says. He guesses there are