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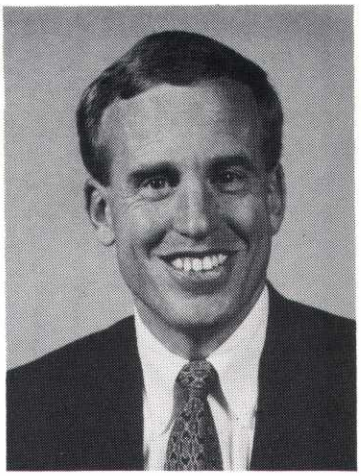
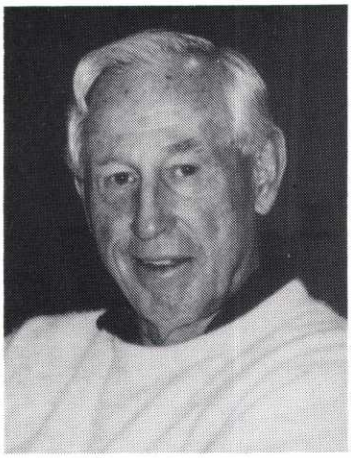
# Trans-Miss Grants $8,000 In Annual Scholarships To GCSAA's 'Footsteps On The Green' Program



**STEVE MONA**
*CEO / GCSAA*



**TOM CROW**
*Trans-Miss President*

On July 1, the Trans-Mississippi Turf Scholarship Fund began funding the "Footsteps on the Green" award competition which offers educational aid to the children and grandchildren of members of the Golf Course Superintendents Association who are following in their parents' or grandparents' footsteps into the golf course management profession.

In a joint announcement by Tom L. Crow, president of the Trans-Mississippi Turf Scholarship Fund, and Steve Mona, chief executive officer of the GCSAA, the Trans will grant $8,000 to the Footsteps program on an annual basis.

**The first place winner of the competition receives a $3,500 scholarship. Second place will get $2,500 and third place $1,500. In addition a merit award of $500 goes to the fourth place winner**

"We are pleased to support this excellent program which falls in line with the spirit of the scholarships we have granted since 1953," said Crow, "and we will continue our regular scholarships as we help the GCSAA with its Footsteps program."

Mona, expressing his appreciation for the Trans-Mississippi support of the GCSAA Footsteps competition, commended the Trans "for its dedication to education and promoting the game of golf."

**Eligibility requirements** call for one or more of the applicant's parents or grandparents to have been a GCSAA member for five or more consecutive years and currently must be an active GCSAA member in one of the following classifications: A, B, C, Retired-A, Retired-B or AA-Life.

The competition is open to natural or adoptive offspring of GCSAA members. Children or grandchildren of deceased members also are eligible if the member was active at the time of his or her death.

**Past winners are ineligible to apply the following year, but they may re-apply after a one-year hiatus.** Preference will be given to applicants who have not won in the past. Although any number of students from the same family may apply, only one student per family will be eligible to receive an award.

Current members of the Board of Directors/Foundation Board of Trustees and their families are not eligible to receive this award.

**Applicants must be enrolled full-time** in a recognized college/university undergraduate program in a major field related to golf/turf management and must have completed 12 credit hours in a major field of study (sophomore, junior or senior). In the case of a two-year program, the student must be enrolled full-time and must have completed 12 credit hours, a minimum of which should be nine hours of golf course management related courses. Applicants must be pursuing a career in golf course management.

Applicants will be evaluated on academic achievements, extra-curricular activities and community involvement, which may include membership in a GCSAA student chapter.

Applicants also must complete a 100-word essay on why they have chosen a career in golf course management and describe their own observations, insights and expectations about their professional and career goals. The essay must be original and not previously submitted to the GCSAA.

