

recalls Mayberry. "It (1989) was also a tough year for grounds maintenance, with more disease and insect problems."

According to Mayberry, some residential-based irrigation companies in the Arlington area went out of business due to too much rain. "If it's not hot and dry," says Mayberry, "people aren't thinking about irrigation." Irrigation companies with more commercial clients remained busy, however. According to Mayberry, commercial sites install irrigation systems as a matter of course; if they need the water, it will be there.

On the rebound

The economy of Houston, Texas has long been upset by the decline in that state's oil industry. But for Environmental Landscape Services, things are on the upswing.

"For the first time in a while, I feel good about business in our part of the world," says company president **Charlie Racusin**. "We're headed in a good direction. I feel comfortable and enthused, and have nothing but good to tell you. The opportunity for growth in past years was not as good as this year in Houston."

According to Racusin, profit margins are much more competitive than they were five or six years ago. "The people I'm selling to are also positive and not nitpicking as much."

Gregory Spencer of The Spencer Co., also located in Houston, believes the market size and desired quality of landscape management services continues to grow into the 1990s.

"In order for our industry to meet the challenge of the future," says Spencer, "it is imperative that we continue to train our personnel towards higher productivity and use the latest technology available to our industry."

"The recruitment, development and retention of experienced and educated employees at all levels of the company is a high priority for our industry."

Spencer, much like other landscape professionals, is aware of the continuing challenge the industry faces to find and retain a competent workforce.

The industry is aware of the problem, and fortunately, is doing something about it. The secret is to control events before they control you. Continues Spencer, "We compete not only within our industry for qualified personnel, but also with unrelated industries in the service sector. The quality

TALLYING UP THE TOTALS

The following companies responding to our "Million Dollar Mowers" survey reported more than \$1 million in mowing/management revenue in 1989.

1. **Environmental Care, Inc.**, Calabasas, CA—\$44 million.
2. **The Brickman Group**, Jenkintown, PA—\$19.3 million.
3. **Lancaster Landscapes, Inc.**, Arlington, VA—\$12.5 million.
4. **Shearon Environmental Design Co., Inc.**, Plymouth Meeting, PA—\$6 million.
5. **Cagwin & Dorward**, Novato, CA—\$5.2 million.
6. **Stiles Landscape Service Co.**, Pompano Beach, FL—\$5 million.
7. **AAA Lawn Industries**, Tucker, GA—\$4.9 million.
8. **Green Thumb Enterprises**, Sterling, VA—\$3.5 million.
9. **K.T. Enterprises**, Alexandria, VA—\$4 million.
- 9a. **Las Colinas Landscape**, Irving, Texas—\$4 million.
11. **California Landscape Maintenance, Inc.**, Canoga Park, CA—\$3.5 million.
12. **Heyser Landscaping**, Norristown, PA—\$3.3 million.
13. **Pampered Lawns, Inc.**, Houston, TX—\$2.9 million.
- 13a. **William Vandergeest Landscape Care**, Santa Ana, CA—\$2.9 million.
15. **Clarence Davids & Co.**, Blue Island, IL—\$2.8 million.
16. **Moore Landscapes, Inc.**, Glenview, IL—\$2.4 million.
18. **BGT Landscape Co., Inc.**, Mundelein, IL—\$2.2 million.
- 18a. **Lawn Ranger, Inc.**, Zionsville, IN—\$2.2 million.
19. **Greenleaves**, Chamblee, GA—\$2.1 million.
20. **American Landscape Maintenance**, Canoga Park, CA—\$2 million.
- 20a. **Landcare Industries**, Tampa, FL—\$2 million.
22. **Nanak's Landscaping of Orlando**, Altamonte Springs, FL—\$1.9 million.
23. **Pennink-Arrimour**, Bryn Athyn, PA—\$1.8 million.
- 23a. **Moon Landscaping**, Yardley, PA—\$1.8 million.
- 23b. **Ruppert Landscape Co.**, Aston, MD—\$1.8 million.
26. **Mainscape, Inc.**, Fishers, IN—\$1.7 million.
27. **Alfred L. Simpson & Co., Inc.**, Atlanta, GA—\$1.4 million.
- 27a. **Grounds Management and Landscaping**, Mitchelville, MD—\$1.4 million.
- 27b. **SKB Lawn Industries**, Clarkson, GA—\$1.4 million.
- 27c. **The Spencer Co.**, Houston, TX—\$1.4 million.
31. **The Bruce Co.**, Racine, WI—\$1.1 million.
- 31a. **Hunt & Hulteen, Inc.**, Brockton, MA—\$1.1 million.
- 31b. **Tecza Brothers, Inc.**, Elgin, IL—\$1.1 million.
34. **Earth Tone Development**, Houston, TX—\$1 million.

