## BRIEFS



POSTER PROGRAM AVAILABLE
The Golf Course Superintendents Association of America has developed a campaign to educate golfers about commonly misunderstood aspects of course maintenance. Composed of a three-


Randy Nichols poster set, the campaign will inform golfers about aerification, application of fertilizers and chemicals, and golf car restrictions. "Effective communication with golfers is extremely vital to the success of a superintendent's operation," said GCSAA President Randy Nichols. "This poster series will be an important tool in achieving that success." Each poster includes an explanation of the topic and is UV-coated so the superintendent may write in a specific schedule or other information, and wipe it off for re-use. It was designed for use in the pro shop and/or locker room.

## GOOSE ROUND-UP

The Colorado Department of Wildlife has tentatively planned its annual goose round-up to begin around the end of June. More information is available from master driver Dick Kingman, an associate member of the Rocky Mountain GCSA, at 303-470-8237

## PESTICIDE HOTLINE CUT BACK

The federal Environmental Protection Agency has announced it has reduced the hours for its toll-free hotline to the National Pesticides Telecommunications Network [NPTN]. The telephone hotline-800-858-7378-is now available from 8 a.m. to 6 p.m. Mondays through Fridays [Central Standard Time]. It was previously a 24 -hour, seven day-a-week service.

## RUTGERS NEWSLETTER CANNED

Rutgers University's Cooperative Extension Service has canceled its In-sect-Disease-Weed Newsletter after two years of paid subscription service. People wishing to receive the information normally published in the newsletter should call the Extension's Bulletin Board Service at 201-579-0985.

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# Tall fescue breakthroughs may eliminate overseeding 

By MARK LESLIE

The golf industry stands at the edge of an age in which extraordinarily stress-tolerant tall fescue turfgrasses will be available and may eliminate the need for overseeding in the South.
"What you're seeing is a brand-new era and a totally different germplasm base of new fescues that will come out [in the marketplace] in the next three, four, five years," said Dr. Ronny Duncan of the University of Georgia's Griffin Experimental Station. "We will have a whole new generation of stress-tolerant tall fescues that will perform over and above [current] material."
Duncan reports "significant advances" made "very fast" by breeders of tall fescues.
After just one cycle of breeding, Duncan has had "a hundred-fold improvement in adaptability to acid soil and stressful environments," he said. "It's like night and day.
"I'm already in the second cycle [of breeding], and if I make half as much progress in the second cycle as in the
first, we are really going to have some well-adapted material."
Duncan and other turfgrass breeders in the South are building on the great progress made in the transition zone by the long-standing research program of Dr. Reid Funk at Rutgers University in New Jersey.
Funk said "very much more" research is being done on tall fescues.
"With the development of turf-type tall fescues, it was demonstrated we could make significant improvements in lower growth, better wear tolerance, finer leaves and more attractive appearance," Funk said
"Current varieties are doing a superb job in much of California, a good job in areas that don't have extreme summer stress," he added. "They are doing an excellent job in Mediterranean climates of southern Europe."
Robinson said seeds being tested in China and Austria are "looking pretty good.'
Tall fescue breeding programs have always been done north of Virginia and

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## Bottom line: TGIF must sink or swim on its own

By PETER BLAIS
Checking through requests in the Monday morning Turfgrass Information File (TGIF) message box:

- Any information on broadleaf weed control in the Northeast.
- Written justifications given to club boards of directors in requesting an outside architect to oversee course renovations.
- Information on the relationship between geotextile liners and bunker sand consistency.
- Examples of successful bioremediation techniques for maintaining golf course lakes and ponds without chemicals.
- Everything on basidiomycetes - a fungal growth related to fairy rings.