**Financial need shall not be a factor in the selection,** but an applicant must be a GCSAA member.

### APPLICATION PROCEDURES

Students must complete and submit an application form and supply the following under one cover:

1. Transcripts from all high schools and colleges attended, including the most recent semester completed.
2. Typed original essay.
3. All applications must be postmarked by April 15, 2001.
4. Additional application booklets may be obtained from Affiliated Chapter Presidents, the GCSAA Career Development Department or on the GCSAA website: (www.gcsaa.org).

**"It is important** to follow directions exactly," said Teri Harris, director of development for the GCSAA.

The packets should be sent to:

GCSAA Career Development Department
GCSAA Footsteps on the Green Award
1421 Research Park Drive
Lawrence, KS 66049-3859

# Mix and Blend Cool-Season Grasses

*Cool-season mixes and blends offer important advantages over single-variety stands. However, not all combinations and cultural strategies bring success.*

**By BRAD S. FRESENBURG**
*University of Missouri Turfgrass Research Center*

Tall fescue/Kentucky-bluegrass mixes offer the drought tolerance of fescue and the recuperative potential of bluegrass in one stand. Newer varieties of tall fescue have made such mixes more compatible.

People frequently ask turfgrass specialists to provide the best selection of turfgrass species and cultivars for a variety of situations. "What variety do I plant?" is probably the No. 1 question we hear. To answer this question, you must first consider its intended use (home, golf course, athletic field, etc.) and the maintenance (frequency and height of mowing, fertility, irrigation, etc.) it will receive. However, the most common misconception is that one species and cultivar will solve all their problems. This usually leads to questions about turfgrass mixes and blends and why a monoculture is not the answer.

### Why Use Mixes and Blends?

A mixture is a selection of two or more species of turfgrass that are morphologically, culturally and aesthetically compatible. A blend contains two or more cultivars or varieties of a single species. The desirability of a mix vs. a blend usually depends on what the client finds pleasing to the eye. Many people prefer blends, which often are more uniform in texture and color. However, people may need disease resistance, wear tolerance or a certain desirable texture or color. Such needs often require a mix.

Many turf managers are not aware of the enormous selection of cultivars available for each species of cool-season grass. The National Turfgrass Evaluation Program (NTEP) is evaluating more than 100 cultivars each of tall fescue, Kentucky bluegrass and perennial ryegrass. You could spend hours looking through the NTEP data to select the best species and cultivars for your region. Each trial generates data on visual quality, color, density, leaf texture, wear tolerance and disease resistance and other characteristics. This is the same information many turfgrass specialists use when they make recommendations.

With so many cultivars and so much information about them, you might think that an ideal variety exists for every situation. So why do we suggest mixes and blends of turfgrasses? It's simple. A blend of several cultivars-we usually recommend three or more-allows the strengths of the many to mask the weaknesses of one or two. For example, Kentucky-bluegrass cultivars have varying levels of dollar-spot resistance. If you were selecting components of a blend of Kentucky bluegrass for an athletic field based on quality and wear tolerance, it's possible that some of the cultivars in the blend might have low resistance to dollar spot. Therefore, you would rely on the more-resistant components of the blend to help hide the susceptibility of the cultivars with the lowest resistance.

The same holds true for mixes. When an entire species is widely susceptible to a particular disease, such as tall fescue to brown patch, a mix with other, less-susceptible species will help cover these weaknesses. While a tall-fescue blend would work well in a non-irrigated athletic field, a mix that also included a blend of Kentucky-bluegrasses would help provide a more speedy recovery from wear. Kentucky bluegrasses have a rhizomatous root system and tillers that allow it to recover better than tall fescue. By contrast, tall fescue recovers slowly, by tillers alone. In highly trafficked situations, this is not adequate to counter the wear that the turf receives.

Notice that when I talk about mixes, I suggest that each species includes a blend of two or more cultivars. Monocultures or mixes with species represented by a single cultivar may be disastrous. If that particular cultivar shows poor quality, has a differing leaf texture, is highly susceptible to a disease or has some other strikingly different characteristic, the aesthetic value or function of the turfgrass may decrease.

