

Take-All Root Rot in Turf by Erin Harlow

Pathogen: *Gaeumannomyces graminis* var. *graminis*

Grasses Affected: All warm season grasses

Most Likely Active:

- Can affect any turf that has gone through a very stressful period.
- Normally during spring green-up into early summer.
- It can become active in the fall as well.

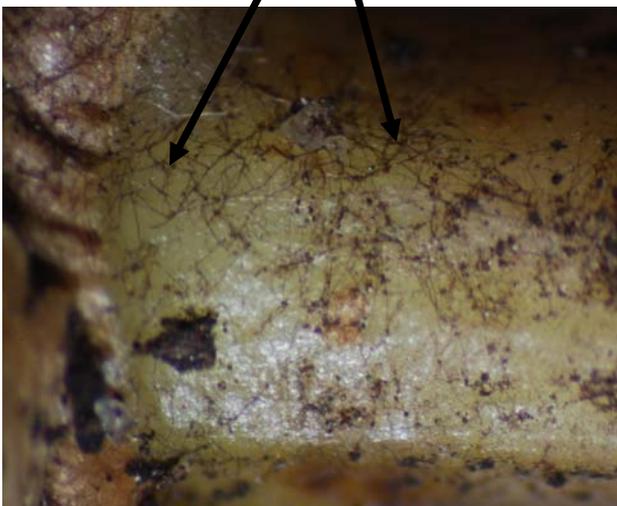
Symptoms:

- Yellowing spots in the turf.
- Thinning areas that appear to get larger.
- Lack of healthy roots.
- Take-all root rot tends to be more active in higher pH soils.



Photo 1. Symptoms of Take-all Root Rot including yellowing and thinning. Photo credit: E. Harlow

Photo 2. Mycelium with puzzle shaped pieces as viewed under a 40X scope. Photo credit: E. Harlow



Key Identifying Factors:

- Stolons will have mycelium present that have small black puzzle-piece shaped attachments. It makes the stolons appear dirty when viewed in the field.
- Roots are rotted, blackened, and outer cortex may slough off.
- Yellowing areas are not in a pattern.

Cultural Control:

- Reduce overall turf stress.
- Mow turf at the correct height.
- Avoid herbicide applications that may stress the turf.
- Inspect and calibrate irrigation system to make sure the turf is receiving the appropriate amount of water.
- Fertilize with liquid micronutrients. Small, frequent applications may be necessary if the roots are severely damaged.
- Avoid quick-release nitrogen if possible. Extra applications of potassium may be needed to encourage root growth.
- Try lowering the pH of the soil to 6.5. This can be done with limited success using ammonium sulfate fertilizers, however they have to be applied frequently.
- If the customer is going to resod then add organic matter at the time the soil is being prepped.



Photo 3. Roots lack root hairs and are brown and mushy. Photo Credit: P. Harmon

Chemical Options:

- Azoxystrobin, fenarimol, myclobutanil, propiconazole, pyraclostrobin, thiophanate-methyl, and triadimefon.
- These fungicides are best if used preventatively. Apply one month before symptoms begin to appear, usually in February. Repeat applications may be necessary until the temperatures are no longer conducive to the disease.

Don't be Deceived, it may not be Take-All Root Rot

- When the soil temperature is too cool for the roots to begin to function, but the air temperatures is warm and encourages growth, the plants tend to show signs of yellowing. This will be corrected once the soil temperatures warm-up. Applications of nutrients may also be helpful.
- The plant may be exhibiting a nutrient deficiency such as manganese or iron and a foliar application of nutrients maybe all you need to correct the yellowing color.

For more information on Take-all Root Rot download UF's publication at <http://edis.ifas.ufl.edu/lh079>.

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