Rust in Turf Grasses

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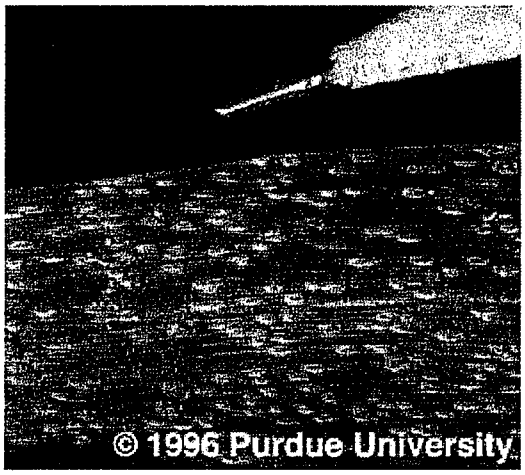

Rust has become a significant problem in some home lawns and other turf grass areas. Homeowners often first recognize the disease when they walk through a lawn and find that their shoes and pants cuffs are coated with an orange to reddish powder. The powder like material is actually millions of microscopic spores produced by the fungus on infected grass plants.

There are several different rust fungi that cause rust. The most common one on Kentucky bluegrass, annual bluegrass, fescues, and ryegrasses is *Puccinia graminis*. A separate species, *Puccinia zoysia* can infect zoysia grass.

Rust becomes a problem when grass plants are growing slowly. When grass plants are growing fairly rapidly, leaf tissues are removed by mowing at relatively frequent intervals, and the disease does not become apparent. Rust fungi are obligate parasites. That is, the fungi can reproduce only in living tissues. When leaf tissue is removed, the mycelium of the fungus in the removed tissue dies. With grass plants that are growing slowly, the fungus has sufficient time (7-14 days) to produce the microscopic spores in infected leaf tissue. These spores are then wind-blown or splashed by rain or irrigation to other leaves where new infections can occur. Consequently, the disease can become very severe when certain weather conditions occur when coupled with slow grass growth.

Rust infections first appear as minute yellowish flecks in infected leaf blades. The flecks enlarge somewhat as infection matures, and small, erumpent pustules appear beneath the epidermis of leaves. The pustules are formed as the fungus produces the microscopic spores. Later, the number of spores produced exert pressure on the leaf epidermis and it ruptures and releases hundreds, if not thousands of orange to reddish-brown spores. Leaf infections occur most frequently when days are dry and windy followed by heavy dew formation at night. The dry, powdery spores are easily disseminated by wind currents.

Rust, by itself, rarely kills a grass plant, unless other stress factors are involved. Rust infected plants are weakened. When the disease continues into late fall, infected plants may become more susceptible to winter injury. Young seedlings are highly susceptible, and proper water and fertility management may be required for early fall seedings.

The rust fungi rarely survive the winter in Indiana. The disease organisms survive winters in infected tissues in the southern and southwestern states. Spores of the fungi are wind-borne in spring and summer from those areas and the disease moves northward into Indiana and surrounding states usually in July and August.

Control of rust in the home lawn is best accomplished by fertilizing and irrigating as needed to promote grass growth. Do not promote excessive growth. Water infrequently, but deeply. Irrigate during the early part of the day. Irrigate at a time that will permit complete leaf dryness before dew formation. Watering in the evening will increase the length of time that free moisture is on the leaves, and will increase the chances of infection. Mow frequently and collect clippings when possible. Several fungicides will aid in the control of rust, but multiple applications are generally required. Products containing the fungicides chlorothalonil (Daconil Weather Stik, Thalonil, etc.), mancozeb (Fore, etc.), myclobutanil (Eagle, etc.), propiconazole (Banner, etc.), triadimefon (Bayleton, etc.), or others are available for commercial applicators. Homeowners may find products containing chlorothalonil or mancozeb being sold under various trade names at garden supply stores or nurseries.