This is the type of information superintendents, students, golf industry manufacturers and researchers commonly request from

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## OF BIRDS AND TREES

From trees to birdhouses, Pinehurst Resort \& Country Club's maintenance staff is becoming more wild-life-friendly. Above, Gerald Lee plants longleaf pine seedlings on Course No. 2. The resort bought 500 of the seedlings from the U.S. Forestry Service. Half will be planted to replace trees lost to lightning and insects. The other half will be grown larger before transplanting. At left, Steve Nagy checks a bluebird house on the 16 th hole of No. 2 - one of 20 bluebird houses that have been installed over the resort'sseven
courses. The Eastern Bluebird was once one of North Carolina's most common songbirds. Reportedly, man's activities and several severe winters have caused the decline of North Carolina's bluebird population by as much as 90 percent. Now the bluebird is said to be making a comeback, due largely to conservation efforts. Nesting sites, such as those installed at Pinehurst Resort, are believed to be crucial to the bluebird's continued survival. The resort's maintenance crew has also installed wood duck boxes on the No. 6 and No. 7 courses.

## Modifying spreaders, adding drains

By TERRY BUCHEN FERTILIZER SPREADERS
Wehave modified our 36-inch stainless steel drop fertilizer spreader slightly so we can "see where we are going" while applying granular fertilizer and pesticide applications after the greens and tees have been mowed and/or the dew has left for the day. We used a Toro/ Olathe Rake-O-Vac plastic sweeper "finger" that is folded in half and bolted near the bottom of each leg. As the person
applies the granular materials, the plastic "fingers" lift up the turf enough so they know exactly how much to overlap for a near-perfect, skip-free application. The fingers have to be pushed back to their original shape occasionally to apply enough pressure to the turf surface. It works quite effectively when the turf surface is dry and seeing the wheel-overlap marks is difficult.

CATCH BASINS
We are fortunate to have a
main line drainage system on most of our golf holes which consists of PVC sewer pipe ranging in diameter from six to 12 inche. At each low point in the fairways and roughs is a concrete vertical "catch basin" with a metal 18 -inch removal steel grate on top. As each main line and lateral four-inch drain line connects into their respective catch basins, the hole made in the concrete is patched with an instant concrete mix.

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# Final report: Top-ranked tall fescue cultivars in 1988-91 tests 



The following are conditions at the sites of the tal fescue national tests, including, in order, location, soi texture, soil pH, nitrogen applied (in pounds per 1,000 square feet), mowing height (in inches) and irrigation practiced.
AR1 - Fayetteville, Ark., silt loam and silt, 6.1-6.5,
3.1-4.0, 2.6-3.0, to prevent dormancy

AZ1 - Tucson, Ariz., sandy loam, 7.6-8.5, 2.1-3.0,
2.1-2.5, to prevent stress.

CA1 - Santa Clara, Calif, loam, 6.1-6.5, 3.1-4.0, .6-2.0, to prevent stress.
CA2 - Santa Ana, Calif., silty clay laom, 6.6-7.0, 5.1-6.0, 1.6-2.0, to prevent stress.

CA3 - Riverside, Calif., sandy loam, 6.6-7.0, 5.16.0, 1.6-2.0, to prevent stress.

DC2 - National Mall, District of Columbia, loam, 6.6-7.0, 1.1-2.0, 2.1-2.5, no irrigation.

GA1 - Griffin, Ga., sandy clay loam, 5.6-6.0, 3.1 $4.0,2.1-2.5$, to prevent stress.
IA1 - Ames, Iowa, sandy clay loam, 7.1-7.5, 1.12.0, 2.6-3.0, no irrigation.

ID2 - Post Falls, Idaho, loam, 4.6-5.5, 2.1-3.0, 1.1-

IL1 - Urbana, III., silt loam and silt, N/A, 3.1-4.0, 1.6-2.0, to prevent stres

IL2 - Carbondale, III., silty clay and clay, 6.1-6.5, 2.1-3.0, 2.1-2.5, to prevent dormancy.