OVER \$1 MILLION, FIGURES NOT RELEASED:

Environmental Landscape Services, Inc., Houston, TX
KEI Enterprises, Cudahy, WI
Allen Keesen Landscape, Inc., Denver, CO
Minor's Lawn Care, Ft. Worth, TX
Northwest Landscape Industries, Tigard, OR
Proscape Co., Dallas, TX

of management, employee recognition, better benefits, company climate and opportunities for career growth are some of the factors which will have a bearing on the retention of good employees an increasingly scarce resource."

The labor question

Allan Curr says Wm. Vandergeest Landscape Care, Santa Ana, Calif., is

in the enviable position of having to turn down more work.

"We've reached a size where I feel quite comfortable. The most difficult thing is being polite enough to turn down a client without them thinking you're being snooty," notes Curr. "We're sort of staying where we are in size for until I train more personnel."

Curr says, however, that labor retention problems remain.



To retain a good labor force in the 1990s companies will have to pay much higher wages to keep people on board.

Lawn care services are often trimmed during economic downturns.

"The primary (cause) is the pay scale in this industry," explains Curr. "I'm not saying you get better people if you throw money out there, but it would help. Maintenance is not a high paying industry in California.

halfway decently in Southern California," says Curr, "and have more of an incentive for longer term commitment, first of all he needs more education and beginning base pay has to be around \$8 an hour."

have in common? For some, success has been won through traditions of service excellence. Marketing skills, a dedicated work force and diversity of service to a large client base insures the success of others.

"In order for an employee to live

What do "Million Dollar Mowers"

Common traits that both large and

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"Successful companies will have to have a complete understanding of the total costs of the business and reasonable profits required to meet the needs of the marketplace" —
Gregory Spencer

small companies must adopt or continue to practice is preparedness and adaptability.

What's the secret?

The weather surely can't be expected to cooperate. Politically-motivated legislators will continue to put up roadblocks, and the economy can change in a matter of days. The dual challenge is to manage, contribute to or be ready for the outcomes of the behind-the-scenes politicking while trying to run a profitable business.

Sensitivity to the issues and smart business practices will make the '90s a harmonious, safe and profitable decade.

LM

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Classic demonstrates good resistance to leaf spot, crown rot and rust. Classic demonstrates resistance to stripe smut, snow mold, stem rust and Fusarium blight. Classic is tough.

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Texture and color of Classic provide a handsome pleasing growth. Color is bright, deep green. Classic proves highly compatible in turf-seed blends. Classic is a sward of beauty.

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With virtually endless varieties of colorful woody ornamentals now available in nurseries, many landscapers are purposely creating Dyclomec-safe

beauty spots such as the one above. Photos on the right show how Dyclomec can turn a fence line into a landscaping highlight.



How to improve your efficiency in managing landscape beauty spots



Nothing says as much about a landscaper's expertise as the appearance of ornamental beds, fence lines, tree wells, etc. Learn how Dyclomec® Landscaping Herbicide can help keep these beauty spots weed-and-grass-free for considerably less money than you are now spending.



In recent years, the usage of Dyclomec has increased at an unprecedented rate as more and more landscapers have learned from direct experience what a labor-saving, cost-saving chemical tool it is.

But cheer up — because this is the year you discover Dyclomec.

Indeed Dyclomec's active ingredient is unique in all the world. No other chemical is so versatile and so helpful to the landscaper.

And now, it is your turn to discover how you can use Dyclomec to keep problem areas such as fence lines, tree wells, ornamental beds, etc. free from weeds and grasses. Of course, you know how important this is, because the most neatly manicured turf and beautifully trimmed ornamentals are wasted if your landscaping highlights are spoiled by an ugly growth of weeds and grass.

