

# TURFGRASS TRENDS

## DISEASE MANAGEMENT

### Aggressive Dollar Spot Raises Important Questions

By J. M. Vargas, Jr.

Dollar spot seems to be emerging as more of a problem than it used to be. There is no research to explain the sudden occurrence of what appears to be a more aggressive strain of dollar spot. We can only speculate on why this is happening.

The fungus that causes dollar spot, *Rutstroemia floccosum* (formerly called *Sclerotinia homoeocarpa*), is a fungus that doesn't produce any spores. This has made identifying this pathogen difficult because most fungi are classified or identified based on the spores they produce.

Now that reliable molecular techniques are available, the fungus that causes dollar spot has been better classified through the use of DNA techniques.

We have seen a shift in populations from strains that were sensitive to various classes of chemistries to strains that are resistant.

#### Vegetative compatibility

*R. floccosum* is composed of many different strains called vegetative compatibility groups (VCGs). Compatibility group identification is determined based on whether the hyphae of two different fungal strains can grow together or not. When the hyphae of two strains of *R. floccosum* come in contact with each other, if they fuse, they are considered to be "compatible," and they belong to the same VCG. If, on the other hand, they are antagonistic to each other, causing the hyphae to die where the two

strains meet, they are considered to be from different VCGs.

We have identified nine different VCGs of *R. floccosum* in Michigan. In Florida, they have identified 54 VCGs on St. Augustinegrass. The main point here is that, although we call the species *R. floccosum*, it is made up of many subgroups called VCGs that can vary in their pathogenicity, epidemiology and other characteristics.

Over time, these compatible VCGs can exchange genetic material and have the potential to develop into more aggressive strains of *R. floccosum*.

#### Resistant strains

Through the continued use of the systemic fungicides like the benzimidazoles, dicarboximides and the DMI fungicides, we have seen a shift in *R. floccosum* populations from strains that were sensitive to these various classes of chemistries to strains that are resistant.

The possibility exists that as the *R. floccosum* population has shifted from sensitive to resistant, some of these resistant strains are more aggressive than the sensitive ones they

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replaced. Also, resistance is only noticed after fungicide failure.

Some of what has been reported to be a more aggressive strain of dollar spot may simply be fungicide failure due to *R. floccosum* becoming resistant to the fungicide. Similarly, resistance to the DMI chemistry is initially expressed as a shortening of the interval of control. Some may think dollar spot is becoming more aggressive because the DMI fungicides no longer provide the same length of control as they had previously.

### IPM programs

Many superintendents have gone from preventive spray programs to more curative-type programs in an effort to be more environmentally friendly. This is often referred to as an IPM approach to managing diseases. It allows the dollar spot fungus to build large populations in the soil and thatch. Then, when ideal environmental conditions occur, the disease explodes because there is so much inoculum present.

Preventive fungicide programs keep the the pathogen in the soils or thatch at low levels, preventing a massive outbreak of the disease even under ideal environmental conditions.

We have some preliminary data that suggest that applying dollar spot fungicide as early as two weeks after the initial mowing greatly reduces the amount of dollar spot that occurs later in the year. This also supports the idea of the dollar spot fungus building up large numbers in the soil and thatch prior to severe outbreaks.

### Folk lore

When these severe outbreaks of dollar spot do occur, the wrong approach to control them is often employed. Much of what is done in turfgrass management is still based on folk lore, which says that following an outbreak of a disease, you should first apply a contact fungicide.

Contact fungicides are also called protectant fungicides and, as the name implies, should be

applied before the disease is present to protect the plant from infection. They do nothing to stop the disease already inside the plant.

Once the disease is present, a systemic fungicide should be used to stop the pathogen that is inside the plant from advancing further.

What some superintendents have called aggressive or uncontrollable dollar spot may only be the fungus continuing to cause disease from inside the infected tissue because a contact fungicide was used.

There are also data that show, in some instances, the Qo I fungicides make dollar spot more severe. This is not universally true everywhere the fungicides have been used, but it has happened in some cases.

### Agronomic factors

Another factor leading to the development of a more aggressive dollar spot pathogen could be management practices. I have a saying, "The grass is never going to do it your way." By this I mean that you need to follow good agronomic principles to have fungicides work properly.

Low levels of nitrogen are pretty much standard in managing golf course turfs today because of the belief that nitrogen encourages annual bluegrass. Lower nitrogen inputs into greens also help superintendents meet the demand for fast greens. Dollar spot controls work the best when the fungicides are applied to plants that have received adequate levels of nitrogen.

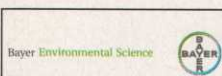
Spoon-feeding fertility programs tend to alleviate the above-mentioned concerns while increasing the efficacy of the fungicides.

We truly do not know the reasons for what appears to be the development of a more aggressive strain of dollar spot. Hopefully, some of the above mentioned causes and solutions will help you better manage the disease.

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#### QUICK TIP

Help your bermudagrass remain healthy by removal of perennial ryegrass or *Poa trivialis* during spring transition. Sulfonylurea herbicides, like Bayer's new Revolver™, are the right tool for the job. Revolver provides an ideal transition back to bermudagrass at a cost that won't break your budget.