

# U of M Update

By  
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University of Minnesota



Fall quarter is again up and running at the University of Minnesota. Fall is especially busy as a new crop of freshmen have arrived and the upper class students are scrambling to get all their required classes and credits in on schedule for graduation.

These days an undergraduate class is a very diverse group. About 40 percent are women, about 40 percent are 'older' (+26), about 15 percent already have a bachelor's degree in hand, and about 10 percent are fully employed in their chosen field and have returned for more information.

The area of Horticulture that I teach in, Environmental Horticulture, is also very diverse — that's good. Today's curriculum must serve the industry of the future. That means a broad scientific base, lots of business and lots of communication. The commodity (technical) courses that provide industry specifics are as important as ever, but, a very important piece of that is how and where to find the information they need. As the information 'bank' continues to grow, the process involved in finding it becomes even more important.

The Department of Horticultural Science has prepared a brochure that outlines the options available to prospective students. If you or someone you know is considering a course or career in turf or grounds, nursery landscape design and implementation or floriculture, call the department, 612-624-5300 and ask for the brochure *DISCOVER HORTICULTURE* or pick up a copy at the University booth at the December conference.

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Cynthia Ash, Extension Plant Pathologist, University of Minnesota, in cooperation with plant pathologists at North Dakota State University and South Dakota State University has published a *Color Diagnostic Guide to Diseases of Trees and Shrubs*. This is a fast, symptom-specific reference to 90 of the most common regional problems. Call your local extension educator to get a copy.

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Pesticide Applicator Training dates for Turf and Ornamentals have been set for 1995. These dates re-certify you for 1996. (Remember the re-certification you receive at this year's MTGF/MGCSA December Conference is for 1995). Help us pass the word to all turf professionals that they will now be able to receive their re-certification at next year's MTGF/MGCSA Greater Minnesota Turf and Grounds Conference and Show.

The 1995 re-certification dates are:

Commercial and Non-commercial applicators: Jan. 11, 12,

13, 1995, MNLA Convention and Trade Show, Minneapolis Convention Center, Minneapolis, Minn.

Commercial applicators: Feb. 6 or 7, 1995, Earle Brown Center, St. Paul Campus.

Non-Commercial applicators: Feb. 14 or 15, 1995, Earle Brown Center, St. Paul Campus.

Commercial and Non-commercial applicators: Feb. 22, 1995, Holiday Inn, Mankato, Minn.

**Commercial and Non-commercial applicators: Dec. 11, 1995, MTGF/MGCSA Greater Minnesota Turf and Grounds Conference and Show, Minneapolis Convention Center, Minneapolis, Minn.**

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The MTGF/MGCSA planning committee for the **GREAT MINNESOTA TURF AND GROUNDS CONFERENCE AND SHOW** in conjunction with the **67TH MINNESOTA GOLF COURSE SUPERINTENDENTS' ANNUAL MEETING** has been working very hard to put together a *fantastic* December conference and show.

The committee has operated with three major goals in mind. First, to bring you a state conference as good as you could find anywhere in the country. Secondly, to develop a program that fits the educational needs of all professionals in the turf and grounds industry. Thirdly, to do all this at a cost that nearly everyone can afford. I believe they have met their goals.

**Now, we need your help.** For a conference and show of this caliber to be successful, we need to reach a wide range of turf and grounds businesses and departments. This is especially important, and especially difficult, as this is the first year of a multi-association conference. *Many of the allied associations in the MTGF have not had the opportunity to attend a major conference and show.* We are asking **you** to contact the turf and grounds businesses and departments in your area. Share information about this year's conference and show and let them know how beneficial past conferences have been to you. You might even suggest ways for them to justify their attendance. Help the MTGF/MGCSA planning committee make this as successful an event for all turf professionals as it has been for the MGCSA in the past.

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This month's feature article is contributed by Robert Mugaas, Hennepin County Extension Educator for the Minnesota Extension Service. Bob is also a very active member on the University Advisory Committee to the Minnesota Turf and Grounds Foundation.

## Water Conservation and Turfgrass

By Robert Mugaas  
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It is unfortunate when one element of our landscape (turf) gets pitted against another element (trees and shrubs) on the basis of its appropriateness in the landscape. This is often what happens when it comes to environmental issues

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such as water use and conservation in the landscape. According to a recent article by Dr. James Beard and Dr. Robert Green\*, our turfgrasses are and should remain a vital if not essential part of our urban landscapes, not to the exclusion of trees and shrubs but in coexistence with them. Following is a brief summary and adaption of the water conservation section of that paper as it appeared in the *Journal of Environmental Quality*, May-June 1994.

