pression is the most practical management approach.

Management strategies
1) Core aeration, deep watering, and proper fertilization make symptoms less obvious.
2) Use wetting agents to improve water infiltration.
3) Remove soil to a depth of 18 inches and replace with fresh soil or use a soil fumigant to sterilize the soil.

Nematodes
Nematodes are microscopic unsegmented roundworms. A small group of nematodes can damage turfgrasses. They feed on turfgrasses by puncturing plant cells with a hollow, tube-like structure, and then injecting enzymes into the cells. Nematodes can damage turfgrasses by themselves, or in conjunction with an infectious fungus. Above-ground symptoms of nematode damage include:

- Wilting under moderate moisture stress;
- Slow recovery of wilted turf after rain or irrigation;
- Thinning or gradual decline of turf.

Because nematodes are not distributed evenly in soils, damage rarely appears in uniform areas. Roots damaged by nematodes are usually short and dark colored, with few lateral or ‘feeder’ roots. They may be rotted because of secondary fungal activity. Sometimes the root tip is swollen. The damaged root system will not hold soil together when a core or plug is lifted.

Management strategies
1) Use clean seed or sod and topdressing soil.
2) Clean equipment of all dirt, especially when moving from an area infested with nematodes.
3) Irrigate more frequently to compensate for reduced root systems.
4) Nematicides reduce nematode numbers but don’t completely eradicate them from the soil. LM

Rust in a zoysiagrass lawn. The disease thrives in under-nourished turf.

The author is extension plant pathologist, Texas A&M University at Dallas. Watch for her article on disease control in warm-season ornamentals in the June LM. Photos by Janell Johnk.
With MERIT® Insecticide at the heart of your ornamental insect control program, you can have unsurpassed control throughout the season with just one application. Unlike other insecticides, which require several foliar sprays, MERIT can be applied as a drench or injected into the soil where it's translocated from the root system to the rest of the plant. This systemic action keeps MERIT in the plant to provide unsurpassed control of ornamental pests from spring throughout the summer. Protection that isn't subject to wind drift, and isn't washed off in
the rain or broken down by the sun's rays. And when it comes to reducing environmental impact, MERIT reduces exposure to the applicator, bystanders, pets and wildlife.

To find out more, contact Bayer Corporation, Garden & Professional Care, Box 4913, Kansas City, MO 64120.

(800) 842-8020. http://usagri.bayer.com

And stop using ornamental insecticides that only work on occasion.

NOW YOU CAN ADD ORNAMENTAL INSECTICIDE APPLICATION TO THAT LIST OF THINGS THAT HAPPEN JUST ONCE A YEAR.
1997 ARTICLE INDEX

The following articles appeared in LANDSCAPE MANAGEMENT during the 1997 publishing year, followed by issue/page number.

A 'G' after a page number indicates the article appeared in our Golf demographic issues; an 'L' indicates an article appeared in our Landscape/Grounds demographic issues.

The editors are unable to process requests for reprints, facsimiles or back issues. For reprints of any of these articles, call Marcie Nagy at 218/891-2744. For back issues, call 800/598-6008.

AGRONOMICS

Crumb rubber for turf, Jan., p. 8G; Guide to overseeding, May, p. 051; Clean sand for greens, June, p. 8G; Biological market bubbles, June, p. 20G; Winter kill and carbohydrates, Aug., p. 14G

ARBOR CARE

Pine resin from moths, Jan., p. 9; trees and flooding, May, p. 12; Right tree, right place, May, p. 44; Moving the big trees, May, p. 24L; powdery mildew, June, p. 11; Flooding and trees, June, p. 36; Baled tree dries out, July, p. 12; Borer larvae eat pine terminals, July, p. 12; Wooly adelgid control, July, p. 56; Fungal disease on white spruce, Aug., p. 12; Many mulches, Aug., p. 42; Trees reduce energy bills, Aug., p. 52; Microinjection for trees, Sept., p. 42; More variety in tree care, Oct., p. 34; Dormant pruning, Nov., p. 30; Compacted soils, Nov., p. 10

