

## HERBICIDES IN RAINWATER

ArecentU.S. Geological Survey studynoted traces of herbicides in rainwater samples from 23 states.
Atrazine, alachlor, metalachlor and a degradation product of atrazine were among herbicides detected.
Agricultural pesticide use was believed the main source of the herbicide pollution.
This is the first major study to confirm that pesticides can be transported through vaporization into the atmosphere. Turf applicationswere notbelieved to have contributed to the pesticides found in the rainwater samples.

## EPA APPROVES GEORGIA UST PROGRAM

Georgia became the fourth state approved by EPA to run its underground storage tank program in lieu of the federal program.
New Hampshire approval came in June and followed approval of Mississippi, New Mexico and New Hampshire programs.
There are almost 2 million USTs at about 750,00 sites nationwide.
Georgia has an estimated 51,248 underground storage tanks with 1,183 confirmed releases.
The Resource Conservation and Recovery Act (RCRA) authorizes EPA to approve state UST programs to operate in lieu of the federal program. To qualify for final authorization, a state's program must be "no less stringent" than the federal program.

## GCSAA NAMES MCCARTHY

Patricia McCarthy has been named director of administration for the Golf Course Superintendents Association of America. In her new role she will oversee facilities management, personnel, human resources, financing and data information systems.
Before joining GCSAA, McCarthy served as manager of administration and for regional operations, sales and marketing for Home Box Office Services in Kansas City following a twoyear stint as a HBO account executive.
She also worked for Trans World Airlines for 20 years before starting at HBO.
McCarthy holds bachelor's and master's degrees in business administration from the University of Missouri-Kansas City.

## HAGUE HONORED FOR OPEN WORK

CHASKA, Minn. - ChrisL. Hague, course superintendent of Hazeltine National Golf Club, was cited for his excellent work in preparing the course for the recent 1991 U.S. Open.

Stephen G. Cadenelli, Golf Course Superintendents Association of America president, made the plaque presentation on behalf of the GCSAA.
Among those attending the annual GCSAA member reception were Robert Trent Jones Sr. and Jr., golf course architects; Ray Anderson and Judy Bell, USGA executive committeemembers, and ThomasC. Fischer, Minnesota GCSA president.

## International finds a way for a 'perfect match' <br> By Mark Leslie

A leader of the sod growing industry says it is a story eligible for Ripley's Believe It or Not.
A seed company president feels it may be the beginning of a trend among older golf courses.
The superintendent of the golf course says it plainly makes sense.
International Tennis and Country Club in Fairfax, Va., has contracted with Summit Hall Turf Farm in Poolesville, Md., to grow four acres - that's 170,000 square feet - of bentgrass sod on a U.S. Golf Associationapproved soil mix that exactly matches the course's rebuilt greens.
"This way, all our greens, when we sod them, will have exact matches as far as the mix the sod was grown on and the mix for the greens. Weused the same materials, because we're looking for an exact match," said In-

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A crew from Chantilly Turf Farms, Inc. lays bluegrass sod on the perimeter of the 13th green at International Town and Country Club. Chantilly, a subcontractor to John Ponko Inc., will put down bentgrass sod on the greens. Chantilly grew the bluegrass sod, white Summit Hall Turf Farm grew the bentgrass.

