

Dear Ray:

In view of your interest in turfgrass insects, I am sending you this letter to inform you of the fact that the 1978 Committee on Common Names of Insects, from the Entomological Society of America, has approved a common name for **Ataenius spretulus**. The approved name is "black turfgrass ataenius".

You may be interested in knowing that we have discovered another beetle that damages turf, at the same time **Ataenius** larvae do. This insect has been determined as **Aphodius granarius**. I found larvae of this species damaging turf in Boulder, Colorado and at two golf courses in Detroit, Michigan. At first glance, adults appear identical to **Ataenius spretulus**. The larvae of **Aphodius** are slightly larger and have a somewhat darker head capsule. The most outstanding identifying feature of the larvae is the V-shaped series of spines located in the raster. Another species, **A. pardalis**, also have these V-shaped paladia and is depicted in Paul Richter's book, "**White Grubs and Their Allies**". The latter species is not found in turf. I mention it so that you may look it up to get an idea of what the rastral pattern for **A. granarius** looks like. My suggestion to you would be that each time you come upon an infestation during June or July, which appears to be that of **Ataenius**, please check the larvae carefully to determine the possibility of the other species being present. I, and I am sure you too, would like to know the extent to which this insect occurs on golf courses or other turf areas. It has been collected from most states.

Hoping you had a good summer, I remain sincerely,

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SULFUR-THE FORGOTTEN TURF NUTRIENT

During the years 1957 through 1962 only 10 to 13 states were listed as having a sulfur deficiency in their soils. Today there are at least 29 states deficient in this amazing life giving element.

Sulfur is essential to the healthy growth of turf as well as all plants. Here are some of sulfur's benefits to turf.

1. Improves water penetration in soil.
2. Increases availability of iron, manganese, copper, zinc, and boron to the plant.
3. Improves soil structure.
4. Enhances color.
5. Builds healthy protoplasm and plant tissue to help resist drought.
6. Promotes turf growth and density.
7. Aids the turf response when used in combination with nitrogen.
8. Helps keep alkalinity in balance.
9. Aids nitrogen release from organic matter.
10. Improves recuperation capacity.

WHY IS THERE AN INCREASED NEED FOR SULFUR NOW?

Substantial amounts of sulfur used to be in the air because of coal burning home furnaces. Sulfur would be carried to the soil and plants by rain. During the 50's as much as 200 lbs. of sulfur per acre would be included in the annual rainfall in the Chicago area while the rural areas of Kentucky only received 5 or 6 lbs. of sulfur annually. Today, because of very little sulfur coal burning and environmental controls elimi-

nating sulfur emissions the amount of sulfur returned to the soil in rainfall has been practically eliminated.

Before the popularity of today's high analysis plant food, most fertilizer had a high concentration of sulfur contributed by ingredients, such as ammonium sulfate, superphosphate, potassium sulfate, sul-po-mag. Because of lower costs and greater availability, higher analysis sources of nutrients are used containing little or no sulfur. As a consequence, two of the most important sources of sulfur that have been washed out of the air by rain and a normal ingredient in fertilizer have almost been eliminated.

The sulfur present in the soil is eventually used up or leached out. The more nitrogen used the more sulfur is needed for proper turf growth. Depleted sulfur must be replenished or severe turf damage can result. Here is a list of sulfur sources:

SULFUR CARRIERS	AVERAGE FERTILIZER AND SULFUR CONTENT
	N-P-K-S
Elemental Sulfur	0-0-0-99
Sulfur-coated Urea	32-0-0-24
Ammonium Sulfate	21-0-0-24
Ferrous Sulfate	18% S, 21% Fe
Gypsum	20% Ca, 18% S
Potassium Magnesium Sulfate (Sul-po-mag)	0-0-22-18, 11% Mg.
Ferrous Ammonium Sulfate	16% S, 22% Fe
Potassium Sulfate	0-0-50 - 17% S
Superphosphate	0-22-0 - 18% Ca, 12% S

HOW MUCH SULFUR DOES TURF REQUIRE?

Normally grass contains as much sulfur as phosphorous. The more nitrogen that is fed phosphorous, potash and sulfur needed. For example, if 4 lbs. of nitrogen were fed each thousand sq. ft. of turf it would require more sulfur because of leaching tendencies.

CAN SULFUR BE TOXIC TO GRASS?

The major sulfur villain is sulfur dioxide usually produced by smelters. This atmospheric contamination can completely kill plants. It is rare that sulfur added to the soil will harm plants. However, in arid or poorly drained soils, high concentrations of sulfates can cause problems by making calcium unavailable.

SULFUR DEFICIENCIES

Plants deficient in sulfur have very similar symptoms to those with a nitrogen deficiency, yellowing of leaves, faint scorching of leaf tip continuously until the whole leaf withers and dies.

SULFUR IS NEEDED TO LOWER pH OR INCREASE SOIL ACIDITY

If your pH is 7 add 2 lbs. of sulfur per 100 sq. ft. for every 3/4 degree of pH you want to decrease. For example, if your pH is 7, 2 lbs. of sulfur per 100 sq. ft. will bring your pH down to 6.5 and 4 lbs. of sulfur per 100 sq. ft. will bring the pH down to 6.0. In sand, cut these amounts by one third.

Never add sulfur or lime to correct pH until you have tested your soil and know what the pH is.

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This year's Seminar will be held at the Indian Lakes Country Club, Bloomingdale, IL on February 14, 15, 16, 1979. For further information contact Carole Rachesky at the **NEW ILCA office**: 665 Forest, Glen Ellyn, IL 60137 or phone 312-858-8574.

Illinois Landscape Contractors Association