### Maintaining Mixed and Blended Stands

Turfgrass mixes and blends will have specific characteristics (color, texture, wear and disease resistance, etc.) based on the grasses you select. Once you develop and establish a mix or blend, can you expect these characteristics to remain forever? Do cultural practices such as mowing, fertility and irrigation change the makeup of the stand? Are some species more aggressive than others? These are a few of the questions we have tried to answer at the University of Missouri Turfgrass Research Center (Columbia, Mo.).

Over the past 20 years, a proliferation of tall-fescue varieties has led to the availability of many fine-textured and aggressive cultivars that are relatively more compatible with Kentucky bluegrass and perennial ryegrass. The newer turf-type tall fescues produce more tillers than the old Kentucky 31, which results in a finer turf texture. This allows these fescues to compete with the more aggressive

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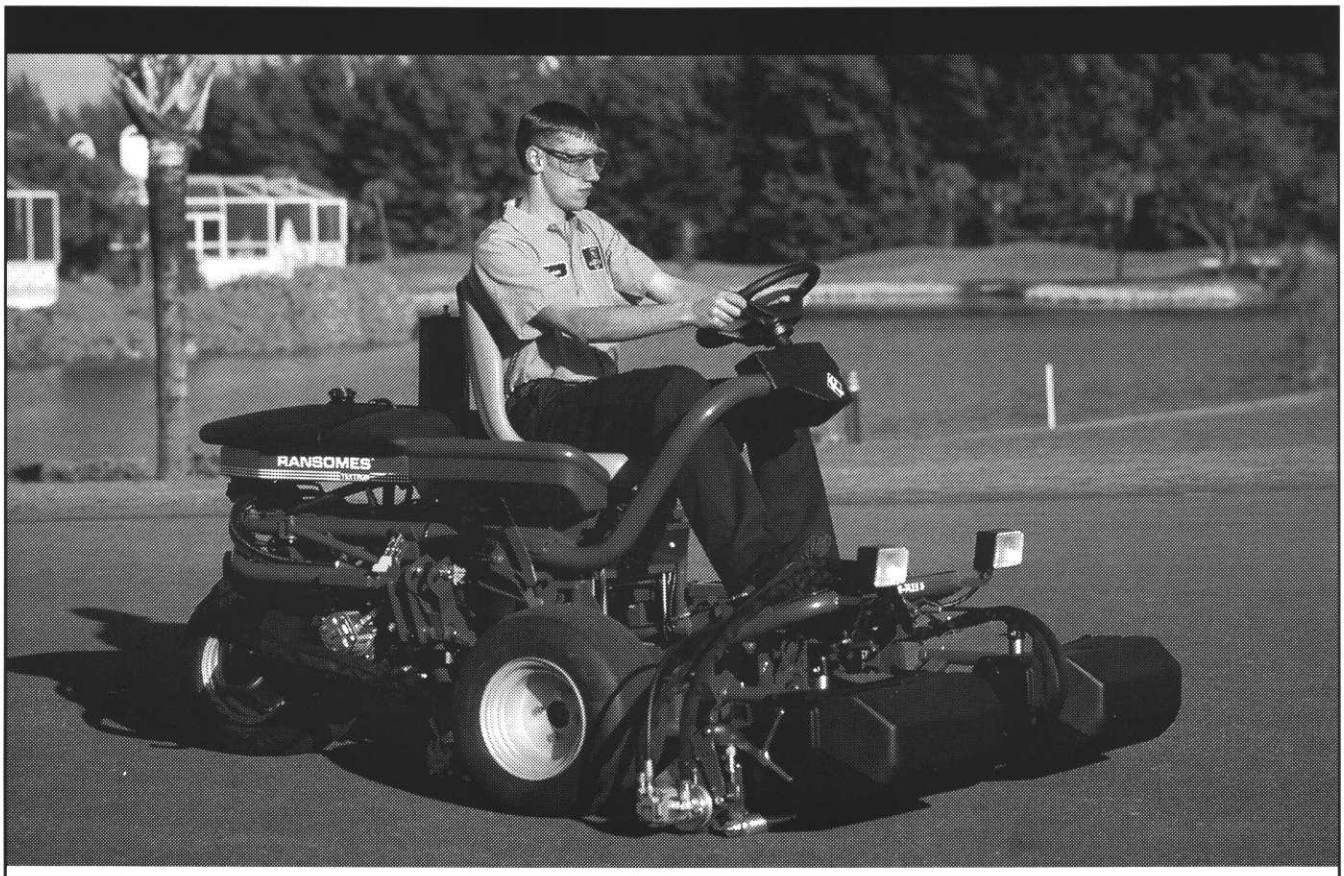