It's *both* post-emerge and pre-emerge; it controls *both* grasses and broadleaves, even such toughies as quackgrass and spurge; it controls *both* annuals and perennials; it has the broadest spectrum of any pre-emergent in the world; one treatment lasts all season and then totally biodegrades.

What is Dyclomec — how does it work?

The active ingredient in Dyclomec is dichlorobenzonitrile. We mill it into razor-thin crystals and incorporate it into a special granule that our researchers developed in 1985.

Perhaps you've tried a contact herbicide only to find that the vegetation grows right back. Perhaps you've tried a flower-safe pre-emerge, only to find that it runs out of gas long before the season is over, and that its narrow spectrum misses the very weeds and grasses you need to control.

Broad-spectrum strength. In desperation you may have gone back to your string trimmer and a hoe.



You simply spread the granules on any precise area you want to keep clean. You can put the granules down over existing weeds and grasses or you can put them down over

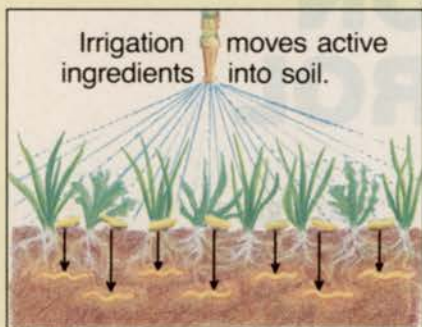


Schematic drawings show why Dyclomec works where conventional (flower-safe) pre-emerges fail.

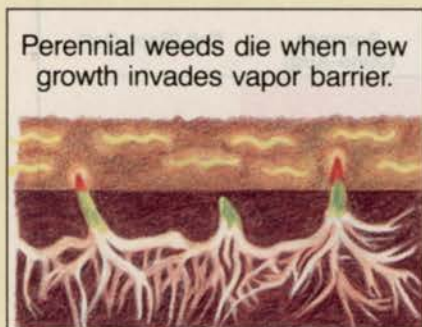
Flower-safe pre-emergent herbicides in some instances have to be present in adequate strength before germination occurs. Such herbicides simply will not knock out weeds after they germinate.

Furthermore, these flower-safe pre-emergents are broken down by light and microbial action and thus begin to lose strength from the very first day they are applied.

Seeds, of course, can germinate almost anytime



Dyclomec granules are spread in areas you wish to keep clean from weeds and grasses. It is all right to spread them over existing vegetation if you want to kill it. Water moves the active ingredient into the top 2 or 3 inches of the soil, where it forms a vapor barrier that kills meristematic tissue.



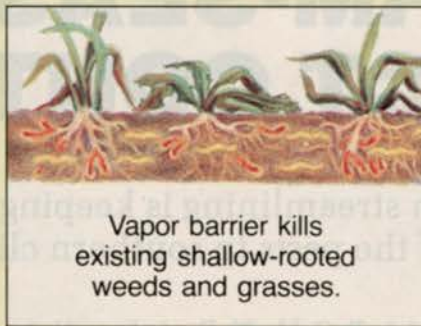
Perennials coming out of dormancy die when their new sprouts hit the barrier. Likewise, creeping grasses like Bermuda are pruned back when they try to invade the vapor barrier. So long as the Dyclomec vapor barrier is present, you can be sure that the area is going to be free of weeds and grasses.

bare ground, or bark, or mulch or pebbles. The herbicide can work its way down through any kind of groundcover that weeds can work their way up through. All you need to do is be sure it is incorporated into the soil. So, in most instances, the best thing to do after spreading it is to sprinkle it in with irrigation.

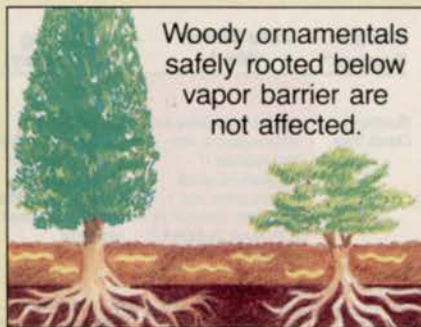
The herbicide will penetrate into the top layer of soil and form a vapor barrier approximately 2 to 3 inches deep. This vapor barrier is not water soluble so it has very little lateral movement.

during the year, depending on the weather and the weed or grass species. Thus it is that many seeds can germinate past the efficiency period of the pre-emerge — or could have germinated before the pre-emerge is applied. It's a narrow window at best, and characteristically the spectrum of a pre-emerge that stops germination is relatively limited.

