



Fusarium Patch (Pink Snow Mold)

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Fusarium patch is a problem in any area with a cool, wet spring or fall, or where there is a snow cover in the winter months. Annual bluegrass, creeping bentgrass, velvet bentgrass, colonial bentgrass, and perennial ryegrass are highly susceptible and easily destroyed by Fusarium patch. Kentucky bluegrass and red fescue are moderately susceptible to the disease.

Symptoms

Without snow cover, pink snow mold occurs as reddish brown spots in the turf. The spots may range from less than one inch to eight inches in diameter, although larger ones may be found (Fig. 1). When a snow cover is present, the circular spots are usually two or three inches to one or two feet in diameter and are tan or whitish gray or reddish brown (Fig. 2). Shortly after the snow has melted, pink mycelium (fungal strands) can be seen at the advancing edge of the spot.

Occurrence

Pink snow mold is caused by *Fusarium nivale*. This organism survives in the turf thatch and will actively grow on turf residue. Infection takes place at temperatures below 60 degrees F because slowly growing turf is more vulnerable to



Figure 1: A reddish brown circular patch from an inch in size or greater, is typical of pink snow mold damage. Note pink fungal strands at advancing edges.



Figure 2: Pink snow mold damage on turf that has had a snow cover.

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attack by the fungus, and there is less competition from other microorganisms at this temperature. *Fusarium nivale* and other snow molds are pathogens that have found ecological niches where they can survive with less competition from other microorganisms.

Cultural Management

Fall nitrogen fertilization causes lush turf growth going into the winter. It also makes the turf more susceptible to *Fusarium* patch and management with fungicides more difficult. The last date of application for nitrogen should be early enough to give the turf a chance to harden off before the first snow or frost. A good average date for the last nitrogen application in northern Michigan is August 15 and southern Michigan is September 15. This is not to be confused with the dormant nitrogen application, which is applied after the turf has stopped growing in November or December. Also, if the turf is lush and there is a winter without snow cover, large areas of turf may be lost to desiccation (drying-out). There is no creeping bentgrass or annual bluegrass cultivar that is

Table 1: Recommended fungicides for the chemical management of *Fusarium* patch.

Common Name	Trade Name	Manufacturer
Benomyl	Tersan 1991	E.I. duPont
Cadmium chloride	Caddy	W.A. Cleary
	Cad-trete	W.A. Cleary
*Calo-Clor	Calo-Clor	Mallinckrodt
*Calo-Gran	Calo-Gran	Mallinckrodt
Mancozeb	Fore	Rohm & Haas
	Formec 80	PBI Gordon
*Phenylmercuric	Proturf Broad	
Acetate + Thiram	Spectrum Fungicide	O.M. Scott
Thiophanate-ethyl	Cleary's 3336	W.A. Cleary
Thiophanate-methyl	Fungo 50	Mallinckrodt
	Topmec 70W	PBI Gordon
	Proturf Systemic	
	Fungicide	O.M. Scott

*Registered for golf course green use only.

resistant to *Fusarium* patch and all require preventative fungicide treatment.

Chemical Management

Several fungicides can be used to manage *Fusarium* patch where there is no lasting snow cover. However, if there is a snow cover for three months or longer, either the mercury or systemic fungicides must be applied prior to permanent snow fall. They are the only fungicides capable of protecting

the turf from *Fusarium* patch during this time, as repeated applications cannot be made. *Fusarium* patch will occur in the spring during cool wet periods. Fungicide treatments should be applied at the first evidence of the disease. Table 1 lists fungicides effective in the management of *Fusarium* patch.

NOTICE: Always use pesticides carefully. Follow label directions and avoid misuse. Any use of a pesticide inconsistent with the label is illegal.



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