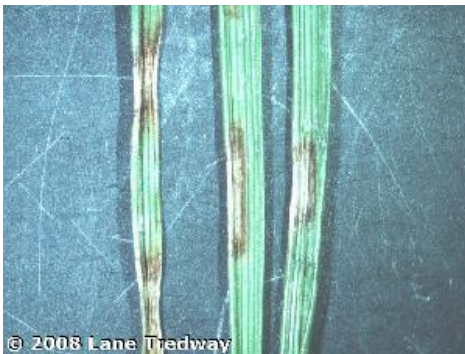


Net Blotch

[*Drechslera dictyoides*]

SYMPTOMS

Net blotch is a disease that occurs on tall fescue during cool, wet, and cloudy periods in the spring or early summer. Net blotch is a 'Helminthosporium' disease, which is a complex of diseases caused by fungi that produce large, cigar-shaped spores. Symptoms of net blotch appear as tiny, brown spots on the leaves. As the lesions expand, they become oval or square and coalesce to form a net-like pattern on the leaf. From a distance, net blotch appears as a general thinning of the turf stand that is yellow or brown in color.



net blotch leaf spots

Characteristic	Description
Host Grass Species	tall fescue
Month(s) with symptoms	March to June, Sept to November
Stand Symptoms	irregular distribution across turf stand
Foliar Symptoms - Location/Shape	angular leaf spot or oval leaf spot
Foliar Symptoms - Color	yellow, brown
Root/Crown Symptoms	none
Fungal Signs	none

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

Net blotch is one of several Helminthosporium diseases which survive in thatch during periods that are unfavorable for disease development. These fungi are most active during periods of cool (60 to 65°F) and wet weather, but some are able to cause disease whenever temperatures are above freezing.

Net blotch is most severe on turf that is growing slowly due to adverse weather conditions or improper management practices. Shaded areas with little or no air movement result in weak turf and extended periods of leaf wetness that favor disease development and plant infection. Deficient or excessive nitrogen, excessive thatch, extended periods of leaf wetness, drought stress, and low mowing heights are factors that encourage the development of Helminthosporium diseases.

Certain cultivars of turfgrasses are very susceptible to injury from Helminthosporium diseases while many of the newly released cultivars have exhibited good resistance.

CULTURAL CONTROL

Use turfgrass cultivars with resistance to this disease when available. Refer to the results of cultivar evaluation trials operated by the National Turfgrass Evaluation Program or local Universities for cultivars

with leaf spot resistance that perform well in your area. When planting cool-season turfs, use blends and mixtures of multiple species and/or varieties whenever possible.

Fertilize to meet the nutritional needs of the turf but avoid over-stimulation and the development of lush, succulent growth. Do not apply more than one pound of nitrogen per 1,000 square feet in a single application. Tall fescue should be mowed to a height of 3 to 3.5 inches. Keep the mower blades sharp to prevent open wounds through which the fungus can enter.

Reduce extended periods of leaf wetness by watering deeply but infrequently to wet the entire root zone. Do not irrigate just before or after sunrise, and ensure good surface and soil drainage. Remove unwanted vegetation that impedes air movement and prune trees to allow for light penetration. Power rake or dethatch to remove excessive thatch and reduce the potential for pathogen survival.

CHEMICAL CONTROL

Net blotch can be controlled on a preventative or curative basis. Applications should be made in the early stages of disease development for best results. Susceptible turfgrasses should be monitored regularly for disease development during cool and wet weather conditions.

Fungicide	Efficacy ⁽¹⁾	Resistance Risk ⁽²⁾	Class ⁽³⁾	Products ⁽⁴⁾
iprodione + thiophanate-methyl**	++++	6	benzimidazole	26/36, Dovetail, Fluid Fungicide
iprodione**	++++	4	dicarboxamide	26GT, IPro, Iprodione Pro, Raven
vinclozolin**	++++	4	dicarboxamide	Curalan, Touche
mancozeb**	++++	2	dithiocarbamate	Fore, 4 Flowable Mancozeb, Dithane, Mancozeb DG, Pentathlon, Protect, Wingman
mancozeb + myclobutanil**	++++	3	dithiocarbamate + DMI	Manhandle
mancozeb + copper hydroxide**	++++	2	dithiocarbamate + inorganic	Junction
azoxystrobin + propiconazole	++++	6	DMI + QoI	Headway
azoxystrobin	++++	6	QoI	Heritage
chlorothalonil + thiophanate-methyl**	+++	4	benzimidazole + nitrile	Spectro, ConSyst, Peregrine, Tee-1-Up, TM/C
chlorothalonil + propiconazole**	+++	3	DMI + nitrile	Concert
chlorothalonil + propiconazole + fludioxonil**	+++	3	DMI + nitrile + phenylpyrrole	Instrata
chlorothalonil**	+++	2	nitrile	Daconil, Chlorostar, Chlorothalonil, Echo, Legend, Manicure, Pegasus
pyraclostrobin	+++	6	QoI	Insignia
thiram**	++	2	dithiocarbamate	Spotrete
propiconazole	++	4	DMI	Banner MAXX, Kestrel, Kestrel MEX, ProPensity, Propiconazole, Propiconazole G-Pro, Propiconazole Pro, Savvi, Spectator, Strider

Fungicide	Efficacy ⁽¹⁾	Resistance Risk ⁽²⁾	Class ⁽³⁾	Products ⁽⁴⁾
myclobutanil	+	4	DMI	Eagle, Myclobutanil
thiophanate-methyl	?	6	benzimidazole	3336, Fungo, Systec, T-Bird, T-Storm, Tee-Off, TM
flutolanil + thiophanate-methyl	?	6	benzimidazole + carboxamide	SysStar
tebuconazole**	?	4	DMI	Torque
triticonazole	?	4	DMI	Trinity, Triton
triadimefon + trifloxystrobin	?	6	DMI + QoI	Armada, Tartan
fludioxonil	?	2	phenylpyrrole	Medallion
fluoxastrobin	?	6	QoI	Disarm, Disarm G
trifloxystrobin	?	6	QoI	Compass

** 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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