ASSOCIATIONS


ATHLETIC TURF

Close the field for repair time, Feb., p. 14L; Field management 'partners,' Mar., p. 20L; Show off your best fields, April, p. 22L; Do the field no harm, April, p. 11L; 60-hour weeks, May, p. 10L; Volunteers welcome, May, p. 21L; Tackling poa annua, June, p. 10L; Funding field care, June, p. 16L; Little League World Series field, July, p. 12L; Aerify fields often, July, p. 14L; Track and field turf gets hammered, Aug., p. 14L; Managing lacrosse fields, Aug., p. 18L; Fields of change, Sept., p. 6L; Strides in maintenance, Oct., p. 10L

BUDGETS

Best budgets sweat the details, Jan., p. 30

BUSINESS

Dollar-wise maintenance facility build, Jan., 4G; Customer surveys, Jan., p. 12L; How to fight low bidders, Feb., p. 8L; Charity projects, Feb., p. 16L; Heritage Lawns, Feb., p. 23L; Creative selling, Mar., p. 10L; More service a winner, Mar., p. 16L; Mainscape's commercial focus, Mar., p. 22L; 'Old fashioned' selling,' April, p. 10L; Databases, April, p. 20L; Who's mind ing your shop?, May, p. 24; Guard against equipment loss, theft, May, p. 16L; Getting a loan, May, p. 22L; Selling Plant Health Care, June, p. 4L; Rating landscapes, June, p. 8L; Costflabor concerns, July, p. 6; State of the Industry Report, July, p. 19; Mainte nance niche, July, p. 8L; Show exposure help co., July, p. 20L; Fine fescue in demand, Aug., p. 27; Newsletters, Aug., p. 12L; 'Junk mail' revisited, Aug., p. 16L; Autumn '97, time to buckle op your spurs, Sept., p. 1L; LM 100 have what it takes, Sept., p. 4; Make money in final month, Sept., p. 1L; Working the contract, Sept., p. 9L; Job descriptions, Sept., p. 14L; Snow removal, Sept., SR1; Know the issues, Oct., p. 23L; Christmas decorating services, Nov., p. 1L; Customer feedback, Nov., p. 16L

CONSTRUCTION

Roots and water pipes, Mar., p. 9; Recycled plastic, May, p. 54; Hardscaping easy to do, June, p. 20L; Design challenge for Byron Co., June, p. 23L; Ponds need sunlight, proper slope, July, p. 20L; Protecting Puget Sound, Aug., p. 2L; Making waves in the desert, Aug., p. 4L; Rockscaping, Sept., p. 16L

DISEASE CONTROL

Cultural strategies, April, p. 4G; Coolwarm-season guides, May, pp. 31-40; Nutrients, irrigation factors, May, p. 10G; Warm-season control tips, Aug., p. 12L; New fungicide tried at Honors Course, Nov., p. 8G

EMPLOYEES

Hispanic labor concerns, Jan., p. 26; Career opportunities, Jan., 1G; Finding employees, Jan., p. 4L; Motivate through respect, Feb., 1L; Let employees recruit for you, Mar., p. 11L; Tips to better hiring, Mar., 2L; Employees are assets, April, p. 22L; Smart recruiting, April, 8L; New ways to train, May, p. 4L; Drive slower and live!, June, p. 1L; Incentive pay plans, July, p. 4L; School recruiting, Sept., p. 2L; Lawn care needs flow of workers, Nov., p. 4L

EQUIPMENT

Compact tractors, Jan., p. 22; Zero-turnmowers, Feb., p. 21L; Tractor attachments, Mar., p. 40; Seeders, April, p. 26; Multi-use equipment, April, p. 16L; Landscape vehicles, April, p. 49; Weather monitors, May, p. 28; Stump cutters, June, p. 24; New spreader on the market, June, p. 14G; Sweepers, July, p. 44; Emerald Awards, Aug., p. 24; Snow removal equipment, Aug., p. 34; Aerial lifts, Sept., p. 34; Ground clearing tools, Nov., p. 23

