

## Sulfate from page 26

that has been shown to suppress summer patch in our tests on Kentucky bluegrass.”

Thompson notes that the commonly-used fertilizer urea will lower the pH somewhat in the long term, but in the short term it actually encourages summer patch. Tests showed a 60 to 80 percent reduction in summer patch when ammonium sulfate was applied, compared to a 35 to 45 percent reduction with sulfur-coated urea. And, after two years, there was no significant reduction at all of the pH when urea fertilizer was used.

**What is it?**—Summer patch affects

cool-season grasses such as Kentucky bluegrass, annual bluegrass and fine fescue. It generally occurs on turf that has been established for more than two years. The fungus remains dormant over the winter months but thrives in hot, humid summer weather.

Summer patch attacks the grass roots and produces small circular patches of turfgrass that is dead above the ground. The patches may enlarge and blend into one another, resulting in large ragged areas of straw-colored grass and a very unsightly lawn.

Rutgers turf specialist Jim Murphy says

that continued use of ammonium sulfate can virtually wipe out the summer patch fungus.

“In 1992, on test plots where ammonium sulfate had been applied for three years, we saw no summer patch at all and didn’t need to use any fungicides. On plots without ammonium sulfate, we saw substantial disease activity.

“The summer patch suppression we saw in 1992 was likely influenced by the mild summer weather last year. But that underlines the strong effect that ammonium sulfate fertilizer alone had on the disease.

**Check soil pH**—When using ammonium sulfate over a period of time, you may need to apply lime to maintain a favorable soil pH, Dr. Heckman points out.

“A soil pH level of 6.0 to 6.5 (slightly acidic) is ideal for most turfgrass species. You should have a reliable soil test performed every two to three years, and adjust to a pH of 6.0 where summer patch is known to occur.”

Golf course superintendents who use ammonium sulfate regularly say it promotes early green-up when applied in the spring. They also apply it in the fall to keep plants stronger and more disease-resistant over the winter.

Not all commercial lawn fertilizers contain ammonium sulfate. Read labels or ask your fertilizer dealer for further information.

## Cultivation improves water relations on compacted soils by:

### • Greater root viability

- primarily by enhancing soil O<sub>2</sub> status
- by reducing penetration resistance

### • Improved infiltration/percolation

- reduces runoff
- allows for better irrigation programming
- reduces evaporation losses

### • Enhanced root extension

- by improving physical conditions
- by altering chemical properties when cultivation is used to inject lime, gypsum, phosphorus

Source: Dr. R.N. Carrow

## Cultivation Treatments Enhancing Soil Water Uptake By Turfgrass Roots<sup>1</sup>

PROCEDURE	APPLICATIONS/YR.	ENHANCED WATER EXTRACTION	
		Frequency <sup>2</sup>	Magnitude <sup>3</sup>
		%	
Floyd McKay Deep Drill	2	100	50 to 120
Aerway Slicer	2	100	38 to 41
hollow tine core aeration	2	50	38
Verti-Drain + hollow tine core aeration	2+2	45	28 to 96
Yeager-Twose Turf Conditioner + lime	2	30	13 to 32
Verti-Drain	2	20	30 to 70
Yeager-Twose Turf Conditioner + gypsum	2	7	27

<sup>1</sup>Studies conducted on a compacted Cecil sandy clay loam

<sup>2</sup>Frequency (%) = percent of water extraction measurements that exhibited greater water extraction than the compacted control

<sup>3</sup>Magnitude (%) = percent increase in water extraction over the compacted control

Source: Dr. R. N. Carrow