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50 SHADES OF GREEN

This year's early warming brings the potential for increased pest pressure and an overall longer season for your pest control strategy. Let's look at how to ensure a season of green turf.

Identification. The key is properly identifying the problem. While this seems like a simple task, many times it is more complex. In fact, many superintendents send samples to labs only to find multiple answers. Stick to a lab that you: 1) are comfortable with and trust; and/or 2) find one that specializes in certain problems. For instance, some labs have spent years researching certain problems such as root *Pythium* and other "specialty" diseases.

Pesticide selection. Following positive disease confirmation, select the proper pesticide to apply. This is becoming more difficult due to the availability of numerous individual and pre-mixed products. Think of the new pre-mix products as combinations of individual chemical classes rather than simply saying, "I know this will control dollar spot, so this is what I'm using."

A note on resistance. I can't get into the details of pesticide resistance within the scope of this article. However, it is important to know the individual active ingredients being applied, particularly when utilizing pre-mix products containing two or more products. From the chemical-rotation standpoint, don't make a habit of putting out a pre-mix containing a DMI fungicide only to apply an individual DMI with the subsequent application. Details aside, I often find these products are applied based on the trade name and targeted organism, but all of the active ingredients that were actually applied are sometimes lost in the shuffle.

Now that you've selected a fungicide,

you can go and spray right? Well, not necessarily.

Application Techniques. With pest control, one difficulty is applying the right product the right way. Fungicides may be systemic, contact, localized penetrants, acropetal penetrants, or translaminar. The application techniques including nozzle selection, application volume, the need for post-application irrigation and others strategies depends on several factors including the way the pesticide gets in (or doesn't) to the plant, as well as the disease in question.

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When discussing strategies for disease control, I simplify the process to thinking about three basic regions for targeting turf pathogens.

For foliar diseases like brown patch or dollar spot, I will suggest applying fungicides with a nozzle that will maximize pesticide coverage in moderate water volumes (1 to 2 gallons/1000 sq. ft.). It may be helpful to apply these product to dry turf or to remove the dew prior to application.

For stembase and crown diseases such as anthracnose, I apply pesticides in moderate to high water volumes (2 to 4 gallons/1000 sq. ft.) and not watering-in.

In situations where it is not possible to apply high water volumes, watered-in the products with one or two turns of an irrigation head.

Applying pesticides in a drench or watering-in with a significant amount of water is reserved for pests that reside in thatch or soil, such as root *Pythium* species and several basidiomycetes responsible for fairy ring.

The dilemma. What if you decide to select a strobilurin fungicide for the control of a "root" disease like summer patch? Just because these fungicides are in the same chemical class does not mean they enter and move within the plant in the same manner. Of the four strobilurins, two are considered acropetal penetrants (move up from the point of contact), one is a localized systemic, and the last has translaminar activity.

So, should you water these products in to the thatch or soil to get the fungicide to the targeted pathogen? It depends on which product you select.

I typically treat these diseases in the "crown" category and recommend application at high water volumes and applying no post-application irrigation. Despite these being root pathogens, much of the damage still occurs close to the surface.

Rates and timings. For some diseases, preventive applications can result in less pesticide use over the course of the season. Curative control of dollar spot, for example, may require higher rates and shorter intervals to stop the pathogen and allow for recovery.

On the other hand, diseases like brown patch are easy to suppress. Curative control when symptoms are first observed is an effective strategy and may lead to fewer apps over the course of a season. Documentation your golf course's chronic and acute problems will allow you to determine which strategy is right for you.

Turf management is not black and white and there are many shades between the two. **GCI**