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Are You All Wet?

by Bill Rhymes, Mallinckrodt, Inc., Shelby, NC

Imagine if you will, the mouth of the mighty Mississippi River as it empties into the Gulf of Mexico. While there is a main channel where most of the shipping moves, the river has broken up into many channels, all emptying into the Gulf. There is much marsh land and even completely dry land between these channels of water. Now, imagine a golf green, a garden, a flower bed or your hard, with rain or irrigation water falling on it. This water also channels down through the soil. There are wet areas, damp areas and completely dry areas.

When a soil or other growing media wets slowly or non-uniformly, it is due to the physical properties of the soil as well as the water. Hydrophobic organic components of soil and a preponderance of capillary pore space combine to restrict the rate of water movement into such soils. Water's high surface tension, due to strong cohesive forces, restricts movement into capillary pore space. The same physical forces that delay water movement into hydrophobic growing media or cause localized dry spots in turf also restrict or delay water movement out of wet spots, assuming the excess water has someplace to go.

The solution to both dry spots and wet spots is to **increase the rate of water movement** by providing a link between hydrophobic soil (or media) and hydrophilic water. Surface-active agents (surfactants) sold as wetting agents should do several things: 1) decrease water's surface tension; 2) facilitate water movement into dry soils; 3) remain absorbed onto the soil colloids after drying to effect rewetting; 4) facilitate drainage from areas prone to stay wet, and 5) have a wide safety margin on plant material.

Perhaps no other type product used in turf and ornamental industries causes as much confusion and misunderstanding as surfactants. Such names as detergent, dispersant, wetting or rewetting agent, penetrant, cleaner, spreading agent and emulsifier most often describe the action or result desired and area, as such, not descriptive when distinguishing between one and another. For instance, a detergent is also an effective wetting agent.

Rather than labor these names, it is sufficient for the professional turf and ornamental manager to recognize those products developed for wetting soil/artificial growth media. Have you attended any major turf or ornamental trade show recently? If so, you probably saw or were told about several wetting agents and why a particular one was "best on the market". Should you use one, and if so, which one and why? Here are some guidelines:

1. Don't buy water. Many products have very little active ingredients in them (some as low as 5%) and the rest is water. Initial cost per gallon is low, but they may not last but a few days in the soil.

2. Buy one that is all-wetting agent, i.e., 100% active ingredient. These are by far the most economical as only one or two applications are needed per growing season.

3. Buy one that has a history of success and consistently ranks at the top in university and experiment station tests.

4. Talk to other superintendents and growers. Many are using these good products and they'll be glad to tell you why they do and their product of choice.

(cont'd. page 24)

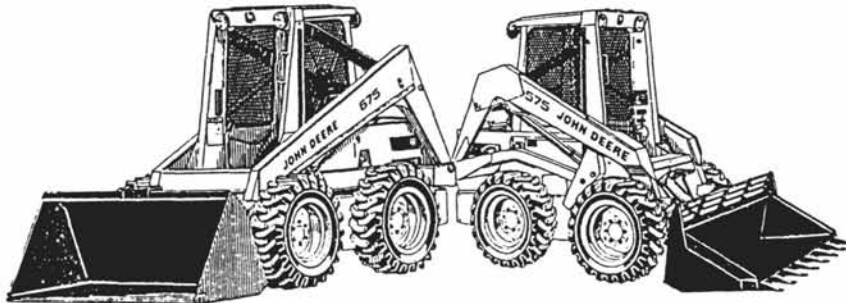


In past years we have commented on what a non producer Dan Murray is when it comes to paddling a canoe. Well, a picture is worth a thousand words. This was the end of the annual Fox River Canoe race and one can see Joel sure had a load to pull. Joel and Dan did turn in their best time of any previous race. Photo courtesy of Steve Buyansky of the "Beacon News"

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(Are You All Wet cont'd.)

5. When using, soil wetting agents must be **well watered** in (using a liquid type) or uniformly mixed with the soil (using a granular type). Left on the plant surface, they can be phytotoxic.

Here are some benefits to you for using a good soil wetting agent:

1. **TURF**

a. Dew elimination for several days following application may aid in disease control.

b. Fewer dry spots, fewer wet spots.

c. Less hand watering to correct for dry spots, giving conservation of water and manpower.

d. Soils able to absorb moisture more rapidly during heavy precipitation.

e. Less stress on treated fairways, greens, etc. — wilting less severe.

f. Encourages stronger, healthier turf by helping water soak into and spread more evenly through the soil.

2. **ORNAMENTALS**

a. Prevents plant loss under dry or wet weather conditions.

b. Treated soils (or soilless mixes) wet rapidly — less runoff.

c. Wets and drains the root zone uniformly.

Lastly, we generally think of the major benefit of using a good soil wetting agent as better use of available water. This does happen. However, of equal or perhaps greater benefit is that other chemical soil additives are uniformly distributed for maximum efficiency. Remember the opening paragraph about the Mississippi River and the dry areas between the channels? Our wetting agent has done away with these dry areas in our soils. Therefore, our fertilizer, soil fungicides, soil insecticides, soil herbicides, etc., are spread out evenly, and the plant root system gets a uniform "dose" of not only water but these expensive chemicals as well.

Wetting agents don't cost you money! They make money for you. Your turf and plants have responded better to all soil additives; hence, they are healthier. You have done a better job, in less time, and have saved money and manpower in many ways. You are more secure as a professional. You find you are not "all wet", just "wet enough".

Credit: Carolinas Newsletter, July-Aug., 1985



Bruce Williams, President MAGCS; presenting Frank Dobie, President Musser International Turf Foundation with a \$1,000.00 check in memory of Dr. Fred Grau.

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