Of course, these flower-safe pre-emergents have no effect at all on existing weeds (that's why it's safe



Dyclomec kills all existing weeds and grasses because their tender roots are in the vapor barrier. Even such toughies as quackgrass, crabgrass, Bermudagrass, spurge, oxalis and ground ivy will die when their roots are exposed to the Dyclomec vapor barrier, resulting in beautifully weed-free grounds all season long.

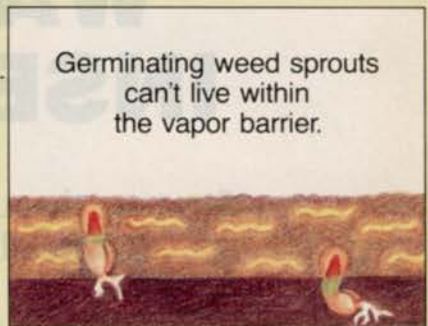


Woody ornamentals that have roots below the vapor barrier are unaffected. Because of this, many landscapers deliberately plan their "beauty spots" to contain colorful, woody ornamentals that are Dyclomec-safe. The overall beauty is enhanced and the maintenance cost is reduced.

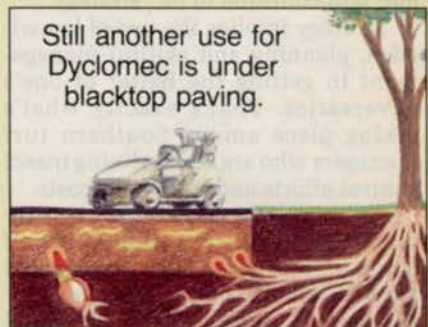
The vapor barrier kills meristematic tissue, and thus no shallow-rooted plants can live in it. No newly germinated seeds can live in it, and no perennial shoots coming up from dormancy can penetrate it. And yet existing, deep-rooted woody ornamentals are completely safe.

to spray them over flowers). Accordingly, to clean up a landscape beauty spot, it is necessary to kill existing vegetation with a contact herbicide. Or clean it out by hand.

Now... take a minute to study the schematic drawings on this page that delineate the remarkable activity of Dyclomec... then, as a professional, ask yourself if you shouldn't at least give Dyclomec a trial.



Weed seeds either in or below the vapor barrier cannot emerge because the barrier kills their meristematic tissue. And, since Dyclomec gives season-long control, there is no critical time table as to when it must be applied. Do it at your convenience, confident that the treatment will be effective.



Blacktop cart paths that are underlaid with Dyclomec will not have weeds poking through their surface nor shallow roots invading from below and threatening to buckle the blacktop. Of course, this is also true of areas that are covered with gravel or pebbles, or even cobblestones or bricks.

And here's the really good news! It lasts all season long, and then totally biodegrades.

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WARM-SEASON INSECT CONTROL

Strategy through streamlining is keeping turf managers ahead of the pests in southern climates.

by Patricia P. Cobb, Ph.D., Auburn University

The key element to keep in mind when preparing to control insects in Southern turf has been and will continue to be "strategy."

Strategy implies the use of knowledge, planning and skillful management in getting the better of one's adversaries. That's exactly what's taking place among Southern turf managers who are streamlining insect control efforts and treatment costs.

An increased demand for quality turf, coupled with the wide variety of Southern turf insect pests, has created the potential for outrageously expensive control efforts. These increased costs, coupled with today's heightened awareness of environmental protection, have meant developing and adopting new approaches to both old and new insect problems.

An affordable, effective control strategy will use available pesticide information to select and benefit from today's biological, cultural and chemical tools.

Problem insects

Although mole crickets and fire ants remain the most expensive turf insects to control, grub problems continue to become more widespread throughout the Southeast. Spittlebugs, once a coastal problem, now damage turf in most areas of the Gulf States and Georgia.

In 1989, tropical sod webworms, usually found only in central and south Florida, were reported by lawn care professionals in areas along the Gulf Coast.

