Research *You Can Use*

Challenges and Opportunities

Disease management for seashore paspalum in Florida.

BY PHILIP F. HARMON

Seashore paspalum is a relatively new player in the golf course turfgrass lineup. Florida probably has more golf courses with seashore paspalum than anywhere else. Over the past six years we have learned a great deal about diseases that affect seashore paspalum (SP) and its management. There are diseases common to all warm-season grasses, including SP, but there are some that cause problems only with SP. I often practice my putting on our SeaDwarf research green at the University of Florida Turfgrass Research Center and find it a very nice playing surface, especially when we reduce the height of cut and keep it on an aggressive growth regulation program to tighten it up. I will share some of my thoughts, experiences, data, and opinions on the challenges and opportunities that SP presents to turfgrass managers.

The leaf texture of SP cultivars is coarser than that of ultradwarf bermudagrass cultivars, and the stolons and rhizomes tend to be wider in diameter. Roots and below-ground stems appear to be much more robust and grow deeper than bermudagrass. As a result, root diseases such as bermudagrass decline and take-all root rot pathogen, *Gaeumannomyces graminis* var. *graminis*, tend to be less of an issue than with ultradwarfs. The same could most likely be said for *Pythium* root rot and nematodes (nematode tolerance may be the biggest advantage for SP, if it pans out). Foliar diseases, however, tend to be more severe on SP. Dollar spot, large patch, *Fusarium/Microdochium* blight, and leaf and sheath spot are a few of the most significant problems

Some fungicides manage dollar spot, others manage large patch, and some manage both. Product selection is important during periods when both diseases are active.

for SP managers. Fairy ring also occurs on SP and may be influenced by the grass's potential to quickly accumulate organic matter under moderate to aggressive fertility programs.

Dollar Spot: Dollar spot is the most costly disease of turfgrass worldwide because bentgrass is so susceptible. Most bermudagrass cultivars have good resistance to dollar spot, but seashore paspalum does not. Nitrogen (N) fertility affects dollar spot severity, with both grasses experiencing more disease under low-N programs. With SP, increasing fertility often isn't enough to manage the disease and can lead to thatch buildup. Fluffy white mycelia of the dollar spot pathogen often can be seen on fairways and surrounds in the early morning after an extended dew period. The mycelia hold water droplets and, when the disease is severe, the effect almost looks like a light snow from a distance. When the conditions are favorable for disease over an extended period of more than a couple of days, the infection centers (spots) grow together to blight large areas of turfgrass unless chemical or cultural control steps are taken.

Many fungicides are available for dollar spot control that can give 14 to 21 days of suppression, depending on disease pressure, the product, and the rate chosen. There are differences in fungicide sensitivities between the various dollar spot-causing organisms in Florida. The dollar spot pathogen also has been reported to develop resistance to many of the best chemistries, so rotating fungicide products between applications and following label rates are important to help delay or prevent

The infection centers begin about the same size and shape as dollar spot.

Fusarium blight is darker in color, and mycelium is less common and generally pink in color.

this situation from becoming commonplace.

Patch Diseases: Large patch, brown patch, and Rhizoctonia blight sometimes are used interchangeably by turfgrass managers and researchers. Large patch is observed in our region from fall through spring on warm-season grasses, including SP. The fungus that causes this disease is a different strain from the brown patch strain that causes disease in summer (primarily on cool-season grasses). Large patch can be a severe problem on SP. The disease is active when a light yellow to orange ring appears on the border of patches from one to several feet in diameter. The pathogen can remain active in the interior of patches through winter and into spring, resulting in thin, wilted to blighted turfgrass that is slow to recover. The distinct yellow borders may not be noticeable after the initial patch expansion. Large patch and dollar spot can occur on the same seashore paspalum fairways, tees, and greens, even though dollar spot is typically thought of as a low-N disease and large patch a high-N disease. Fungicide selection is important, because protection from both diseases may be needed at the same time.

Fusarium: Fusarium blight is another disease that rarely occurs on bermudagrass but is a common problem on SP. The disease causes chocolate-brown to purple spots that are sometimes associated with pink tufts of mycelium similar to the pink snow mold pathogen. The pathogen is distinct from pink snow mold but related. Infection centers begin the size of dollar spots and can coalesce into large areas of blighted turfgrass if favorable disease conditions persist. The disease can be distinguished from dollar spot primarily by the color of affected turf. Dollar spot tends to be straw colored, and Fusarium blight is darker and generally lacks the classic hourglass-shaped lesions of dollar spot. The disease occurs just before dollar spot in the fall and after dollar spot in the spring, but the two diseases can overlap significantly in timing.

Take-All: Take-all root rot disease of SP has been reported from a handful of golf courses and home lawns. The disease has not been encountered on SP as commonly as on bermudagrass. Early symptoms in the spring are thin, yellowing turf that shows micronutrient deficiency-like symptoms in non-uniform patches. The turf is slow to recover once it dies from the disease in midsummer. Preventative fungicides in the spring have been reported to prevent progression of symptoms into summer. The pathogen weakens the normally robust root system, and the turfgrass is left with very few roots that are unable to take up adequate water and nutrients. Some of the same factors that influence disease development on bermudagrass also affect the disease on SP (e.g., high soil pH favors disease symptom expression).

***Rhizoctonia zeae*:** Leaf and sheath spot disease caused by *Rhizoctonia zeae* is an important summer disease of

It can take an entire season for turf to recover from severe take-all root rot symptoms. In the case of seashore paspalum, the roots can become severely diseased with take-all patch.

bermudagrass that seems to affect seashore paspalum less severely. The disease causes diffuse patches of thin turfgrass that are slow to respond to N fertilizer applications. The disease primarily affects the oldest leaves and leaf sheaths. The patches tend to occur in midsummer and can progress through fall. Damage may linger through winter if the disease is left unchecked. This is another disease that is very difficult to manage curatively.

These diseases pose significant challenges to managers of SP on a yearly basis. One important tool for SP that is not as useful for bermudagrass is the fungicide group that includes the sterol inhibitors, such as Banner, Bayleton, Eagle, Trinity, Triton, Tourney, and several others. In four years of testing nearly all available products in this group, at or exceeding label recommendations, I have seen no evidence of the type of phytotoxicity commonly seen when the same products are used at high label rates in repeat applications on bermudagrass in Florida. This group of products provides good rotation and tank-mix partners for Prostar and the strobilurins, such as Heritage and Insignia. The strobilurins and Prostar have excellent efficacy for large patch, but poor efficacy for dollar spot and Fusarium blight. Premix products such as Headway and Tartan that combine members of both groups are consistently among the best performers in my fungicide trials. Many other excellent fungicides that range from contact to systemic are available as well.

Seashore paspalum turfgrass has many horticultural advantages that make it an attractive choice where water quality or availability is a factor. However, it is my observation that when maintained on a Florida golf course, the grass is almost certainly going to require some level of fungicide application if optimum turfgrass quality is to be achieved. We are continually researching diseases of SP and still have a great deal to learn about this turfgrass.

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