GOLF

Annual tourney a benefit to game, Jan., p. 18G; Better greens a USGA goal, Feb., p.1G; Pelican Hill, nature's partner, Feb., 8G; Tee maintenance, Feb., 19G; Greens grow-in, Mar., p. 2G; Test plots, Mar., p. 6G; Alpine restoration, Mar., p. 20G; Two-man crews, Mar., p. 24G; Flooded fairways, April, p. 12; Staging a tournament, April, p. 12G; Community relations, April, p. 20G; Why you need three mechanics, May, p. 1G; Texas Star, May, p. 4G; Indian River course, May, p. 12G; Super's 40 years at Ledgemont, May, p. 16G; Divot repair challenge, June, p. 1G; Scotland on Lake Erie, June, 4G; Putting green a research lab, July, p. 4G; Wise water use, July, p. 8G; Dry spot cures, July, p. 12G; Testing the 'ultradrifts' for greens, Aug., p. 1G; Championship maintenance facility, Aug., p. 2G; Students help with sanctuary program, Aug., p. 6G; Grand Traverse Resort, Aug., 23G;
p. 9G; Be a friend, Sept., 1G; U.S. Open 'reunion,' Sept., p. 2G; Cart path considerations, Sept., p. 6G; Mahal improves design features, Sept., 10G; Bunkers, equipment, wildflowers, Nov., 12G; Affordable golf at Sage Meadows, Nov., p. 16G; Nursery on course, Nov., p. 18G

GROUND MANAGEMENT
Arizona city crew a gem, Jan., p. 16L; UTEP's unique landscapes, Feb., p. 4L; Spencer Co. wins, April, 4L; 60-hour weeks, May, p. 10L; Cemetery care smarter, Nov., p. 6L; Flood repair for Brewers, Nov., p. 12L

TURF VARIETIES
Bermuda breakthrough, Feb., p. 4G; dwarf bermuda for greens, April, p. 26G; Fine fescue in Calif., May, p. 6L; Shoreline grasses, June, p. 10G

INDUSTRY
Chemical market evolves from ag to golf, Oct., p. 20; Fertilizers grow, Oct., p. 22; Mower City, USA, Oct., p. 23; Mowers better, Oct. p. 24; Growing green, Oct., p. 26; Compact tractors, Oct., p. 27

INSECT CONTROL
Know the symptoms, April, p. 28; Looking ahead to 1997, April, p. 32; Summer stress affects timing, July, p. 43

IRRIGATION
Be complete with irrigation plans, Mar., p. 1G; Water conservation, June, p. 20

LAWN CARE
Bigger TB-CL more of the same for LCOs, Jan., p. 1L; Looking for a haystack in the needles, Jan., p. 4L; Expand ideas about training, May, p. 4L; Incentive pay popular with LCOs, July, p. 4L; School recruiting, Sept., p. 2L; The "Weeder" brought industry builders back to life, Oct., p. 1L

LANDSCAPING
Low-maintenance design tips, Jan., 8L; Trends in landscaping, May, p. 1L; Native landscaping, Sept., p. 4L; Quality in landscaping, Oct., p. 2L

ORNAMENTALS
Annuals, design, care of, Jan. p. 18; New perennials, Feb., p. 23; Weeds in container plants, Mar., p. 9; Hydrogel in planters, Mar., p. 9; Color change-outs, Mar., p. 70; Insect control, April, p. 37; Revive the soil for best color, April, p. 42; Cool warm-season disease control, June, p. 28; Mid-summer blooms, Aug., p. 36; Scales on mag-

Put up a wall that lets your imagination run wild.

Anchor Wall Systems takes you beyond the barriers of traditional retaining walls into a world of design freedom where pins, clips and mortar are things of the past.

Anchor's patented pinless technology and integrated design conforms to virtually any configuration providing maintenance-free solutions for golf courses, residential sites, commercial projects, parks, towering interstate retaining walls and waterfront applications. The natural, rock face texture and warm earthtones accent any landscape environment.

Call 1-800-473-4452, for the Anchor Wall Systems Dealer nearest you.
Visit our website at www.anchorwall.com to download AnchorCAD or to order free AnchorWall version 2.0 design software.

