

Spring Dead Spot in Bermuda

Spring Dead Spot (SDS) is a significant disease affecting Oklahoma's bermudagrass (*Cynodon* spp.), particularly in highly managed residential, commercial, and recreational lawns. This disease manifests prominently during the spring as Bermudagrass emerges from dormancy, leading to unsightly and potentially damaging patches in turfgrass.

Symptoms and Identification

SDS is characterized by circular dead turf patches ranging from a few inches to several feet in diameter. These patches appear bleached or straw-colored and can coalesce, forming larger irregular areas of dead grass. The affected zones often become apparent in the spring when the surrounding healthy bermudagrass resumes growth, leaving the dormant or dead patches conspicuous. Upon closer inspection, the affected plants' roots, rhizomes, stolons, and crowns exhibit dark, blackened, and rotted appearances, distinguishing SDS from other turf diseases.

Causal Agents and Disease Cycle

In Oklahoma, SDS is primarily caused by the fungi *Ophiosphaerella herpotricha* and *Ophiosphaerella korrae*. *O. herpotricha* is prevalent throughout the state, while *O. korrae* is more commonly found in the eastern regions. These fungi infect Bermudagrass during the fall when soil temperatures range between 50°F and 70°F, attacking the roots, rhizomes, stolons, and crowns. The infection remains dormant during the winter and becomes evident in the spring as the grass breaks dormancy. The fungi can spread by moving infected plant material, soil, equipment, and water.

Factors Contributing to SDS Development

Several factors can predispose bermudagrass to SDS:

- **Thatch Accumulation:** Excessive thatch provides a conducive environment for fungal growth and impedes water movement, exacerbating disease severity.
- **Soil Conditions:** Poor drainage, compacted soils, and low potassium levels can stress the turf, making it more susceptible to infection.
- **Management Practices:** High nitrogen fertilization in late summer or early fall can promote lush growth that is more vulnerable to fungal attack. Additionally, improper irrigation practices, such as frequent shallow watering, can weaken the root system.

Management and Control Strategies

Effective management of SDS involves an integrated approach focusing on cultural practices, chemical controls, and selecting resistant bermudagrass varieties.

1. Cultural Practices:

- **Thatch Management:** Regular dethatching reduces the organic layer where fungi thrive, improving water infiltration and root development.
- **Soil Aeration:** Core aeration alleviates soil compaction, enhances root growth, and promotes beneficial microbial activity.
- **Balanced Fertilization:** Applying appropriate amounts of potassium strengthens the turf's resilience, while avoiding excessive nitrogen in late summer reduces susceptibility.
- **Proper Irrigation:** Deep and infrequent watering encourages deep root systems, making the grass more robust against infections.

2. Chemical Controls:

- **Fungicide Applications:** Applying fungicides in the fall when soil temperatures are conducive to fungal activity can help manage SDS. It is essential to follow label recommendations and ensure thorough soil penetration. However, chemical control alone is often insufficient and should be integrated with cultural practices.

3. Resistant Varieties:

- **Turfgrass Breeding Programs:** Oklahoma State University's turfgrass program has developed bermudagrass varieties with improved disease resistance and stress tolerance. For instance, varieties like Tahoma 31 have demonstrated enhanced resilience against environmental stress and diseases. Incorporating such varieties can be a proactive approach to managing SDS.

Research and Advances

Ongoing research at institutions like Oklahoma State University focuses on understanding the pathology of SDS and developing effective management strategies. Studies aim to identify genetic resistance in bermudagrass, improve cultural practices, and evaluate the efficacy of fungicides. These efforts are crucial in providing turf managers and homeowners with science-based solutions to combat SDS.

Conclusion

Spring Dead Spot poses a significant challenge to Bermudagrass management in Oklahoma. By integrating cultural practices, judicious use of fungicides, and selecting resistant varieties, turf managers and homeowners can mitigate the impact of this disease. Continued research and education are vital to advancing our understanding and control of SDS, ensuring the health and aesthetics of Bermudagrass lawns across the region.

References

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