

CHALKBOARD

TIPS FROM THE PROS

TREATED SEED STRONG DEFENSE AGAINST DISEASE

In the favorable climatic conditions of spring and fall, you can practically watch newly seeded turfgrasses grow. What you can't see – but can prepare for – is soilborne fungi attacking unprotected seeds and tender emerging roots below the surface.

Delayed germination and blighted stands can be avoided, says Dr. Phillip Colbaugh, plant pathologist at Texas A&M's Agricultural Experiment Station in Dallas. The researcher recently completed a series of laboratory and field trials that revealed the benefits of planting seed treated with fungicides and careful irrigation.

Colbaugh and his assistant, Tom McAfee, evaluated seedling growth and control of Pythium blight on turf seeds treated with a combination of commercial fungicides. Their data showed that average stand counts were significantly enhanced and incidence of Pythium infection was diminished when seeds were treated with a fungicide mixture. Treated varieties also emerged more quickly (with the exception of Kentucky bluegrass) and produced stands 20 to 95 percent fuller than untreated varieties.

Gustafson, Inc., of Plano, TX, supplied the perennial ryegrass, fine fescue, tall fescue, and Kentucky bluegrass seed for the trials. Treated and untreated seed was planted on outdoor plots in October 1989 at a rate of ten pounds per 1,000 square feet. The researchers counted the turf stand in each plot once a week for three weeks beginning in November. Seedlings were moved later from the plots to greenhouses to test disease resistance.

"Pythium and other soilborne diseases, like Rhizoctonia and Fusarium, lurk in almost every soil that benefits from regular watering and fertilization," Colbaugh notes. "Pythium is attracted to moisture and attacks the root system of even the hardest turfgrass, causing the foliage to blight. Basically, as growers, we do everything we can to encourage soilborne diseases."



Overseeding with treated seed improves speed of germination and density.

Many disease problems affecting turfgrass seedlings are generically described as "damping off," a disease complex that can be caused by one of several pathogens in the soil. However, Pythium is the most common culprit.

"I don't think enough growers realize the economics of planting treated seed," Colbaugh adds. "It is like term insurance. You get 30 days of protection while new roots are getting established and a good stand is started."

For example, perennial ryegrass seed treated with a fungicide like Apron costs only about four cents more per pound, or 16 cents per 1,000 square feet, according to commercial suppliers in the Pacific Northwest. Market estimates indicate that less than 25 percent of overseeded turfgrasses are treated for disease control.

Turfgrasses that are sown at high rates are especially vulnerable because the emerging seedlings will already be weakened from having to compete for light and nutrients. Overseeded grasses fit this category.

Colbaugh says timing of overseeding is critical in determining the threat from disease. If fall seeding dates are too early, soil temperatures are warmer and favor the growth of several Pythium species capable of invading tender seedlings. "Ideal planting windows are very small, and if you plant outside of them, you tip the balance in favor of fungi," he warns.

Six chemical treatment combinations were used to treat seed from each of the

treat grasses. Both treated and untreated seed was then planted in outdoor plots on October 20. Eighteen days later, the turf stand in each plot was counted. Two more counts were taken at eight-day intervals.

Perennial ryegrass treated with an Apron/Epic/Magnum 2.5 combination resulted in 18-percent better stand than untreated ryegrass after 18 days. The most dramatic results were found after 34 days with fine fescue and Kentucky bluegrass. Fine fescue treated with the same fungicides in a 5.0 combination registered a 33-percent increase. One of two Kentucky bluegrasses treated with Apron and Epic filled in 100-percent faster than its check plot!

Colbaugh and McAfee moved seedlings from the plots to greenhouses to test for disease resistance. Treated and untreated seedlings were inoculated twice with Pythium. Three weeks after the first inoculation, 66 to 95 percent of the untreated seedlings were blighted. Perennial ryegrass and Kentucky bluegrass treated with the fungicide combination showed no detectable infection, and only 3.3 percent of the treated fine fescue had signs of infection.

"The argument for treating turfgrass seed is overwhelming," Colbaugh reports. "You gain 30 days of protection from seed- and soilborne diseases at a time when your turfgrass builds in stand and stamina. The results are unquestionably superior."

The common names for the fungicides mentioned above are metalaxyl (Apron), iprodione (Epic), and dithiocarb (Magnum).