ANCHOR WALL SYSTEMS
6101 Baker Road, Suite 201 Minnetonka, MN 55345-5973 • 1-800-473-4452

Circle 103
The following news articles appeared in LANDSCAPE MANAGEMENT during the 1997 publishing year, followed by issue and page number.

Note: The editors are unable to process requests for reprints, faxes or back issues.

For reprints of any of these articles, call Marcie Nagy at 218/891-2744. For back issues, call 800/598-6008.

Deere links up with TPC, June, p. 14; New bents resist spiking, Aug., p. 16

GROUNDS MANAGEMENT

KC airport's controlled burn, July, p. 16

IPM

Pest forecast tool, July, p. 16

LITIGATION

Lawsuit pending over mower design, Aug., p. 17

LEGISLATION

Leaf blower laws, April, p. 15; NTEP funds cut, April, p. 16; NY notification bill, Sept., p. 19

PESTICIDES

Diazinon levels in Texas water, Jan., p. 12

PEOPLE

B.J. Johnson retires, June, p. 14; LM editor weds!, Aug., p. 52; Killmer new Groundskeeper CEO, Sept., p. 19; Troutman with ECI, Sept., p. 19

POLITICS

PLCAA hits the hill, Mar., p. 12

RESEARCH

Keeping grass green, Mar., p. 88; Too much N hurts shady turf, Oct., p. 14

SUPPLIERS

Novartis gets started, Mar., p. 10; Zeneca's new fungicide, Mar., p. 16; Lesco/MTD joint venture, Mar., p. 16; Deere & TPC to build course, June, p. 14; Mach 2 registered, June, p. 15; DowElanco's Conserve gets go-ahead, July, p. 17; Jacobsen turf school, Aug., p. 17; DowElanco to change name, Oct. p. 14; Jacklin patents endophyte, Nov., p. 14; Toro to build Dingo Digger, Nov., p. 16

WEATHER

Northwest bent and buried, Feb., p. 10; Storms damage nursery stock, Feb., p. 11; flood repair in Ky., Ohio, April, p. 14; Wacky weather all around, May, p. 16
1997 CONTRIBUTING AUTHORS

The following writers contributed articles to LANDSCAPE MANAGEMENT during 1997. The editors greatly appreciate the efforts of these many fine contributors!

JANUARY
Andrews, Bob
Dale, Don
Eastwood, Corey, CGCS
Guido, Judith
Guthrie, Mike
Guyette, James E.
Huston, James, MBA
Knoop, Dr. Bill
Lyman, Lori
Stack, Lois Berg

FEBRUARY
Burchfield, Gary
Calsin, John B., Jr.
Cohen, Stephanie
Dale, Don:
Jaquette, Leslee
Knoop, Dr. Bill
Lamarch, J. Paul
Minner, David, Ph.D.
Snow, James T.
Snyder, Amy
Trusty, Steve & Suz

MARCH
Andrews, Robert
Burchfield, Gary
Iori, Larry
Jaquette, Leslee
Knoop, Dr. Bill
Rottke, Leah
Stevens, H.S.
Werner, Scott, CGCS

APRIL
Abbey, Timothy
Anderson, David, CGCS
Augustin, Bruce J., Ph.D.
Ewing, Jon
Flax, Arthur
Guido, Judith & Eichholz, Marlene
Iori, Larry
Knoop, Bill, Ph.D.
Mathias, Kevin, Ph.D.
Minner, David, Ph.D.
Brandenburg, R.L., Ph.D.
Rottke, Leah
Trusty, Steve & Suz

JUNE
Beeman, Steve
Buchanan, Elizabeth, Ph.D.
Luley, Christopher, Ph.D.
Rao, Balakrishna, Ph.D.
Cobb, Pat, Ph.D.
Harler, Curt
Johnk, Janell Stevens, Ph.D.
Knoop, Dr. Bill
Rottke, Leah
Smith, Tom
Watkins, John E., Ph.D.
Whirty, Bill

JULY
Andrews, Robert
Brandenburg, R.L., Ph.D.
Calsin, John B., Jr.
Conners, Sharon
Dale, Don
Fech, John
Feraro, Dennis
Fiola, Deborah Smith, Ph.D.
Harler, Curt
Jaehnig, K.C.
Knoop, Dr. Bill
McCarty, Bert, Ph.D.
Michaels, Mark
Trusty, Steve & Suz

AUGUST
Dale, Don
Eichholz, Marlene
Frantom, Heather
Harler, Curt
Jaquette, Leslee
Knoop, Dr. Bill
Reavis, Amy K.
Stevens, H.S.

