



# Q&A "Water water everywhere" --but do you really know how to use it?

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## Have Questions?

SEND THEM TO DAVE MINNER AT IOWA STATE UNIVERSITY, 106 HORTICULTURE HALL, AMES, IA 50011, OR E-MAIL: DMINNER@IASTATE.EDU. OR, SEND THEM TO GRADY MILLER AT UNIVERSITY OF FLORIDA, P.O. BOX 110670, GAINESVILLE, FL 32611, OR E-MAIL: GMILLER@MAIL.IFAS.UFL.EDU.

The sophistication and simplicity of today's automated irrigation system is amazing, and all of the manufacturers are to be commended for providing the turf industry with a wonderful tool for growing grass. In fact it is so easy that we can flip a switch, punch a button, or program a computer and we can supply water for a year without ever stepping foot on the field. They are the good guys for providing such a dynamic water delivery system. Perhaps some day they will have an effective tool to help us irrigate, possibly remote sensing, but until that time you still need to make that human judgment of when to water. The following is a simple concept for teaching yourself how to water:

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Turn off the daily part of the automatic irrigation system and use the manual mode so that the irrigation interval is based on your determination of the fields' need for water that is based on your visual observation.

Inspect the field each day and decide if it needs water. Grass does not need to be watered until it begins to wilt! If you are watering grass that has not started to wilt then you are watering too frequently. Determine how many days you can go without watering and then keep trying to extend the irrigation interval. Too many times I hear this comment from

turf managers and it clearly indicates a flawed strategy: "The field looks good (with no wilt), but I will give it just a little water tonight just to make sure she keeps growing." Extra water or unsolicited watering does not translate into better growth. Instead of using the philosophy of extra water for extra growth, you should consider using the least amount of water that will still keep the plant growing enough to require normal mowing.

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Sport field managers with the keenest eyes will anticipate wilt, notice when first wilt starts, and then irrigate in time so that the grass quickly recovers. Mild wilting is not a severe stress on grass and in fact it provides benefits to the plant and soil system. Just before wilt a hormonal process in the plant signals growth of root hairs and root mass. There is very little root hair production when soil pores are continuously filled with water.

Mild wilting insures that the soil has sufficiently dried to allow maximum infusion of air to the roots. Plant cells and leaf tissues that grow under maximum water content are thin walled with weak structure. Plants that are summer hardened by cycles of mild wilt and recovery have smaller, thicker cells resulting in more wear-resistant tissue.

As a general guide mature sand-based fields should be able to last at

least three complete days without watering before they show signs of wilt that signals the proper time for the next watering. Finer textured soils with more silt and clay can often stretch their watering cycle out to once every 1-2 weeks. Another general target for watering is approximately one inch of water per week from either irrigation or rain.

Here are some specific tips to help you develop a watering strategy:

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"Foot printing" is an indication of pre-wilt. Just before wilting leaf water content decreases to a point where leaves are no longer rigid and full of water. Plants with sufficient water quickly return to their normal upright shape. When wilt is imminent grass remains depressed and footprints are more noticeable. Waiting to see signs of "Foot printing" is therefore another visual key to indicate when to apply water.

Wilt is the visual drooping, rolling, or folding of turfgrass leaves that results in loss of plant turgidity. The most obvious indication of wilt is the dark blue/gray or purple appearance of the leaves. Notice the areas of your field or facility that wilt first. These first-to-wilt areas can be routinely observed to help you determine when to irrigate. You may have heard the adage "water deep and infrequently."

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# Calendar of Events 2001 continued

Nell Cobb, (888) 268-9888 or sodfarm@c-gate.net.

## November 10-13

12th annual Green Industry Expo (GIE), Tampa, FL. Contact: Professional Lawn Care Association of America, 1000 Johnson Ferry Rd., NE, Suite C-135, Marietta, GA 30068-2112; (770) 973-2019; fax (770) 578-6071; info@gieonline.com. Web site: <http://www.gieonline.com>.

## November 13-15

New York State Turfgrass Association's (NYSTA) Turf and Grounds Exposition, Oncenter, Syracuse, NY. Contact: NYSTA, PO Box 612, Latham, NY 12110; (518) 783-1229/(800) 873-TURF (8873); fax (518) 783-1258; nysta@nysta.org. Web site: <http://www.nysta.org>.

## December 3-6

35th Ohio Turfgrass Conference & Show, Greater Columbus Convention Center, Columbus, OH. Contact: Kevin Thompson, OTF, PO Box 3388, Zanesville, OH 43702-3388; (888) 683-3445 or (740) 452-4541, ext. 3151; fax (740) 452-2552. Web site: <http://www.ohioturfgrass.org>.

## December 5-7

The Rocky Mountain Regional Turfgrass Association's (RMRTA) 48th annual Conference & Trade Show, Colorado Convention Center, Denver, CO. Contact: RMRTA, 9101 E. Kenyon Ave., Suite 3000, Denver, CO 80237-1805; (303) 770-2220; fax (303) 770-1812; rmrta@gwami.com.

## December 11-13

New Jersey Turfgrass Expo 2001, Trump Taj Mahal Resort & Casino, Atlantic City, NJ. Contact: Rutgers University, (732) 932-9375.

Watering just at the time of wilting will maximize the time between each watering to give the infrequent part of this general rule of thumb. When wilt occurs nearly all of the available water in the soil is gone and you need to supply enough water to completely fill the root zone again. Think of your root zone as a tank of water. Run the tank near empty and then fill it back up. Filling the tank or thoroughly watering the field is another way of expressing "deep" irrigation. Depending on the soil's water holding capacity, it may take 0.5 to 1.5 inches of water to replenish the moisture between these infrequent waterings.


Sand-based systems store less water so they need to be checked more often (daily), but not necessarily watered more often. Mild wilting on sand-based fields is a mandatory part of proper management to maximize rooting and traffic tolerance. Since water storage is minimal in sand systems, be prepared to water shortly after onset of wilt. A sand field showing mild wilt will usually need watering within 24 hours. If wilt is carried too far then tire tracking from equipment may injure turf. Tire traffic on severely wilted turf will


cause brown grass in the tire tracks a few days after driving on the wilted grass.

Black and gray discoloration of soils often referred to as "black layer," is a clear indication of excessive and improper irrigation. A nasal inspection of the soil will easily detect a stinky odor of methane gas from the anaerobic condition. This is a common problem on sand-based and native soil fields that are sodded and then over-watered in an attempt to make the sod grow-in faster.



This summer I met some great people at the Tennessee Valley Sports Turf Chapter's workshop in Knoxville. In addition to teaching me the greeting "hi-y'all," our host Bobby Campbell showed us his irrigation system on the Volunteers Stadium Field. As Bobby bent over and grunted to manually turn on one of the six big gun irrigation heads he imparted this bit of wisdom "over watering is not a problem for us since we have to walk across the field each time before we turn on the water." It's not the tool, but how you use it. Bye y'all.






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