IN1 - West Lafayette, Ind., (high maintenance), silt loam and silt, 6.6-7.0, 3.1-4.0, 2.1-2.5, to prevent stress.
IN2 - West Lafayette, Ind., (low maintenance) silt loam and silt, 6.6-7.0, 0.0-1.0, 3.6-4.0, no irrigation. KS1 - Mane $1-4.0,3.1-3.5$, to prevent stress.
KS2 - Wichita, Kan., sandy loam, 6.6-7.0, 3.1-4.0 2.1-2.5, to prevent dormancy.

MD1 - Silver Spring, Md., sandy loam, 6.6-7.0, 3.1-4.0, 2.1-2.5, to prevent dormancy.

MI1 - East Lansin, Mich., sandy loam, 7.1-7.5, 2.1 3.0, 1.6-2.0, to prevent stress.

MO1 - Columbia, Mo., silt loam and silt, 6.1-6.5, 2.1-3.0, 2.1-2.5, to prevent stress. MO3 - St. Louis, Mo.,silty clay loam, 7.1-7.5, 3.14.0, 2.6-3.0, only during severe stress

NE1 - Lincoln, Neb., sandy clay loam, 6.6-7.0, 3.1-

NI1 - North Brunswick, NJ, .0, 1.6-2.0, to prevent dormancy.
NJ2 - Adelphia, N.J., sandy loam, 6.1-6.5, 4.1-5.0,
1.1-1.5, to prevent stress.

NJ3 - Martinsville, NJ., N/A, N/A, N/A, 1.6-2.0, o irrigation.
NY1 - Ithaca, N.Y., (low mowing), sandy loam, 5.6-6.0, 2.1-3.0, 1.1-1.5, to prevent dormancy.

NY2 - Ithaca, N.Y., (high mowing), sandy loam 5.6-6.0, 2.1-3.0, 2.6-3.0, to prevent dormancy. $\mathrm{OH} 2-$ Marysville, Ohio, silty clay loam, N/A, 3.1 4.0, 1.6-2.0, only during severe stress.

OK1 - Stillwater, Okla., N/A, N/A, N/A, 2.1-2.5,

## prevent stress.

OR1 - Hubbard, Ore., silt loam and silt, 5.6-6.0, 4.1-5.0, 1.1-1.5, to prevent dormancy.

OR2 - Corvallis, Ore., silty clay loam, 5.6-6.0, 4.1
5.0, 1.6-2.0, to prevent dormancy.

RI1 - Kingston, R.I., silt loam and silt, 6.1-6.5, 3.1-$4.0,1.1-1.5$, to prevent stress.
TX1 - Dallas, Tex., (high mowing), tilty clay and clay, 7.6-8.5, 1.1-2.0, 2.1-2.5, to prevent stress.
clay, 7.6-8.5, 1.1-2.0, 1.1-1.5, to prevent stress. UB1 - Beltsville, Md., (high maintenance), sandy loam, 6.1-6.5, 3.1-4.0, 2.1-2.5, to prevent dormancy UB2 - Beltsville, Md., (low maintenance), sandy loam, 6.1-6.5, 0.0-1.0, 2.6-3.0, no irrigation
VA1 - Blacksburg, Va., silt loam and silt, 6.1-6.5, 3.1-4.0, 2.6-3.0, only during severe stress. VA2 - Blackstone, Va., sandy loam, 5.6-6.0, 2.1 3.0, 1.1-1.5, only during severe stress.

VA3 - Richmond, Va., sandy loam, 6.1-6.6, 3.1-4.0, 2.1-2.5, only during severe stress.

VA4 - Virginia Beach, Va., sandy loam, 6.1-6.5, 3.1-4.0, 2.1-2.5, to prevent stress.

VA6 - Norton, Va., sandy clay, 6.6-7.0, 3.1-4.0, 2.1 2.5 , no irrigation.

WA4 - Ritzville, Wash., (dense shade), silt loam and silt, 6.6-7.0, 0.0-1.0, 2.1-2.5, only during severe stress.
WA5 - Mukilteo, Wash., loam, 4.6-5.5, 1.-2.0, 2.12.5, no irrigation.