SEPTEMBER
Andrews, Robert
Calsin, John B., Jr.
Cohen, Stephanie
Conners, Sharon
Dale, Don
Dowelam, Paul
Eichholz, Marlene
Fails, Jennifer
Falbo, Bridget
Gruber, Russell & Hanrahan, Pete
Guyette, James E. (contributor)
Harler, Curt
Marx, Donald, Ph.D.
Perry, Floyd
Reaves, Robert
Tattar, Terry, Ph.D.

NOVEMBER
Andrews, Robert
Burchfield, Gary
Frank, Luke
Harler, Curt
Jaquette, Leslee
Knoop, Dr. Bill
Reaves, Robert E.
## BLOWERS, LEAF/LITTER

- **Billy Goat**

## BLOWERS, MULCH

### Finn Corp
- Goosseen Industries
- PRS Materials Inc
- Rexius Express Blowers
- Shred-Vac Systems
- STS Equipment

## BLOWERS, STRAW

- **Finn Corp**
- Goosseen Industries
- Landscapers Supply
- Parker Sweeper Co
- Reino Co & Reino Mulch
- Binder Corp
- Salsco Inc
- Shred-Vac Systems
- SouthAg Inc
- TGMI Inc

## BLOWERS, MIST

- **Aeolus Inc**
- **Friend Mfg Corp**
- **Ben Meadows, Co**
- **OLYMPYK Tilton Equipment Co**
- **RedMax**
- **Smucker Mfg Inc**
- **Solo Inc**
- **Tilton Equipment Co**

## BLOWERS, STRAW

- **Finn Corp**
- **Goosseen Industries**
- **Landscapers Supply**
- **Parker Sweeper Co**
- **Reino Co & Reino Mulch**
- **Binder Corp**
- **Salsco Inc**
- **Shred-Vac Systems**
- **SouthAg Inc**
- **TGMI Inc**

## BLOWERS, MULCH

- **Finn Corp**
- **Goosseen Industries**
- **PRS Materials Inc**
- **Rexius Express Blowers**
- **Shred-Vac Systems**
- **STS Equipment**

## BLOWERS, STRAW

- **Bowie Industries Inc**

## BLOWERS, STRAW

- **Finn Corp**
- **Goosseen Industries**
- **Landscapers Supply**
- **Parker Sweeper Co**
- **Reino Co & Reino Mulch**
- **Binder Corp**
- **Salsco Inc**
- **Shred-Vac Systems**
- **SouthAg Inc**
- **TGMI Inc**

## BORING EQUIPMENT

- **bor-mor Inc**
- **Dingo Digging Systems**
- **Ditch Witch**
- **Line-Ward Corp**
- **McLaughlin Mfg Co**
- **Ben Meadows Co**
- **RedMax**
- **Stanley Hydraulic Tools**
- **Turco Mfg Inc**

## BRUSH CUTTERS, HAND HELD

- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Fiskars Inc**
- **Green Machine by John Deere**
- **Hoffco/Comet Inc**
- **Homeite Sub Deere & Co**

## CHAIN SAWS

- **McCulloch Corp**
  - **Ben Meadows Co**
  - **Northeastern Assocs**
  - **Professional Tree & Turf Equipment**
  - **Quality Aftermarket Mfg & Dist Inc**
  - **RedMax**
  - **SenDEC Corp**
  - **Shindaiwa**
  - **STIHL Inc**
  - **J Thomas Distributors**
  - **Tilton Equipment Co**

## CHAIN SAWS

- **W E Chapps Inc**
- **Clinton Engine Corp**
- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Green Machine by John Deere**
- **Homelite Sub Deere & Co**