Proponents of xeriscaping as well as others have often encouraged reduction of turfgrass areas while increasing the use of trees and shrubs as a means of conserving water in urban areas. However, if one were to look for scientific data to support that view, you would find the reference shelf empty. In fact, from the limited research that is available, the opposite position would likely be supported. That is, our turfgrasses may be more effective water conservers than our trees and shrubs.

One basis for evaluating their ability to conserve water is to study their evapotranspiration (ET) rates. Remember, ET is the measure of water lost through evaporation and transpiration through the plant. Very few tree and shrub species and cultivars have been examined for their ET rates while many of our turfgrass species and cultivars have been evaluated. Comparing those ET studies that are available, trees and shrubs are typically found to be greater water users than our turfgrasses on a per unit land area basis. It should also be noted that the major world grasslands are located in semi-arid regions, while forests are located in areas of higher rainfall. Minnesota is a good state to observe this phenomena as you travel from the Arrowhead region in the northeast at the more arid southwest corner.

Many plants mentioned on low water use lists are based on the inaccurate assumption that survival in arid landscapes equates to low water use rather than their being only drought resistant. These same species placed under an irrigated urban landscape often become high water users. This results from the fact that the plant mechanisms for dealing with ET and drought resistance are distinctly different. Results from research in Texas have found a number of turfgrass genotypes capable of withstanding and remaining green 158 days without irrigation under hot summer conditions through dehydration and avoidance. At this time, similar detailed studies of dehydration avoidance and drought resistance among trees and shrubs is lacking.

Many turfgrass species will naturally "harden off" or acclimate to the warm dry conditions of summer by ceasing growth, becoming dormant and turning brown until adequate rainfall returns. Research has shown that these properly conditioned turfgrasses will recover and turn green once watering is resumed and/or ample rainfall returns. If conserving water is desired, then a dormant turf will use little water while many of our trees and shrubs continue to remove water from greater soil depths. (Note: Also, many of the trees and shrubs around the Twin Cities

have been dropping both green and yellow leaves this year as a means of conserving moisture and adjusting to the drier conditions.)

While seeking lower ET rates, we must also consider the total impact of this on our urban ecosystems. As urban areas are already significantly warmer than adjacent out-state areas, lowering ET rates lessens the transpirational cooling and increases the heat load in urban areas, thus increasing the need for greater mechanical air conditioning requirements. For example, a turf in a dormant condition is going to be warmer than one receiving ample water to sustain growth and remain green. Therefore, when comparing the costs and supply of water with energy, it may be more prudent *not* to strive for the lowest possible water use in lawns and landscapes. Comprehensive research that considers the effects on all the urban landscape components is still needed to assist in the development of prudent and cost effective urban water conservation strategies.

Presently, valid scientific information supporting the use of trees and shrubs instead of turfgrasses for water conservation strategies does not exist. Improper watering practices and poor landscape planning are more often to blame than any one group of plant materials for water being wasted in the landscape. Rather, the right plant and combinations of plants for the right design and the right place in water conservative landscapes will be much more effective than singling out particular plant materials to be excluded from the landscape. Trees, shrubs and lawngrasses all have a place in maintaining the plant diversity of our urban landscapes. It is important that we not lose the positive environmental benefits that each group of plant materials can contribute to an aesthetically pleasing and environmentally beneficial urban landscape.

\*Summarized and adapted from: Beard, J.L. and Green, R.L., *The Role of Turfgrasses in Environmental Protection and Their Benefits to Humans*. *Journal of Environmental Quality*, 23:452-460 May-June 1994.

### Making a Point About Change

Having trouble persuading your staff that incremental change is worth the effort—and that change doesn't have to be immediate, dramatic and sweeping?

If so, try this exercise suggested by Richard Ruhe, a consultant with Blanchard Training and Development:

Tell staff members to imagine they've just been told they have won a state lottery and they have one minute to choose between two payment methods:

- \$250,000 a day for 30 days.
- One cent the first day and double the amount each day for 30 days.

*To make it easier for you: The first method totals \$7.5 million, the second method totals, \$10,737,128.23!*