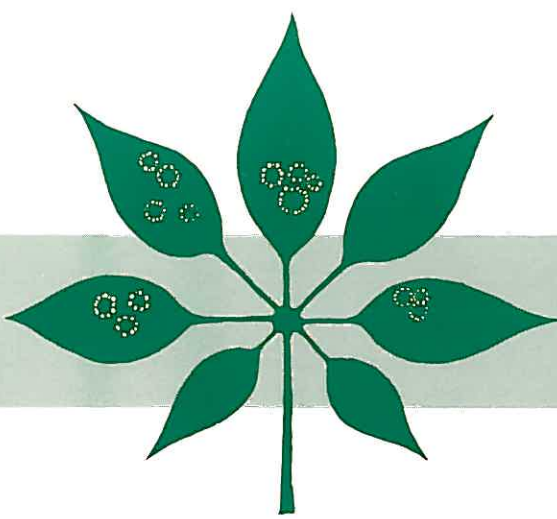


# PLANT DISEASES



## FUSARIUM PATCH OF TURF

Fusarium patch is the most common and troublesome lawn disease in western Washington. It can also be a problem in eastern Washington.

This disease is caused by the fungus *Fusarium nivale* (*Gerlachia*). It may attack either young or old grasses. Bentgrasses and annual bluegrasses are the most seriously damaged. Fescues, bluegrasses, and ryegrasses can also be infected but to a lesser degree.

### Disease Symptoms

In lawns, the fungus usually causes indefinite brown thin areas, 4–8 inches across.

On putting greens, Fusarium patch first appears as round, tan, reddish-brown to blackish-brown spots. The spots are only 1–2 inches in diameter. By late fall, they enlarge to become ringlike gray areas, 2–6 inches across.

Abundant moisture and cool temperatures are required for active fungus growth. Outbreaks are most common in the spring and the fall. The mold is less active during the colder winter months and the drier, warmer summer months.

Excessive nitrogen fertilizer favors Fusarium development. Apply no more than is needed for healthy lawn growth.

### Control

For optimum plant health and disease resistance, a balanced fertilizer program should be implemented which would include four elements; nitrogen (N), phosphorus (P), potassium (K), and sulfur (S). At each application, use 1 pound

available nitrogen, 1/3 pound available phosphorus, and 1 pound available potash per 1,000 square feet. A minimum application rate of sulfur for disease suppression is 2–3 pounds of sulfur per 1,000 square feet per year. A 3–1–2 (N–P–K) ratio is desirable for a fertilizer source. If a fertilizer source has a sulfur content, it will directly follow the potassium percentage, i.e., 12–4–8–8S. This product would contain 8% sulfur. Several examples of applications would be applying 9 pounds of a 12–4–8 fertilizer or 11 pounds of a 9–3–6 mixture per 1000 square feet. If the soil is extremely sandy, use a slow release nitrogen source or a quick release nitrogen source at 1/2 pound

N/1000 square feet in two applications to minimize possible leaching of nutrients through the root zone and get maximum use by the plant. The best turfgrass response is seen from a blend of quick release and slow release nitrogen sources.

In western Washington, apply four times a year: November–December, April, June, and September. This fertilization schedule will be adequate for a medium maintenance lawn. For improved cultivars of perennial ryegrass to remain green year-round, one or two additional applications of nitrogen at 1 pound per 1,000 square feet may be made between these dates.

In eastern Washington, use 4



Indefinite brown and thin areas 4 to 8 inches across are symptoms most frequently seen in lawn turf.

pounds of available nitrogen per 1,000 square feet each growing season. Divide this into four equal applications (1 pound each) in April, June, August, and November. Improved Kentucky bluegrass cultivars require more nitrogen and should receive 6 pounds of available nitrogen per 1,000 square feet each growing season. Divide this amount into four of five equal applications. Have the soil tested for phosphorus and potassium levels.

Additional applications of sulfur may be needed to improve turf quality and also help to suppress disease if there is insufficient or no sulfur in the fertilizer source. Ammonium sulphate (24% S) can be used as a sulfur source at a ½ pound N/1000 square feet to give 0.6 lb. S per application. The professional applicator can use combinations of ammonium sulfate,

potassium sulphate (18% S), sulfur-coated urea (23% S), and other fertilizer sources containing sulfur to obtain adequate sulfur levels. Elemental sulfur (92% S) is available in a granular and sprayable form for professional use. The sprayable form will be available almost immediately while the granular product will be released slowly. Care must be taken to apply water after applying elemental sulfur to get it off the leaf surface and prevent burning of the leaf tissue. Do not apply elemental sulfur in summer or when plants are under stress.

Good air circulation and soil drainage will help control Fusarium by reducing moisture levels which favor disease development.

If the thatch layer is greater than ½ inch, dethatch the lawn using a power rake.

If the thatch layer is greater than 1 inch, the site will have to be dethatched more than once to remove the excess organic matter. Top dressing, or spreading a thin layer of an appropriate soil type over the lawn area, will also help break down the thatch layer.

If the soil is also compacted, aerate using a hollow-tined aerifier. If drainage is a severe problem, subsurface tile lines may need to be installed.

Fungicides can also help to control Fusarium. Apply twice in spring (March 15 and April 15) and twice in fall (September 15 and October 15). Sulfur applications can greatly reduce the need for fungicide applications. See *Disease Control in Home Lawns*, EB0938, or *Disease Control on Commercial Turf*, EB1133, for listings of currently registered fungicides for Fusarium control.



By Ralph S. Byther, Extension Plant Pathologist and Gwen K. Stahnke, Extension Turfgrass Agronomist, WSU Puyallup.

Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

The law requires that pesticides be used as the label directs and only on target site or crops listed on that label. Uses against pests not named on the label and low application rates are permissible exceptions. If there is any apparent conflict between label directions and the pesticide uses suggested in this publication, consult your county Extension agent.

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