Rust - To treat or not to treat

Rust occurs every year on Iowa turf but as a general rule fungicide applications are not necessary. This year may be the exception to that rule. Several calls with specific circumstances have led me to recommend fungicides for rust control. Before we get to the rest of the story let's review the normal approach to dealing with rust. As diseases go, rust can be easily identified by the yellow to orange flecks that develop on leaves and stems. As the disease progresses orange and cinnamon colored blisters and pustules form. Clouds of spores can turn your shoes orange when walking through turf heavily infested with rust.

- Rust occurs on Kentucky bluegrass and perennial ryegrass, but we are even seeing it on tall fescue this year. Immature turf that was seeded in the spring or early summer has been especially impacted by rust this year.

- Rust is usually more severe in turf that is growing slowly. Low light intensity, inadequate fertilization (especially nitrogen), drought stress, and infrequent mowing encourage rust development. A little extra shot of nitrogen is usually all that is needed to stimulate leaf growth that allows mowing to remove infected tissue. The idea is to keep the grass growing fast enough so that grass clippings are generated each week. Sufficient nitrogen and irrigation are required to "out grow" the rate of rust infection. If the grass stays at the same height and mowing is not needed, then rust can eventually cover the entire plant.

- Excessive irrigation and irrigation practices that extend the period of free moisture on the leaf surface encourage rust. The best time to water is at dawn because the turf is usually already wet from dew. Avoid watering from 10 am through dusk, this only extends the period of leaf wetness. Night time irrigation, after dew has formed, would be the next best time for watering to reduce rust.

Hopefully most of you may not need to justify a fungicide application. Those of you with actively growing turf may not be experiencing severe rust problems as the summer season begins to wind down. Golf Course Superintendents may choose to accept some turf injury on lower priority areas such as golf course roughs with the expectation that recovery usually occurs later in the autumn. However, here are the circumstances from my university extension visits that have resulted in fungicide recommendations to control rust in 2009. Most of them involve athletic fields.

- Most of the calls have come during late July and early August so that only leaves about 30 days until the field will open for play. If we have extended conditions in September that favor rust infection, high traffic areas will quickly fade.

- Three calls had fields that were newly seeded in the spring and early summer. Germination and establishment were going quite well with the mild summer temperatures this year. However, the establishing grass did not have substantial vertical growth so when the rust hit, it quickly covered the entire plant and growth completely stopped. Four lbs of N per 1000 sq.ft. had already been used on the native soil field during establishment so the manager was reluctant to use more nitrogen that could incite other summer turf diseases such as brown patch and pythium. It is full of rust and they want to play football in 14 days. I recommended a fungicide and another pound of nitrogen. At a separate spring seeded field they were using a rain train to irrigate. It takes three 8-hr sets to irrigate the entire field so the rain train was running 24-7 for over a month. That also means that leaves were wet for too long because half of the water was being applied during the day time. The field was covered with rust and turf growth had stopped. I recommended a half pound of nitrogen per 1000 sq.ft., a rust control fungicide, and cutting back on irrigation by only watering for one 8-hr set during the night from 10pm to 6am.

- Another field had no means of irrigation and was intended for practice only. The worn field was over-seeded in May and the grass was establishing nicely with the mild summer, but again the new turf was stunted and covered with rust. For this field I recommended a pound of nitrogen per 1000 sq.ft., but did not recommend a fungicide. It just didn't seem logical to apply fungicides when turf was not irrigated.

- Fungicide Treatments – It is unlikely that fungicides would reduce the blemishes on plants that were already infected. New growth is very important to recovery from existing rust. The fungicide applications were intended to reduce infection on new growth. Some of the fungicides that I recommended for this control strategy were: azoxystrobin (Heritage), chlorothalonil (Daconil Ultrex), propiconazole (Banner MAXX), and triadimefon (Bayleton).

It has been a peculiar year with little pressure from our typical turfgrass diseases. This year I found myself recommending fungicides to control, the normally non-destructive, rust on athletic fields where the disease pressure could have adversely impacted the football playing season.

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