Technical Bulletin

Apply Organic Matter - Reduce turfgrass diseases

In 1997, Dr Nelson of Cornell University published an article in the July 1997 of Golf Course Management documenting maximum level of control observed of turfgrass diseases using a variety of organic amendments.

- "Organic amendments can affect a long-term change in the soil environment to favor disease–suppressive microbes."[1]
- "Organic amendments not only introduce varied and diverse microbes into soils, but also provide food for microbes already present."
- "To sustain this activity, periodic applications are required."
- The goal is to increase the populations and activity of disease suppressive microbes."
- "Studies conducted over the past 10 to 15 years have clearly shown the potential for amendments to reduce the severity and incidence of a wide variety of turfgrass diseases… monthly applications composed of as little as 20 percent compost by volume applied at rates of as little as 10 pounds per 1,000 square feet are effective against diseases on turf."
- Poultry manure is a major component of the Nutrients Plus products. Approximately 4 lbs of a Nutrients Plus organic matter fertilizer per 1,000 square feet delivers similar amounts of poultry litter.

Amendments for turfgrass disease control

Amendment	Diseases controlled	Maximum level of control observed	*References
Municipal and Industrial Sludges			
Activated sewage sludge	Dollar spot	99%	(28)
Composted municipal biosolids	Brown patch	42%	(34)
	Dollar spot	40%	(37)
	Pythium root rot	63%	(56)
	Red thread	51%	(35)
	Typhula blight	70%	(40)
Composted brewery sludge	Brown patch	25%	(34)
	Dollar spot	15%	(38)
	Pythium root rot	68%	(56)
	Red thread	36%	(35)
	Typhula blight	70%	(40)
Uncomposted natural organic fertilizers			
Animal and plant meals	Brown patch	75%	(34)
	Dollar spot	74%	(21, 37)
	Necrotic ringspot	96%	(30)
	Pythium root rot	56%	(39)
	Red thread	57%	(35)
	Typhula blight	0%	(40)
Animal manures			
Composted cow or horse manure	Brown patch	25%	(34)
	Dollar spot	73%	(21, 37)
	Pythium root rot	31%	(39)
	Red thread	9%	(35)
	Typhula blight	55%	(40)
Composted poultry litter	Brown patch	75%	(34)
	Dollar spot	55%	(37)
	Necrotic ringspot	86%	(30)
	Pythium root rot	94%	(39)
	Red thread	79%	(35)
	Typhula blight	15%	(40)
Other			
Composted yard waste	Brown patch	39%	(34)
	Dollar spot	5%	(38)
	Red thread	0%	(35)
Spent mushroom compost	Brown patch	25%	(34)
	Dollar spot	0%	(38)
	Red thread	0%	(35)
Reed-sedge peat	*Pythium* root rot	68%	(56)

*Percentages represent the maximum values published. Considerable variation in suppressiveness exists among different compost feedstocks, different batches of the same feedstock and at different sites.

Conclusion: The addition of organic amendments such as Nutrients Plus fertilizer can aid in the suppression of certain turfgrass diseases. The actual level of disease controlled may be less than the maximum level of control observed as stated in the following chart.

[1] Nelson, Eric B, Ph.D., 1997, Biological control of turfgrass diseases, Golf Course Management, July 1997