

Microdochium Patch (Pink Snow Mold)

[*Microdochium nivale*]

SYMPTOMS

Pink snow mold develops during periods of snow cover, with symptoms of the disease becoming evident as the snow melts. The disease appears in roughly circular patches from 2 inches to 1 foot in diameter that are white or light tan in color. A ring of salmon or pink-colored growth is present on the outer edge of patches when the disease is actively developing. The infected leaves within the patches are usually collapsed and matted down upon themselves.



Microdochium nivale may also infect turfgrasses in the absence of snow cover during periods of cool, wet weather; in these cases, the disease is referred to as *Microdochium* patch. The symptoms of *Microdochium* patch are slightly different than pink snow mold. The patches are similar to pink snow mold in size and shape, but are reddish-brown or salmon-colored and greasy in appearance. When the disease is actively developing, the patches may be surrounded by a dark brown or bronze ring.



Microdochium patch

Characteristic	Description
Host Grass Species	bentgrass, bermudagrass, bluegrasses
Month(s) with symptoms	November to March
Stand Symptoms	spots, circles, patches (4 to 12 inches)
Foliar Symptoms - Location/Shape	blighting of entire leaves
Foliar Symptoms - Color	pink, white, tan
Root/Crown Symptoms	none
Fungal Signs	mycelium, jelly-like spore-masses

Note: Still not sure if this is the right disease? The [Turfgrass Disease Identification](#) program may be helpful. Or consult the experts at the [Turf Diagnostics Lab](#). Check the TurfFiles [glossary](#) for definitions of unfamiliar terms.

FACTORS AFFECTING DISEASE DEVELOPMENT

Disease activity is most severe when snow falls on unfrozen ground; however, activity can occur without snow cover during cool (less than 60°F) wet weather. Excessive foliar growth and thatch buildup are the most important factors encouraging development of pink snow mold and *Microdochium* patch. Restricted air movement, poor soil drainage, inadequate levels of potassium, and heavy traffic can also enhance the disease. The disease may also develop under tree leaves that remain on the turf for long periods during cold, wet weather.

CULTURAL CONTROL

Do not apply nitrogen when cold weather is expected or before the first expected prolonged snow cover. Continue mowing in the fall until foliar growth stops completely. These steps will prevent a buildup of lush foliage that is highly prone to pink snow mold or *Microdochium* patch.

Improve surface drainage, control traffic patterns, reduce thatch accumulations, and aerify regularly in areas that have been severely affected by the disease in the past. Prune trees and remove unwanted vegetation that impedes air movement. Frequently remove leaves and other debris during autumn and winter from turf that is not covered with snow.

In regions where heavy snow is anticipated, take steps to minimize the duration of snow cover. Erect snow fences or plant landscape plants in strategic locations to prevent excess snow accumulation. Prevent traffic on snow-covered turf, as compacted snow will melt more slowly and increase damage from pink snow mold.

CHEMICAL CONTROL

Fungicides are effective for control of pink snow mold and *Microdochium* patch. In the case of pink snow mold, apply fungicides before snow cover to prevent disease development. Mapping and spot-treatment of areas where pink snow mold is most severe can significantly reduce fungicide expenditures. In regions where prolonged snow cover does not occur, apply fungicides when symptoms of *Microdochium* patch are first observed.

Fungicide	Efficacy ⁽¹⁾	Resistance Risk ⁽²⁾	Class ⁽³⁾	Products ⁽⁴⁾
chlorothalonil + propiconazole + fludioxonil**	++++	2	DMI + nitrile + phenylpyrrole	Instrata
fludioxonil	++++	2	phenylpyrrole	Medallion
iprodione + thiophanate-methyl**	+++	6	benzimidazole	26/36, Dovetail, Fluid Fungicide
thiophanate-methyl	+++	6	benzimidazole	3336, Fungo, Systec, T-Bird, T-Storm, Tee-Off, TM
flutolanil + thiophanate-methyl	+++	6	benzimidazole + carboxamide	SysStar
chlorothalonil + thiophanate-methyl**	+++	4	benzimidazole + nitrile	Spectro, ConSyst, Peregrine, Tee-1-Up, TM/C
pyraclostrobin + boscalid**	+++	6	carboxamide + Qol	Honor
iprodione**	+++	4	dicarboxamide	26GT, IPro, Iprodione Pro, Raven
propiconazole	+++	4	DMI	Banner MAXX, Kestrel, Kestrel MEX, ProPensity, Propiconazole, Propiconazole G-Pro, Propiconazole Pro, Savvi, Spectator, Strider
tebuconazole**	+++	4	DMI	Torque
triticonazole	+++	4	DMI	Trinity, Triton
chlorothalonil + propiconazole**	+++	3	DMI + nitrile	Concert
azoxystrobin + propiconazole	+++	6	DMI + Qol	Headway