## CHAIN SAW ACCESSORIES/PARTS

- **W E Chapps Inc**
- **Clinton Engine Corp**
- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Green Machine by John Deere**
- **Homelite Sub Deere & Co**

## CHAIN SAW ACCESSORIES/PARTS

- **McCulloch Corp**
  - **Ben Meadows Co**
  - **Northeastern Assocs**
  - **Professional Tree & Turf Equipment**
  - **Quality Aftermarket Mfg & Dist Inc**
  - **RedMax**
  - **SenDEC Corp**
  - **Shindaiwa**
  - **STIHL Inc**
  - **J Thomas Distributors**
  - **Tilton Equipment Co**

## CHAIN SAW ACCESSORIES/PARTS

- **W E Chapps Inc**
- **Clinton Engine Corp**
- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Green Machine by John Deere**
- **Homelite Sub Deere & Co**

## CHAIN SAW ACCESSORIES/PARTS

- **McCulloch Corp**
  - **Ben Meadows Co**
  - **Northeastern Assocs**
  - **Professional Tree & Turf Equipment**
  - **Quality Aftermarket Mfg & Dist Inc**
  - **RedMax**
  - **SenDEC Corp**
  - **Shindaiwa**
  - **STIHL Inc**
  - **J Thomas Distributors**
  - **Tilton Equipment Co**

## CHAIN SAW ACCESSORIES/PARTS

- **W E Chapps Inc**
- **Clinton Engine Corp**
- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Green Machine by John Deere**
- **Homelite Sub Deere & Co**

## CHAIN SAW ACCESSORIES/PARTS

- **McCulloch Corp**
  - **Ben Meadows Co**
  - **Northeastern Assocs**
  - **Professional Tree & Turf Equipment**
  - **Quality Aftermarket Mfg & Dist Inc**
  - **RedMax**
  - **SenDEC Corp**
  - **Shindaiwa**
  - **STIHL Inc**
  - **J Thomas Distributors**
  - **Tilton Equipment Co**

## CHAIN SAW ACCESSORIES/PARTS

- **W E Chapps Inc**
- **Clinton Engine Corp**
- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Green Machine by John Deere**
- **Homelite Sub Deere & Co**

## CHAIN SAW ACCESSORIES/PARTS

- **McCulloch Corp**
  - **Ben Meadows Co**
  - **Northeastern Assocs**
  - **Professional Tree & Turf Equipment**
  - **Quality Aftermarket Mfg & Dist Inc**
  - **RedMax**
  - **SenDEC Corp**
  - **Shindaiwa**
  - **STIHL Inc**
  - **J Thomas Distributors**
  - **Tilton Equipment Co**

## CHAIN SAW ACCESSORIES/PARTS

- **W E Chapps Inc**
- **Clinton Engine Corp**
- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Green Machine by John Deere**
- **Homelite Sub Deere & Co**

## CHAIN SAW ACCESSORIES/PARTS

- **McCulloch Corp**
  - **Ben Meadows Co**
  - **Northeastern Assocs**
  - **Professional Tree & Turf Equipment**
  - **Quality Aftermarket Mfg & Dist Inc**
  - **RedMax**
  - **SenDEC Corp**
  - **Shindaiwa**
  - **STIHL Inc**
  - **J Thomas Distributors**
  - **Tilton Equipment Co**

## CHAIN SAW ACCESSORIES/PARTS

- **W E Chapps Inc**
- **Clinton Engine Corp**
- **John Deere**
- **Dolmar USA**
- **Echo Inc**
- **Green Machine by John Deere**
- **Homelite Sub Deere & Co**

## CHAIN SAW ACCESSORIES/PARTS

- **McCulloch Corp**
  - **Ben Meadows Co**
  - **Northeastern Assocs**
  - **Professional Tree & Turf Equipment**
  - **Quality Aftermarket Mfg & Dist Inc**
  - **RedMax**
  - **SenDEC Corp**
  - **Shindaiwa**
  - **STIHL Inc**
  - **J Thomas Distributors**
  - **Tilton Equipment Co**