

## Turfgrass Water Conservation

### SEARCHING FOR DROUGHT TOLERANT CULTIVARS



**WITH FRESH WATER** supplies becoming severely limited around the world, the uses of water are being scrutinized more closely than ever before, especially for landscapes, athletic fields, home lawns and other non-agricultural uses. This means the development of turfgrass cultivars with improved tolerance

to limited or low quality water remains as one of the most important research objectives facing the turfgrass industry.

The Turfgrass Water Conservation Alliance (TWCA), a non-profit organization, has established a science-based method for qualifying cultivars for drought tolerance and other characteristics related to water conservation of grass seeds at low cost. The approach is to establish turfgrass under optimum conditions, allowing the full expression of above ground and below ground growth and then impose a long-term water deficit stress. Seed during the development of drought stress turf grass plots are monitored for their ability to maintain green cover under protracted drought stress, a process that identifies those cultivars with either low water use or extensive root systems. Those cultivars or selections that maintain green cover for longer periods would delay the need for supplemental irrigation, with the hope that natural rainfall can supply those needs before irrigation is required.

This approach to identifying turfgrass cultivars with superior drought tolerance with as much as 21 day delays in the onset of drought stress symptoms is marketed under the "Aqua Wise" brand, the "Water Star" brand, or the "Water Miser" brand. The criteria are very strict for acceptance into TWCA, and a variety must finish in the top statistical group to even be considered. For more information, including a list of approved turfgrass varieties, visit [www.tgwca.org](http://www.tgwca.org).

## COVER STORY CONTINUED...

### HEAVY RAINS PROMPT DRAINAGE DISCUSSION

**IT IS THIS WATER** that sustains the growth of the grass. Installing a drainage system will not remove any of the water held in the micro pores. The removal of excess water from the root zone will normally occur within two or three days.

A properly designed and installed drainage system will greatly assist in reducing the time required for excess water to be removed, often by fifty percent or more, depending on pore space size and distribution in the soil. Additions to the design of the basic drainage system can also increase the removal of surface water during high intensity rains, thus resulting in less water moving through the pore space. Athletic fields that do not have a drainage system can have a basic system installed for approximately \$20,000.

**Remember that an irrigation system should never be installed without a drainage system.**

Variation in costs will be influenced primarily by the availability of a drain outlet and the desire to have surface water removal. With modern installation procedures, the drain lines within the field can be pulled in the same as irrigation pipe and installed with minimum surface disturbance. The system can have a life expectancy of 50-plus years.

In closing, I have no doubt that before this season is over, there will be equal concern about the lack of water and need for irrigation. Remember that an irrigation system should never be installed without a drainage system. Maybe now is the time to take the first step in planning a total water control system – drainage plus irrigation. Note that the drainage system will only remove the excess water applied as irrigation, or irrigation followed by a heavy rain.

~ Murray Cameron quoted from "Wet weather spoils sports in city," Doug Hallett, Guelph Tribune, May 31, 2011.

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