Annual pests in Florida, southern Georgia and the southern half of the mid-Gulf states, mole crickets have made their way into the Carolinas and

INSECT CONTROL CALENDAR

Warm-Season*	Late Winter (Mar)	Spring (Apr-May)	Summer (June-Aug)	Fall (Sept-Oct)
(Southern) Chinch Bugs	Replace susceptible turf with resistant or non-host varieties. If overwintered adults become active treat in March with diazinon ¹ (4 lb AI/Acre), Dursban [®] (1 lb AI/Acre), Triumph ² (1 lb AI/Acre), or Oftanol [®] (2 lb AI/Acre).	Control thatch as recommended. Mid-April to May treatments prevent population buildup. Treatments include those listed for late winter.	Damage limited to sunny rather than shady areas spot or area treat damaged grass. Treatment for existing population include those listed for late winter.	Late summer applications usually make fall treatments unnecessary.
Billbugs	Treatment can be done now if adults are active. Diazinon ¹ (4 lb AI/Acre) Dursban [®] (1 lb AI/Acre), Oftanol [®] (2 lb AI/Acre), or Triumph ¹ (1 lb AI/Acre), may be used.	Treat adults when they become active as recommended for late winter.	Treat billbug grubs with grub rates of Turcam [®] , Mocap [®] 5G, Triumph ² (if not used earlier), or diazinon ¹ .	Billbug grub infestations discovered now may be more difficult to control.
Grubs	Control with insecticides usually does not extend to new generation in late July and August.	Late March-early April treatments are only effective before pupation occurs. Treatment may include Turcam (2-4 lb AI/Acre), diazinon ¹ (4 lb AI/Acre), Triumph ² (2 lb AI/Acre), or Mocap [®] (5 lb AI/Acre). Late summer treatments may still be required if reinfestation occurs.	New generation grubs present by late July-mid August can be controlled with Turcam [®] (2 lb AI/Acre), diazinon ¹ (4 lb AI/Acre), Triumph ² (2 lb AI/Acre), or Mocap [®] (5 lb AI/Acre). For green June beetle grubs: use Sevin [®] (2 lb AI/Acre) Irrigate before treatment in hot, dry conditions.	Treatments are effective most years through Sept. Proxol [®] (8 lb AI/Acre) or Triumph ² (2 lb AI/Acre) are effective for late-season control.
Sod Webworm	Treatment is not appropriate at this time.	Warm season grasses out-grow moderate damage. Diazinon ¹ (4 lb AI/Acre), Dursban [®] (1 lb AI/Acre), Proxol [®] (5 lb AI/Acre), Orthene [®] (1/3 lb AI/Acre), or Dipel [®] may be used when larvae are present.	Treat when larvae are present or two weeks after peak moth flight. Treatments include those listed for spring.	Treatment in early Sept. may reduce overwintering population.
Cutworms	Treatment is not appropriate at this time.	Apply insecticide late afternoon and do not irrigate immediately unless specified on label. Treatments include Dursban (1 lb AI/Acre), Proxol [®] (6-8 lb AI/Acre), or Sevin [®] (2-4 lb AI/Acre).	In the South cutworms are usually a spring problem. If summer infestations occur treat as directed for spring.	Treatment usually not necessary at this time.



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rable Bobcat 843. Our 56 net horsepower to their 54. And our 239 cubic inches of engine displacement to their 169. Which also makes the 1845C the most powerful unit in its class.

All this, when added to simple, construction-type hand controls, heavy-duty mainframes and a long list of versatile attachments, makes a compelling case for Case Uni-Loader skid steers.

So contact your nearest Case Dealer to see the powerful Uni-Loader family in action.

After all, you just might discover that Bobcat is no longer in the picture.

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eastern Texas. Control costs have increased as the tawny mole cricket, one of the pest species, moved north and west.

The cost of controlling mole crickets in Florida usually exceeds \$40 million annually. Florida turf managers, in cooperation with University of Florida scientists, have accelerated biological control efforts in a big way.

Nematodes to the rescue

Parasitic nematodes specific to mole crickets have been released at sites selected throughout the state. Evidence of mole cricket population suppression by these parasites has kindled hope for an effective biological tool for long range control of the Southeast's most damaging turf pests.