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# Grasses--

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Kentucky bluegrasses, resulting in a more compatible mix. Finer leaf texture also gives the turf-type tall fescues a more pleasing appearance because their leaf widths are similar to many of the bluegrasses. Additionally, the turf-type tall fescues do not look as clumpy as older varieties. However, in a thinned stand, they still can develop a clumpy appearance.

Dr. K. L. Hunt (of the University of Missouri, Columbia) has performed research to examine the establishment and maintenance of single-species blends and mixes of tall fescue, Kentucky bluegrass and perennial ryegrass under several specific conditions: two mowing heights (5/8 and 7/8 inch); three nitrogen levels and application timings (1.5 pounds in fall, 3.0 pounds in fall and 3.5 pounds divided between spring and fall [all rates are pounds of nitrogen per 1,000 square feet); and no irrigation.

This work resulted in several conclusions. Tall fescue (initially 60 percent of the mix) remained competitive with Kentucky bluegrass and still composed almost half of the mix after 5 years. However, with perennial ryegrass, the tall fescue decreased by 40 percent and was not competitive over the 5-year period. This could have been due to the fact that perennial ryegrass germinates much faster than tall fescue for a stronger start. In the three-species mix of tall fescue, Kentucky bluegrass and perennial ryegrass, tall fescue decreased to only 9 percent of the mix after 5 years. The competitiveness of Kentucky bluegrass and the faster start of perennial ryegrass apparently won out. Nitrogen levels and mowing height had little effect on the balance of species in any of the mixes.

Hunt found better quality in the blends that contained tall fescue during a drought in 1987. This adds credibility to recommendations to use tall fescue in non-irrigated situations. Hunt also concluded that turf stressed by low mowing height (5/8 inch) was more prone to disease. This may have played a role in the final composition of species in the mixes in this study.

This study dealt with mowing heights similar to golf-course fairways. What would happen if the mowing height were increased to an athletic-field height? What about supplemental irrigation? How would traffic affect the composition and recovery of these mixes? These questions arose as a result of Hunt's early work.

**More Research On Mixes and Blends**

To answer questions such as these, other researchers (headed by Dr. J. H. Dunn, also at the University of Missouri) designed a study to determine the influence of additional management factors on tall fescue, Kentucky bluegrass and perennial ryegrass mixes and blends. With various combinations of these species, we set up study plots in the fall of 1989.

*(Continued on Page 26)*

## Grasses--

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While the addition of irrigation to this study improved the quality of some plots, it also created a moist environment that promoted diseases in warm temperatures. Kentucky bluegrass and perennial ryegrass maintained better quality under irrigation than tall fescue, which was more susceptible to disease. Conversely, bluegrass and ryegrass were more likely to "shut down" and go dormant under dry conditions. Therefore, their quality fell below that of tall fescue at the non-irrigated site. Again, this shows the higher drought tolerance of tall fescue over bluegrass and ryegrass.