## Top-ranked varieties in National Ryegrass Test

| Name | DC1 | 7 | IN1 | KYI | MDI | MI1 | MOI | NEI | N | N2 | NY1 |  | OR1 | OR2 | RII | 1 | 1 | VAl Mean |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ) |  | 5.97 .2 | 7.0 | 6.8 | 5.5 | 5.9 | 5.7 | 6.2 | 6.3 | 6.4 | 4.8 | 8.0 | 0.1 | 5.9 | 6.9 | 6.2 | 7.3 | $4.8 \quad 6.2$ |
| *PST-M2E (Man. II W/E) | 4.4 | 6.26 .8 | 7.3 | 7.2 | 5.7 | 5.4 | 5.8 | 5.5 | 6.3 | 6.8 | 4.8 | 7.0 | 6.9 | 6.2 | 7.2 | 6.3 | 7.1 | 4.76 .2 |
| *SR 4000 | 2.9 | 0.37 .0 | 6.8 | 7.2 | 6.2 | 6.3 | 5.8 | 6.0 | 6.2 | 6.5 | 5.3 | 6.3 | 0.1 | 6.1 | 7.1 | 0.7 | 7.2 | $5.0 \quad 6.2$ |
| *PICK 300 (Blazer 11) | 5.3 | 6.66 .9 | 7.2 | 7.3 | 5.7 | 5.7 | 5.8 | 6.2 | 5.4 | 6.9 | 5.2 | 7.3 | 6.6 | 6.1 | 6.7 | 6.6 | 4.4 | 4.96 |
| *PST-259 (Commander) | 4.9 | 6.37 .1 | 6.9 | 6.8 | 5.5 | 5.2 | 5.0 | 5.9 | 5.8 | 6.9 | 4.8 | 7.3 | 6.2 | 6.3 | 7.0 | 6.7 | 7.2 | 4.76 .1 |
| *SR 4100 | 4.1 | 6.67 .6 | 6.9 | 7.2 | 6.0 | 5.2 | 6.2 | 5.7 | 6.0 | 5.7 | 5.4 | 7.0 | 5.7 | 6.1 | 7.0 | 6.1 | 7.4 | 4.96 .1 |
| *PST-247 (Dimension) | 3.3 | 7.36 .7 | 6.6 | 7.1 | 4.8 | 6.3 | 5.5 | 5.8 | 6.1 | 7.2 | 5.3 | 6.7 | 0.8 | 6.3 | 6.6 | 6.3 | 7.0 | 4.96 .1 |
| *REPELL | 5.3 | 0.47 .0 | 6.9 | 7.3 | 6.0 | 5.4 | 5.3 | 5.8 | 5.1 | 6.0 | 5.4 | 7.0 | 5.7 | 6.1 | 7.3 | 6.5 | 6.8 | $4.8 \quad 6.1$ |
| *PICK 600 (Fiesta 11) | 3.2 | 6.36 .7 | 6.9 | 6.9 | 5.2 | 5.4 | 5.8 | 6.3 | 5.2 | 6.6 | 5.0 | 7.7 | 6.8 | 6.1 | 7.4 | 6.9 | 5.0 | $5.0 \quad 6.0$ |
| *Omega | 3.2 | $6.8 \quad 6.3$ | 7.1 | 7.3 | 5.5 | 5.4 | 5.7 | 5.6 | 5.3 | 6.3 | 5.1 | 7.0 | 6.5 | 5.9 | 6.7 | 6.3 | 6.9 | 4.76 .0 |
| *PICK 647 IR | 3.8 | 6.37 .2 | 6.8 | 7.1 | 4.8 | 5.8 | 5.5 | 5.7 | 5.8 | 6.4 | 5.3 | 6.7 | 5.8 | 6.0 | 7.2 | 6.8 | 5.4 | 4.65 .9 |
| *PENNANT | 4.9 | 6.47 .1 | 6.8 | 6.5 | 5.2 | 5.4 | 5.5 | 6.0 | 5.6 | 6.2 | 5.1 | 6.3 | 5.6 | 5.6 | 6.9 | 6.1 | 6.8 | 4.95 .9 |
| *MANHATTAN | 4.2 | $6.8 \quad 6.8$ | 6.9 | 6.5 | 5.7 | 5.5 | 5.2 | 5.8 | 5.5 | 6.3 | 4.9 | 7.0 | 6.4 | 6.3 | 6.4 | 6.1 | 6.0 | 4.75 .9 |
| *PST-250 (Competitor) | 4.4 | 5.96 .8 | 6.8 | 0.6 | 5.3 | 5.0 | 5.7 | 5.8 | 5.7 | 6.3 | 5.1 | 6.7 | 6.6 | 6.1 | 6.8 | 6.8 | 5.9 | 4.65 .9 |
| *PST-2HH (Charger) | 2.8 | 6.27 .1 | 6.8 | 6.8 | 6.2 | 6.0 | 4.8 | 5.7 | 4.8 | 6.5 | 5.1 | 6.3 | 7.0 | 5.9 | 6.6 | 6.9 | 6.4 | 4.85 .9 |
| *PICK 71 | 2.9 | 5.56 .4 | 6.9 | 6.6 | 6.3 | 5.0 | 5.7 | 5.8 | 5.7 | 6.3 | 5.0 | 7.0 | 6.1 | 5.7 | 6.7 | 6.4 | 7.3 | 4.75 .9 |
| *PALMER | 5.8 | $6.2 \quad 6.5$ | 6.9 | 6.6 | 6.3 | 5.3 | 5.3 | 5.7 | 5.3 | 5.7 | 4.7 | 6.3 | 6.1 | 5.7 | 6.7 | 6.3 | 5.8 | 4.95 .9 |
| *PICK 233 (Dasher | 2.9 | $5.8 \quad 6.4$ | 6.7 | 7.0 | 5.8 | 5.4 | 5.2 | 5.6 | 5.7 | 5.9 | 5.5 | 6.3 | 5.9 | 6.1 | 6.9 | 6.3 | 7.1 | 4.95 .9 |