A two-year project just concluded in Alabama verified the importance of "knowing the pest" in development of control strategies for mole crickets.

Our project involved monitoring pest populations by soap flushing, mapping areas of overwintered mole cricket activity in early April, and treating only mapped areas later for the newly-hatching generation. Mapping in April accounted both years for 90 percent or more of the total area damaged by mole crickets through the whole season.

Timed applications

Tying treatment dates to first observable hatch—before damage became visible—resulted in effective control with lower than label rates of some insecticides. Thus, the combination of mapping and monitoring seed labor and insecticide costs resulted in more effective control.

Dr. Leon Stacey, turf consultant in Georgia, has also reported success with mole cricket mapping.

Heavy spring rains in 1989 brought an end to the drought in many areas, but provided a perfect environment for two-lined spittlebug development. Once a coastal problem, spittlebugs are now a major lawn problem in cities such as Atlanta and Birmingham—particularly in "wet" seasons.

Management practices, especially dethatching, play a major role in effective control of this pest, yet insecticides are still the backbone of our control efforts.

Newer and safer

New and safer formulations of existing products can be expected. Dustless granular insecticides, such as a new granular Mocap from Rhone-Poulenc, will be the result of new formulation technology.

Warm-Season*	Late Winter (Mar)	Spring (Apr-May)	Summer (June-Aug)	Fall (Sept-Oct)
Fall Armyworms	Treatment is not appropriate at this time.	Populations usually develop later during summer and fall.	Treatments are most effective in early morning or late afternoon. Use Dursban (1 lb AI/Acre), diazinon ¹ (4 lb AI/Acre) or Proxol [®] (6-8 lb AI/Acre).	Apply as directed for summer. Fall armyworms are usually a greater problem in Sept. - Oct. than earlier.
Fire Ants	Treatments are less effective at this time.	One of the following baits: Amdro (1.5 lb bait/Acre), ProDrone (.88 lb bait/Acre), Affirm (1 lb bait/Acre), Logic [®] (1-1.5 lb bait/Acre), or Oftanol [®] (.05 lb AI 1000 sq ft.) may be used for area treatment. Wait a week after bait application and treat existing mounds with a registered contact insecticide such as diazinon, Dursban or Orthene.	Treat mounds as reinfestation occurs with registered formulations of diazinon ¹ or Dursban or Orthene [®] 75S dust (2 tsp/ mound)	Area treatments as described for spring may be done in heavily-infested areas. Apply controls for area or mound treatments early in the morning or late in the day. Irrigate before treatment if drought conditions exist.
Mole Crickets	Treatment of overwintered populations is optional in most areas, and does not substitute for summer treatment of nymphs. Tunneling at this time can be reduced somewhat with Orthene sprays (3.5lb AI/Acre). Rolling, fertilizing and irrigating warm-season grasses speeds recovery. Map areas of overwintered mole cricket activity for summer treatment of nymphs.	Monitor areas mapped in March or April weekly with soap flushes to determine when hatching. If hatching occurs in your area before June treat as recommended for summer.	Apply one of the following within six weeks after first observed hatch: Mocap [®] (7.5 - 10 lb AI/Acre) Oftanol [®] in areas where used less than two years (2 lb AI/ Acre), Triumph ² (2 lb AI/Acre), Turcam [®] (2 lb AI/Acre), or Sevimol [®] (6-8 lb AI/Acre). High pressure injection (1500-2000 psi) specialized equipment of Dursban [®] (2 lb AI/Acre) can be done in states where labeling permits. Spot or area treat later in summer with Orthene [®] (2.6-3.5 lb AI/Acre) or Dursban [®] bait (75-150 lb bait/Acre).	Spot treat with Orthene (2.6-3.5 lb AI/Acre) or Dursban bait (75-150 lb bait/acre) Triumph ² (2 lb AI/Acre) is effective late season.
Two-Lined Spittlebug	Treatment is not appropriate at this time.	Treatment usually not necessary at this time. Dethatch turf when appropriate.	Mow, irrigate several hours or the day before treatment. Spray with diazinon ¹ (4 lb AI/Acre) or in less thatchy turf with Dursban [®] (1 lb AI/Acre).	Treat infested areas as described for summer.

* Review accompanying text for details. Follow label directions for specific application instructions.