Under irrigation, diseases increased, including a higher rate of brown patch in all mixes and blends containing tall fescue. However, the tall-fescue blend did have less brown patch than the dwarf-type tall-fescue blend. The dwarf types tend to grow more slowly, reducing their ability to recover as rapidly. However, mixing dwarf-type tall fescues with other species made brown-patch infection less noticeable and similar to the standard tall fescues. Kentucky-bluegrass and perennial-ryegrass mixes and blends were both susceptible to dollar-spot infection, but perennial ryegrass was far more susceptible over the life of the study. However, mixing perennial ryegrass with tall fescue decreased dollar spot in the stand by 30 to 40 percent compared with perennial ryegrass alone. We saw a similar response in the mixes of tall fescue and Kentucky bluegrass. In 1993, brown patch was 33 percent less in a mix compared with the tall-fescue blend. This demonstrates how mixes can be beneficial when one species is highly susceptible to a particular disease.

The balance of species within the mixes varied somewhat over time from the original seeding. After 5 years, we found that the tall-fescue/Kentucky-bluegrass mix consisted of 62 percent tall fescue and 35 percent Kentucky bluegrass. In the dwarf-type tall-fescue mix with Kentucky bluegrass, the average balance was more equal-48 and 44 percent, respectively. (In both cases, the remaining few percent consisted of weeds.) This shows that tall fescue can remain competitive with Kentucky bluegrass. However, Kentucky bluegrass was more competitive in the irrigated site.

All mixes that included perennial ryegrass were dominated by that species over the 5-year study period regardless of mowing height and irrigation. This is consistent with the work completed by Hunt in 1989.

We were surprised to find that mowing heights and simulated traffic had little effect on the balance of species with

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# Grasses--

*(Continued from Page 26)*

in the mixes. However, the study did not use constant traffic. Perhaps the balance of species would have been different if the mixes were exposed to more intense traffic. Nevertheless, in the early 1990s, we applied heavy traffic to the tall-fescue, Kentucky-bluegrass and perennial-ryegrass NTEP trials at the University of Missouri and found only minor differences among species in the rate of wear and recovery. All species eventually recovered.

### Selecting Your Mix or Blend

Regardless of the situation, certain concepts will help you decide on the best species and cultivars to use. Our studies confirm that tall fescue is the most drought-tolerant major turfgrass species. Thus, it is the best choice for situations lacking irrigation. Be sure to avoid low mowing heights in fescues-their quality improves noticeably with mowing heights greater than 0.75 inch. Extension specialists typically recommend a mowing-height range of 2 to 4 inches for tall fescue.

Breeding has made many tall fescues competitive enough to mix with Kentucky bluegrass, which is particularly important in high-traffic situations where you need a speedy recovery from wear. Seed mixes consisting of 80 to 90 percent (by weight) tall fescue and 10 to 20 percent Kentucky bluegrass seem to work well.

**Use Kentucky bluegrass and perennial ryegrass in areas that receive irrigation.** Both species adapt well to a range of mowing heights, but the quality of perennial ryegrass is better with heights less than 1.5 inches. If your goal is to have tall fescue or Kentucky bluegrass as your dominant species, avoid mixes with perennial ryegrass, which tends to dominate all stands, regardless of management.

In general, we suggest keeping perennial ryegrass under 20 percent of the turf stand in the Transition Zone, where it is quite susceptible to both dollar spot and brown patch. Nevertheless, perennial ryegrass is useful for quick cover of worn areas due to its rapid germination and growth at times of the year when disease pressure is low.

If you find a mix or blend that works well for your site, periodic overseeding of the original mix or blend will help maintain the quality, color and function of the turf. Also, turfgrass managers who are willing to apply fungicides for disease control will find that their turf is more tolerant of a range of management practices (mowing height and irrigation).