| ITATION 1 | 2.3 | 5.86 .9 | 6.7 | 7.0 | 6.3 | 5.4 | 5.8 | 5.2 | 5.4 | 6.1 | 4.4 | 6.3 | 6.0 | 5.9 | 6.8 | 6.3 | 7.4 | 4.85 .8 |
| * \|ST-851 |linds | 3.4 | $6.0 \quad 6.6$ | 6.6 | 6.7 | 5.5 | 5.4 | 5.3 | 5.8 | 5.2 | 5.8 | 4.9 | 6.7 | 5.8 | 6.3 | 6.9 | 0.6 | 5.6 | 5.05 .8 |
| PST-2DD | 3.1 | $7.2 \times$ | 6.8 | 6.9 | 4.7 | 4.9 | 3.5 | 5.3 | 5.0 | 6.3 | 5.2 | 7.0 | 7.2 | 6.4 | 6.7 | 0.7 | 6.4 | $4.8 \quad 5.8$ |
| *PRELUDE | 5.1 | 6.36 .9 | 6.7 | 6.4 | 5.5 | 5.3 | 5.3 | 5.9 | 5.0 | 5.3 | 4.7 | 6.3 | 5.8 | 5.7 | 6.8 | 6.5 | 5.1 | 4.75 .8 |
| *GATOR | 4.3 | 5.96 .3 | 6.9 | 6.8 | 5.3 | 5.3 | 4.8 | 5.9 | 5.0 | 5.8 | 5.3 | 7.3 | 5.6 | 0.1 | 7.1 | 6.3 | 3.9 | 5.05 .7 |
| *ALLAIRE | 4.5 | $\begin{array}{llll}5.8 & 6.7\end{array}$ | 6.9 | 6.7 | 5.7 | 5.3 | 5.0 | 6.0 | 5.0 | 6.6 | 5.0 | 6.7 | 5.8 | 5.9 | 6.4 | 6.1 | 4.8 | 4.25 .7 |
| PSU-333 | 5.1 | $5.8 \quad 6.9$ | 6.8 | 6.5 | 5.8 | 5.2 | 5.0 | 5.8 | 5.0 | 5.6 | 5.0 | 7.0 | 5.1 | 5.5 | 6.5 | 6.3 | 4.6 | 4.75 .7 |
| *KWSS-Al-2 (Aquarius) | 3.3 | 0.16 .1 | 6.1 | 6.3 | 4.7 | 5.5 | 5.0 | 5.5 | 6.1 | 6.5 | 4.4 | 7.0 | 6.5 | 6.9 | 6.3 | 7.3 | 3.7 | 4.45 |
| *CALIENTE | 5.1 | 5.87 .2 | 6.6 | 6.6 | 5.7 | 4.8 | 5.3 | 5.7 | 5.0 | 4.9 | 4.4 | 6.3 | - 5.3 | 5.4 | 6.2 | 6.1 | 6.2 | 4.7 |
| *GOALIE | 4.4 | 5.97 .5 | 6.7 | 6.4 | 5.3 | 5.3 | 5.2 | 5.6 | 5.5 | 5.7 | 4.7 | 6.3 | 5.0 | 5.2 | 6.7 | 6.7 | 4.6 | 4.85 .6 |
| *TARA | 3.7 | $0.6 \quad 6.6$ | 6.5 | 6.9 | 5.5 | 5.2 | 4.5 | 5.8 | 4.8 | 5.8 | 5.0 | 7.0 | 6.5 | 6.1 | 7.0 | 6. 3 | 3.0 | $4.6 \quad 5.6$ |
| RUNAWAY | 3.9 | $\begin{array}{llll}5.8 & 6.7\end{array}$ | 6.7 | 6.9 | 6.0 | 5.4 | 5.0 | 5.4 | 5.0 | 5.8 | 5.0 | 6.7 | 5.2 | 5.6 | 6.2 | 6.5 | 4.6 | 4.95 .6 |
| *PATRIOT | 4.4 | 5.96 .9 | 6.6 | 6.5 | 4.8 | 5.1 | 5.5 | 5.8 | 4.6 | 5.4 | 4.9 | 6.7 | 5.3 | 6.0 | 6.6 | 6.6 | 5.2 | 4.45 .6 |
| *BIRD | 3.3 | $\begin{array}{llll}5.8 & 6.9\end{array}$ | 6.7 | 6.6 | 5.7 | 4.8 | 5.5 | 5.7 | 4.8 | 5.2 | 4.9 | 5.7 | 5.6 | 5.9 | 6.4 | 5.8 | 6.8 | 4.75 .6 |
| PSU-222 | 4.7 | $5.8 \quad 6.6$ | 6.7 | 6.7 | 5.7 | 5.2 | 4.7 | 5.8 | 5.0 | 5.0 | 5.0 | 6.7 | 4.9 | 5.4 | 6.8 | 6.6 | 4.4 | 4.65 .6 |
| *RODEO | 4.7 | 6.36 .3 | 6.4 | 6.4 | 5.0 | 5.2 | 5.0 | 5.8 | 5.0 | 5.7 | 4.8 | 7.0 | 5.8 | 5.8 | 6.7 | 6.0 | 3.9 | 4.35 .6 |
| *BAR LP 410 (Barrag | 4.1 | 5.86 .6 | 6.7 | 6.8 | 5.3 | 4.6 | 5.7 | 5.3 | 3.9 | 4.3 | 4.8 | 7.0 | 5.3 | 5.7 | 6.5 | 6.3 | 6.4 | 4.95 .6 |
| * 246 | 4.3 | 5.45 .8 | 6.5 | 6.6 | 6.0 | 4.8 | 5.7 | 5.8 | 4.5 | 5.3 | 4.3 | 6.0 | 5.8 | 5.4 | 6.2 | 5.9 | 7.0 | 4.65 .6 |
| LSD VALUE | 1.9 | 0.90 .9 | 0.4 | 0.6 | 1.1 | 0.6 | 1.4 | 0.7 | 1.0 | 1.0 | 0.6 | 1.0 | 0.7 | 0.5 | 0.7 | 0.5 | 1.3 | $0.6 \quad 0.2$ |