WA6 - Yakima, Wash., (partial shade), sandy loam, 7.1-7.5, 0.0-1.0, 2.1-2.5, to prevent stress.

## 15, to prevent stress

## Tall fescue breeding programs reported bearing fruit

Continued from page 11
in the Northwest. But Funk pointed to hope offered by the work of Duncan and his team in Georgia; Dr. Melody Kemp Fraser of Pure Seed Testing in North Carolina; North Carolina State
University; and Bob Mazur at Clemson University in South Carolina.

Kevin Morris, national director of the U.S. Department of Agriculture's National Turfgrass Evaluation Program, added that major research is being done by Seed Research of Oregon, Pickseed and others.

Duncan believes he is knocking on the door to significant improvements, and that golf courses would be a Utopia for the new varieties he is breeding.
He is using an approach never used in the turf industry before, he said. That is, he is developing and testing cultivars in the most stressful conditions he can put them in for heat stress, acidic soils and high soil compaction - conditions common to the South.
"I'm screening fescues at pHs of 3.6 to 4.0. This is extremely toxic," Duncan said. "I want it so stressful that if I can get two, three or four plants to live, I've GOLF COURSE NEWS

## 'As we get finer and finer textures and improve adaptability to lower mowing heights, we'll see it more in the high-traffic areas... It will give golf courses more flexibility than they have now.

- Dr. Ronny Duncan, Univ. of Georgia

got material that I can work with from a breeding standpoint.
"When that material is put on a normal golf course situation, which is going to be up at $6[\mathrm{pH}]$ or above, that plant will feel like it is in heaven.

Duncan's idea is to get the cultivars buffered against extremes like very compacted, acidic soils and extreme moisture availability situations.
"That plant has to be able to react to those wide swings. If it can do that, it's going to persist over time," he reckons.

## gOLF COURSE APPLICATIONS

What does this mean for golf courses?
"We're going to start seeing it used more and more on golf courses," Duncan said. "People on golf courses don't like to have to replant year after year."

He predicted new tall fescues will initially be used more in the roughs.
"Then, as we get finer and finer textures and improve adaptability to lower mowing heights, we'll see it more in the high-traffic areas. It's just a matter of time. It will give golf courses more flexibility than they have now," he said.
Duncan predicted the new generation will be overseeded on warm-season grasses, and used in blends with coolseason grasses.
"It might replace ryegrass in overseeding," he added.
"The domino effect from this will be tremendous," he said. "You will see a lot more blending, rather than singlespecies planting.
Funk pointed out that present varieties aren't as adaptable to the closer mowing
heights as traditional golf-type species.
"In the future that may change," he said.
Tall fescues, Funk said, do have the advantages of a deep-root system and of having Acremonium endophytes, which greatly enhance their disease- and stress resistance

Duncan said the near future holds in store substantially improved disease resistance.
"But I have to improve these other characteristics and get a healthy plant first," he said. "We've indirectly begun working on the pathogen problem [with pythium blight and rhizoctonia brown patch]."
"We haven't found any good stable genetic resistance to pathogens yet. But I think if we can improve stress tolerance, we may see these genes expressed if they're out there. And if Reid Funk doesn't have them, I don't know who does. He's got the most complete collection of tall fescues in the world."
Pointing out that tall fescues traditionally haven't done well in the South, Duncan said, "We're going to change that."


[^0]:    ASPA READIES CONFERENCE
    NASHVILLE, Tenn. - The American Sod Producers Association will conduct its Summer Convention \& Field Days here, July $14-16$, stressing credit and collection policies that can make or break a business. The event, centered at the Opryland Hotel, will include the educational program July 14 , tours of the Thomas Bros. Grass Co. farming operation, and equipmentdemonstrations July 15 and 16 . More information is available from the ASPA at 1855 -A Hicks Road, Rolling Meadows, Ill. 60008.

