

RESEARCH

Which wetting agent is best?

Only one person can decide which wetting agent is best: the superintendent.

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At the 2006 Golf Industry Show in Atlanta, I conducted a survey of everyone who attended any of my six half-day seminars. The survey, which I have used at GIS and regional seminars for the past few years, focuses on superintendents' use of biostimulants and wetting agents. In this article, I discuss the results of the wetting agent portion of the survey. The biostimulant results will be presented in a future article.

The attendees in my Atlanta seminars represented 43 states, seven countries and one territory (Guam). A poll of this diverse population should give a good indication of the use of wetting agents across the United States and beyond its borders. Ninety-one percent used wetting agents as part of their regular turf management program, and 98% had used a wetting agent under certain circumstances. These numbers clearly show how important wetting agents are to the management of golf course turf.

At the end of the survey, I ask superintendents to name one thing they would most like to know about wetting agents. The most common response is, "Which wetting agent is best?" Although this question appears straightforward, its answer is not. Over the years I have found that each superintendent has his or her own idea of what constitutes "best," not just for wetting agents, but for equipment, grass cultivars and a variety of other items and management practices.

Superintendents often consider several factors when choosing a wetting agent: overall efficacy, longevity of performance, management philosophy, phytotoxicity potential, available formulations, cost and product availability.

What makes a good wetting agent?

1. *Overall efficacy.* Obviously, a product's effectiveness is one of the top considerations in making a purchasing decision.



Figure 1. Wetting agents vary significantly in terms of efficacy, formulation, cost, availability and potential phytotoxicity. This photo shows the range in phytotoxicity caused by wetting agents applied to bentgrass during stress conditions.

Here I discuss overall efficacy only in relation to the relief of water-repellent soils that cause localized dry spot. As shown in the recent GCSAA/USGA wetting agent evaluation study (www.eifg.org/programs/research/wetagent_index.asp), wetting agents differ significantly in their ability to reduce soil water repellency. The GCSAA/USGA study also showed that a product's performance in one location does not predict its performance at another site. Therefore, wetting agent performance may be site-specific to some extent. Only the superintendent can determine which product is best for his or her particular situation.

2. *Longevity of performance I management philosophy.* There are various approaches to

managing localized dry spot with wetting agents. For example, some short-term products are applied at least every 30 days, and with season-long products, one application may last three to five months. In my seminars, superintendents are often evenly split in terms of the approach they favor. Season-long users like the convenience of a single application (or two half-rate applications one week apart) in the spring. Those who prefer the short-term approach believe that applying a wetting agent every 30 days gives them the flexibility of not applying a wetting agent when it is not needed. In some cases, the superintendent may use both strategies or other approaches on different areas of the golf course. Which approach is best depends on the management philoso-

phy of the superintendent. Again, only the superintendent can decide.

3. *Phytotoxicity potential.* Certainly, the potential for phytotoxicity is a major concern for all superintendents. Some products cause little or no phytotoxicity, whereas others can cause significant phytotoxicity if applied when the turf is stressed. Research and experience show that the potential for phytotoxicity is greatly reduced for all wetting agents if the product is watered-in after application and/or applied during the cooler nonstressful periods of the season. Nevertheless, some superintendents prefer not to chance the possibility of turf burn or discoloration and tend to choose products that are safe to use under almost all conditions. Other superintendents, who are familiar with a particular product, know the range of safety and will take the necessary precautions. Again, the answer to "Which is best?" varies by superintendent.

4. *Available formulations.* It is difficult to identify a single wetting agent as the best when, in fact, some superintendents select a wetting agent on the basis of the formulation. Wetting agents are not only available in liquid and granular formulations, but also in fertilizers, in biostimulants and as pellets. Pellets are often used in end-of-hose applicators or other in-line hose attachments that can be used for hand-watering. Not all wetting agents are available in every formulation, and not all formulations of each wetting agent have been tested independently. If formulation is a deciding factor, then ask peers and manufacturers for evidence regarding which product is best for your preferred formulation.

5. *Cost.* Many superintendents have mentioned that the cost of a wetting agent can be a significant issue. Because I do not have access to a price list for all the wetting agents on the market, it is impossible to comment on specific products. It appears, however, that the cost of wetting agents ranges from less than \$25/gallon to \$100/gallon. Rate and application frequency determine the actual cost of a product. A product that costs \$25/gallon and is applied at 12 ounces/1,000 square feet every 30 days costs the same as a product that is priced at \$100/gallon and is applied

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says . . .

- **The efficacy** of a wetting agent may be site-specific.
- **Frequency of application** can affect the ultimate cost of using a particular product, and cost may be the deciding factor in selecting a product.
- **The level of phytotoxicity** caused by wetting agents varies greatly.
- **Not all wetting agents** are available in all areas — nationally or internationally.
- **Superintendents should ask** the manufacturer for the results of university research on the products they are considering for purchase.

at 6 ounces/1,000 square feet every 60 days. Formulation also affects cost. Granular wetting agents or those formulated with a fertilizer will often cost more than the same product in a liquid formulation. When determining the cost of a product, superintendents need to look at more than the sticker price.

6. *Product availability.* One survey question was, "Which wetting agent(s) have you used?" The respondents mentioned 83 products. Several names were unfamiliar to me and may have been new to the market or available only in certain areas. All products are not necessarily available in all regions of the country. Therefore, availability may be a deciding factor in choosing a wetting agent.

7. *Supporting research.* Although our turfgrass research at the University of Georgia focuses on wetting agents, it is impossible to test all the wetting agents on the market. The time and resources for such an undertaking are not available. However, several companies are continually doing extensive university research on their products, and others do essentially none. Superintendents should ask the manufacturers to provide university data to support product claims. Although testimonials can be helpful, they are not a substitute for actual university data showing the phytotoxicity and performance of a product. Several universities around the country are well equipped to evaluate wetting agents. This type of research is not cost-prohibitive and ought to be within the realm of even the smaller companies committed to supplying reliable products to the industry.

Conclusion

In conclusion, identifying the "best" wetting agent is a decision for the superintendent. The factors that a superintendent considers in selecting a wetting agent — specific needs, expectations, management philosophy and budget — vary considerably and so will the final decisions.

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