Fungicide	Efficacy ⁽¹⁾	Resistance Risk ⁽²⁾	Class ⁽³⁾	Products ⁽⁴⁾
triadimefon + trifloxystrobin	+++	6	DMI + Qol	Armada, Tartan
polyoxin D	+++	4	polyoxins	Endorse, Affirm
pyraclostrobin	+++	6	Qol	Insignia
trifloxystrobin	+++	6	Qol	Compass
vinclozolin**	++	4	dicarboxamide	Curalan, Touche
mancozeb + myclobutanil**	++	3	dithiocarbamate + DMI	Manhandle
fenarimol**	++	4	DMI	Rubigan
myclobutanil	++	4	DMI	Eagle, Myclobutanil
triadimefon	++	4	DMI	Bayleton, Granular Turf Fungicide, Systemic Fungicide
chlorothalonil**	++	2	nitrile	Daconil, Chlorostar, Chlorothalonil, Echo, Legend, Manicure, Pegasus
azoxystrobin	++	6	Qol	Heritage
mancozeb**	+	2	dithiocarbamate	Fore, 4 Flowable Mancozeb, Dithane, Mancozeb DG, Pentathlon, Protect, Wingman
thiram**	+	2	dithiocarbamate	Spotrete
mancozeb + copper hydroxide**	+	2	dithiocarbamate + inorganic	Junction
metconazole	?	4	DMI	Tourney
fluoxastrobin + myclobutanil	?	6	DMI + Qol	Disarm M
mineral oil**	?	2	hydrocarbon	Civitas
chlorothalonil + fluoxastrobin**	?	6	nitrile + Qol	Disarm C
fluoxastrobin	?	6	Qol	Disarm, Disarm G

** Not for application to residential lawns.

Footnotes:

(1) **Efficacy Codes:**

++++	excellent control when conditions are highly favorable for disease development
+++	good control when disease pressure is high, or excellent control when disease pressure is moderate
++	good control when disease pressure is moderate, excellent control when disease pressure is low
+	good control when disease pressure is low
0	does not provide adequate control under any conditions
?	cannot be rated due to insufficient data

(2) **Resistance Risk:**

- 1 Rotating and tank-mixing not necessary, but recommended to avoid potential side effects from continuous use of same chemical class.
- 2 Rotate to different chemical class after 3-4 applications; tank-mixing not necessary.
- 3 Rotate to different chemical class after 2-3 applications; tank-mixing not necessary.
- 4 Rotate to different chemical class after 1-2 applications; tank-mixing not necessary.

- 6 Rotate to different chemical class after 1-2 applications; tank-mixing with low or moderate risk product recommended.
 - 9 Rotate to different chemical class after EVERY application; tank-mix with low or moderate risk product for EVERY application.
- (3) Continual use of fungicides with similar control mechanisms (modes of action) can result in fungi that are resistant to some chemicals. Poor or ineffective disease control can be expected when this occurs. Managers can reduce the chances of this happening by mixing or alternating fungicides belonging to different chemical classes.
- (4) Recommendations of specific chemicals are based upon information on the manufacturer's label and performance in a limited number of trials. Because environmental conditions and methods of application may vary widely, performance of the chemical will not always conform to the safety and pest control standards indicated by experimental data. When more than one brand name exists for an agricultural chemical, the name of brand that first came onto the market is listed first. Otherwise, brand names are listed in alphabetical order. The order in which brand names are given is not an indication of a recommendation or criticism.

Recommendations for the use of agricultural chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services does not imply endorsement by North Carolina State University or discrimination against similar products or services not mentioned. Other brand names may be labeled for use on turfgrasses. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical. For assistance, contact your county's Cooperative Extension agent.

Useful links:

Glossary: <http://www.turffiles.ncsu.edu/Glossary.aspx>

Turf Diagnostics Lab: <http://ncstateturfdiagnostics.com/TDL/Home.html>

Turfgrass Disease Identification Program: <http://www.turffiles.ncsu.edu/diseaseID/>

Turfgrass Disease Management Program: <http://www.turffiles.ncsu.edu/diseasemgmt/>

Turf Irrigation Management System: <http://www.turffiles.ncsu.edu/tims/>

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