Dunn continues to study tall-fescue mixes at the University of Missouri Turfgrass Research Center, where he is fine-tuning his work with tall-fescue/Kentucky-bluegrass combinations. He is attempting to determine the influence of several seeding rates and Kentucky-bluegrass blends on the competitiveness of tall fescue in mixes with Kentucky bluegrass. Information on this work should be available in a few years.

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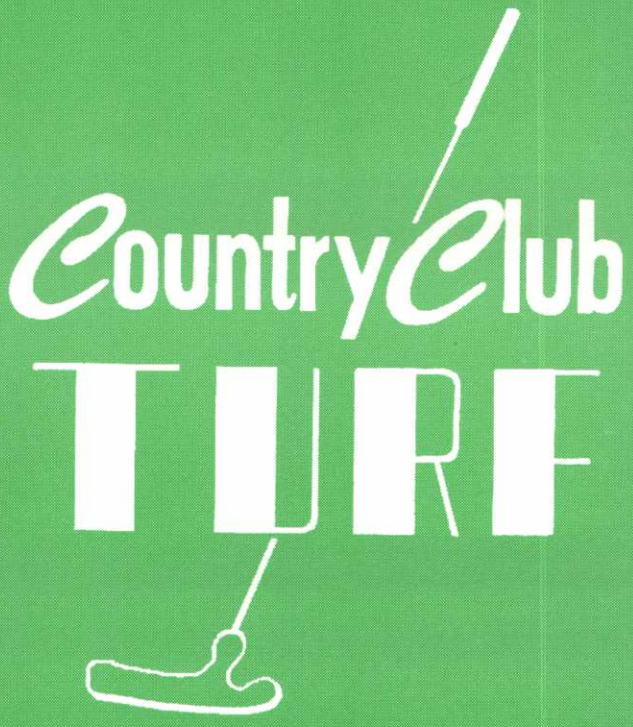


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# Syringing and Hand-Watering Quench Greens' Thirst

*Research suggests that the main benefits of syringing and hand-watering may not result from cooling of the turfgrass canopy. Rather, these practices simply give turf a small "drink" when it needs it most.*

By CHARLES H. PEACOCK
*North Carolina State University*

To develop a successful cultural program for your turf, you need a basic understanding of the adaptation, characteristics and cultural requirements of turfgrasses and the influence of the environment on their growth and development. The limiting factors in plant growth, in descending order of importance, are light, temperature, moisture and nutrients. All of these factors occur naturally and directly influence your management practices. Thus, you cannot separate your cultural program from the influence of the environment, particularly weather conditions, including:

* Light, which provides the energy to drive photosynthesis.

* Temperature, which determines the rate of growth and metabolism.

* Moisture, which is critical to metabolic processes and heat dissipation.

* Wind, which promotes the transfer of heat and drying conditions.

### The Challenge of Irrigation

Turfgrass cultural practices include mowing, fertilizing, irrigating, cultivating (coring, slicing, spiking or vertical mowing), rolling, topdressing and managing pests. While none of these is necessarily more important than any other, one of the most difficult to manage is irrigation.

Turf managers perform irrigation to ensure an adequate supply of moisture for turfgrass growth and to wash fertilizers and pesticides into the soil. In most situations, irrigation is a supplement, not a substitute, for rainfall. Often, however, total annual rainfall is inadequate, and the only way turf can survive is with the water you supply through irrigation. In other regions, adequate rainfall occurs annually to support turf, but its uneven distribution makes irrigation necessary at some times of the year.

What happens to rain or irrigation water in turf? One fate of water is evaporation, the physical change of water from the liquid to the gaseous state. This requires energy. We usually think of the radiant energy from the sun as a cause of evaporation (which it is), but advective and conductive heat transfer also cause evaporation. Transpiration is the loss of water vapor from plants, mostly through the stomata (tiny pores on the leaf surface that plants can open and close). The total amount of water loss-through a combination of water that evaporates from the leaf and soil surfaces, plus the water that plants lose through transpiration-is evapotranspiration, or ET.

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