¹ Diazinon may not be used on golf courses or sod farms.

² Triumph is registered federally for commercial lawn applicator use. Triumph is also registered in some states (24c-Special Local Needs Labeling) for use on golf course tees, greens and aprons and sod farms meeting soil type requirements. Two pounds active ingredient may be applied annually, either as one application or two at 1 lb AI/Acre each.

Source: Dr. Cobb

New formulations of Triumph from Ciba-Geigy and fonofos from ICI are expected this year. Registration of new pyrethroids for turf insect control is also expected.

High pressure liquid injection of insecticides (1500 to 2000 psi) continues to be of interest to turf managers and researchers. This system, developed by Cross Equipment Co. of Albany, Georgia, injects material without slicing as nozzles move over the turf surface.

Advantages of this system include effective control of mole crickets and grubs with lower-than-label rates of certain insecticides and reduced surface residues. (In some states special labeling is required for insecticide application by high pressure injection equipment).

Southern turf in many areas now includes a variety of traditionally

cool-season fescues and ryegrasses. Those varieties that are endophyte-containing (plant within a plant) have long been known to be less damaged by surface-feeding insects.

Dr. Dan Potter of the University of Kentucky, reports results of tests in which certain endophyte-bearing grasses were less damaged by grubs.

During the past decade, southern turf insect problems have become more severe. To what extent the loss of organochlorine insecticides, increased turf quality, expanded pest ranges or the probable combination of factors is responsible, we can not say with certainty. What we can say for sure is that turf professionals have responded positively.

Continued restrictions

Restrictions on pesticides and pesticide use, and increased product

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costs have resulted in our examining our options more closely. Basic pest information has taken on new meaning as we learn more about how to manipulate cultural practices to disrupt pest life cycles.

New technology in product formulations, production of biological control agents, and application methods promises greater applicator and

environmental safety.

In summary, Southern turf managers have and are meeting the challenge of cost-effective insect pest control by increasing their knowledge and expertise, supporting research and extension efforts, and through skillful planning.

In other words, it's the same important basic message: (1) Know all you

can about the pest; (2) Know your control options; (3) Develop your strategy and time efforts effectively, considering long range as well as immediate effects.

The general information offered here is intended to assist the Southern turf manager with developing control strategies for common insect pests.

SPRING (April-May)



Early April treatments of chinch bug and billbug adults may eliminate egg layers and reduce damage later in the season. Chinch bug treatments in May reduce the first nymphal (immature) population that is responsible for June damage.

Turf areas that don't "green up" need to be checked for grubs. If grubs are not in the pupa stage, treatment can be done, but may have to be repeated later in the summer if re-infestation occurs.

Mole cricket hatching begins in May in most areas. Infested turf should be monitored weekly with soap flushes (2 tbs. liquid dishwashing soap in 1 gal. water) in order to determine when first hatch occurs. Be sure to monitor late or early in the day, then flush area with plain water to avoid excessive turf "scalding" by the detergent.

Treatments to reduce spring tunneling are considered optional in most areas.

Sod webworm caterpillars that overwintered in turf

usually pupate and moths emerge in April. Larvae usually hatch about two weeks after moth flights peak. Treatments to infested turf two to three weeks after moth flights peak can eliminate damage.

Cutworm moths often lay their eggs in aeration holes on golf greens in the spring. Larvae hatch and feed at night. Apply insecticides late in the day, and irrigate after treatment only if specified by the label.

Fire ants establish new colonies after rain on warm spring days. During this time fire ants are active on and near the soil surface. New mounds may not be visible above the turf for several days. Infested turf of an acre or more can be broadcast-treated with a fire ant bait.

Allow a week for foraging workers to pick up bait particles, then treat all visible mounds with a contact insecticide to eliminate workers. Treat mounds as re-infestation occurs.

This plan is usually less labor-intensive than simply mound-treating all season, and often results in less pesticide usage.

Ground pearl nymphs hatch during the spring, although treatment has not been shown to be effective. Healthy turf, including disease and nematode control, are important in preventing further damage.



Spittlebugs, once only a coastal problem, now damage turf in most areas of the Gulf states and Georgia. Nymph damage will first appear in June or July, according to Auburn's Dr. Pat Cobb.