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Fusarium Blight

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Fusarium blight caused by Fusarium roseum and F. tricinctum in combination with nematodes is a disease which has infected numerous Kentucky bluegrass turfs in Michigan. The Fusarium blight symptoms appear when the infected turf is subjected to water stress. This usually occurs during the hot, dry weather of summer but can occur during the cool, dry weather of spring and fall. The first noticeable symptom is wilted grass plants in patches ranging from 6 inches to 2 feet in diameter. A "frog-eye" pattern often develops, especially in merion Kentucky bluegrass turfs (an area of green grass in the center surrounded by a ring of dead grass). In cultivars like Fylking, Pennstar and Nugget, the symptoms often appear as dead spots 2" to 6" in diameter with no green centers. In both cases, the disease spots may coalesce resulting in larger areas of dead grass.

Fertilization - The severity of the disease is greatest where high rates of nitrogen are applied in the spring. For lawns which contain Fusarium blight-susceptible cultivars, it is best to fertilize at the rate of 1/2 pound of actual nitrogen (N) per 1000 square feet during each of the months of June, July and August where the clippings are returned. If the clippings are collected, 1 lb of nitrogen/1000 sq. ft. may be needed. This should be applied in 1/2 lb increments twice/month. During the first or second week in September, apply another pound of nitrogen per 1000 square feet. Then in late November, after the last mowing has been made, an additional treatment of 1 pound of nitrogen/1000 sq. ft. should be applied as a dormant application. This last treatment should be done with a fertilizer which contains mostly or all water-insoluble (slow release) nitrogen and which will give green color in the spring but avoid a flush of growth which will increase the susceptibility of the turf to Fusarium blight.

The 1/2 pound nitrogen per 1000 square feet rate is about 1/2 the rate normally recommended on fertilizer bags or with fertilizer spreader settings. The table below shows the pounds of each of several fertilizers which would be needed to provide 0.5 pound nitrogen per 1000 square feet. Just double this figure for 1 pound of N per 1000 square feet for the fall and dormant applications

% nitrogen (N) in fertilizer	Pounds of fertilizer to apply 0.5 lbs N per 1000 square feet of turf
30	1.7
25	2.0
23	2.2
20	2.5
18	2.8
16	3.1
14	3.6
12	4.2
10	5.0

Watering - One of the best ways to prevent symptom development in a Fusarium infected turf is to water the turf with light, frequent applications. The infected plants have short root systems and deep watering will do little good. Because of these short roots, the infected grass plants tend to wilt when the top 1/2 inch of soil or thatch becomes dry. Daily watering at midday during hot, dry weather is most helpful in reducing Fusarium symptoms but is no guarantee controlling the disease. Watering in this manner is expensive but it is one alternative in trying to keep a good lawn when Fusarium blight is a problem.

Chemical - The disease can be controlled chemically by applying a systemic fungicide like Tersan 1991, Cleary 3336, Fungo 50 or Spot Kleen. To be effective the fungicides must be drenched into the root systems before they dry on the foliage. To insure good penetration into the soil the turf to be treated should be irrigated the night before. This treatment will give 3 to 6 weeks control after which time an additional application may be necessary. Because of the expense involved, usually only one application per season is made. This one application should be applied around the first of July to give protection during what is normally the hot, dry weather period in Michigan. Then by following the program of light, frequent waterings during this period and on in to the fall, one should achieve a 3 to 5 year period, after which time resistance to the fungicides by the Fusarium fungus usually develops (the fungicides will no longer control the disease).

Resistant varieties - Any one planning on establishing a new Kentucky bluegrass turf would be well advised to plant a blend (2 or more cultivars) of cultivars which are resistant to Fusarium blight. The most resistant cultivars are Majestic, Vantage, Touchdown, Parade, and Adelphi. Cultivars which should be especially avoided are Merion, Flyking, Pennstar and Nugget. Replacing existing turf areas that are infected with Fusarium blight with the above mention resistant cultivars is another alternative. This can be accomplished by re-sodding with resistant cultivars, or renovating with the herbicide "Roundup" when it is approved for such uses, killing the existing turf area with it and re-seeding the area with resistant cultivars.