## Dramatic improvements reported in ryegrass varieties

By Mark Leslie
Scientists have caused dramatic improve ments in ryegrasses the last four years, but the future should be even more historic, according to the national director of the U.S. Department of Agriculture's National Tuyrfgrass Evaluation Program.
Kevin Morris said a number of the best experimentals, seeded last fall for the next series of national tests, are "far superior to the best entries in this latest group."
New varieties are mainly lower-growing, darker green, denser, he said.
Meanwhile, he said final results for the four years of tests will be released in late summer or early fall.

Jim Snow, national director of the U.S. Golf Association Green Section, said the most striking change in ryegrasses is that so many now contain endophyte, a natural fungus that makes the grass resistant to chewing and sucking insects.

Snow pointed out one ironic fact about ryegrasses: Ryegrass is the highest selling turfgrass at golf courses nationwide because

*     - Brands available on the marketplace. type of soil, nitrogen in pounds per 1,000 square feet, mowing height in inches, and irrigation practices:
DC1: Washington Monument grounds; loam; 1.1-2.0; 2.1-2.5; no irrigation ID2: Post Falls, Idaho; silt loam and silt; 2.1-3.0; 1.1-1.5; to prevent stress. IL2: Carbondale, III.; silty clay and clay; 4.1-5.0; 2.1-2.5; to prevent stress. IN1: West Lafayette, Ind.; silt loam and silt; 3.1-4.0; 2.1-2.5; to prevent stress KY1: Lexington, Ky.; silt loam and silt; 2.1-3.0; 1.6-2.0; no irrigation. UB1: Beltsville, Md.; loam; 2.1-3.0; 1.1-1.5; to prevent dormancy. MD1: Silver Spring, Md.; sandy loam; 3.1-4.0; 2.6-3.0; to prevent dormancy. MI1: East Lansing, Mich.; sandy loam; 2.1-3.0; 1.6-2.0; to prevent stress. M01: Columbia, Mo. (mechanical wear applied spring and fall); silty clay loam; 2.1-3.0; $2.1-2.5$; to revent stress.
NE1: Lincoln, Neb.; N/A.
NJ1: North Brunswick, NJ.; loam; 4.1-5.0; 1.1-1.5; to prevent stress.
NJ2: Adelphia, NJ .; sandy loam; 5.1-6.0; 1.6-2.0; to prevent dormancy. NY1: Ithaca, N.Y.; sandy loam; 2.1-3.0; 1.6-2.0; to prevent dormancy. OH 2 : Marysville, Ohio; silty clay loam; $3.1-4.0 ; 1.6-2.0$; only during severe stress. OR1: Hubbard, Ore.; silt loam and silt; 4.1-5.0; 1.1-1.5; to prevent dormancy OR2: Corvallis, Ore.; silty clay loam; 4.1-5.0; 1.6-2.0; to prevent dormancy. R11: Kingston, R.I.; silt loam and silt; 3.1-4.0; 1.1-1.5; to prevent stress. SD1: Brookings, S.D.; silty clay loam; N/A; 2.1-2.5; to prevent stress. VA1: Blacksburg, Va.; silt loam and silt; 3.1-1.0; 1.6-2.0; only during severe stress.
it is so often used for overseeding. For that reason, superintendents in the South "may not want such a good grass. They don't want it to hang on and set back the transition from rye to Bermudagrass in the spring."

Morris agreed, saying, "Some Southern superintendents are using older varieties because theyknowtheywon'tstickaroundinthespring." Snow said a superintendent should "base his decision on his specific purpose."

