

Spring Turf Tune-up for Golf Courses

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The snow is quickly receding, and finally we are getting our first look at how turf has fared over the winter. Actions taken during the upcoming days and weeks can help stimulate healthy turf growth and hopefully give turf a good start for the upcoming season.

Snow Molds

Snow has covered turf surfaces throughout Connecticut for 40 – 60 days this winter. Providing suitable conditions for both gray snow mold and *Microdochium* patch (aka., pink snow mold or *Fusarium* patch). These diseases may be particularly severe in untreated areas or where fall recovery efforts resulted in juvenile turf and/or succulent foliage.

Of the two diseases, *Microdochium* patch presents the greatest threat to turfgrass health this spring. Unlike gray snow mold, *Microdochium* patch does not require snow cover, and will continue to infect turf at temperatures ranging from 32 – 60°F. The foliage of affected areas can thin and eventually attack the crown resulting in turf loss. *Microdochium* symptoms are quite variable. Patches that develop under snow often appear white with a pink border once the surface has dried (Fig.1A). However, in the absence of snow, patches are often orange in color and may contain mycelium (Fig. 1B). The disease is easily spread by spores on mowers and in water (Fig. 2).

Gray snow mold typically only occurs under snow cover. Symptoms appear as patches of gray turf with no distinct border. Mycelium may be present immediately after snow melt. The most diagnostic sign for gray snow mold is the presence of sclerotia imbedded on leaf blades, sheaths and stolons. Several *Typhula* species cause gray snow mold; however the most common one in Connecticut is *T. incarnata*, and it can be identified by the production of reddish brown sclerotia (Fig. 3).

Spring Snow Mold Control

Wet conditions following snow melt, spring rains, and cool temperatures will continue to favor the development of *Microdochium* patch and also complicate its control at this time of year. *continued...*

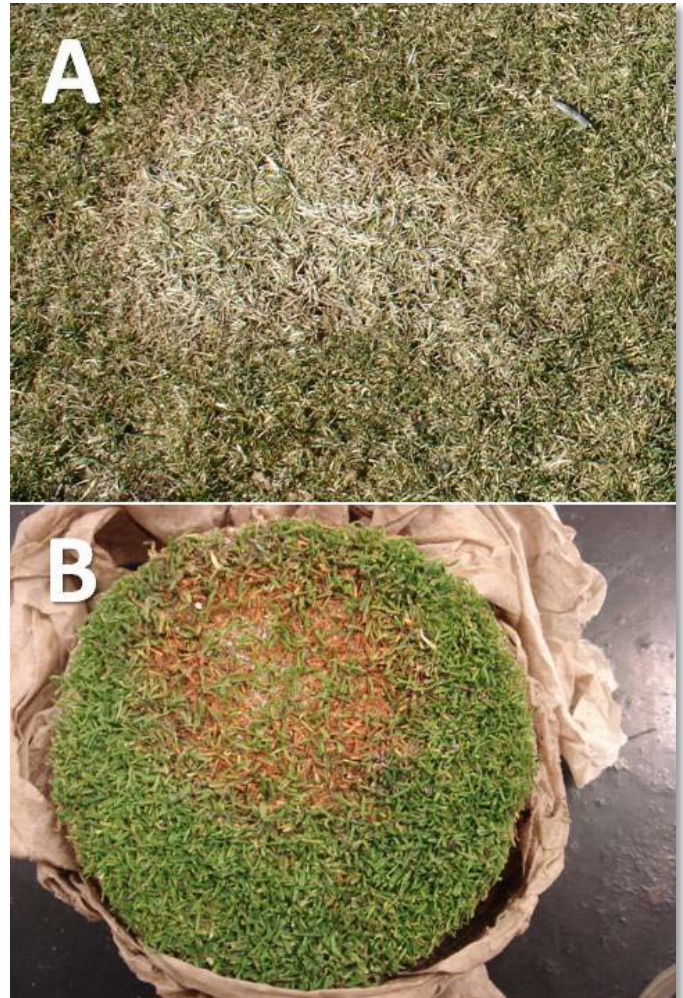


Fig. 1. *Microdochium* patch symptoms developing under snow cover (A), and symptoms developing during a cool, period (B).



Fig. 2. Spread of *Microdochium* patch on roller of mower. Photo by: Jason Haines (@PenderSuper).



Fig. 3. Reddish brown sclerotia (~ 5 mm) produced by *Typhula incarnata* imbedded in leaf tissue of creeping bentgrass.

If *Microdochium* patch is present on high priority surfaces (e.g., greens and tees), a curative fungicide application maybe warranted to arrest further disease development. Several options are available (Table 1); however applications should contain a tank mix of, or premix product containing a contact (or local penetrant) and a systemic fungicide. Initial applications should be made as soon as symptoms are observed, and before any mowing or dragging is conducted to prevent spread of the disease. A follow up application should be applied 14-d later.

Saturated soils may make large spray equipment impractical. If symptoms are confined to a small area, consider spot treating affected areas with a backpack sprayer, or using a granular formulation (i.e., Headway G or Pillar G). For spot treatments, target symptomatic areas and 2 – 3 feet around the affected turf.

Cultural practices directed at stimulating turf growth are also important to facilitating recovery, and encouraging overall spring turf vigor. Foliage of turf affected by snow molds or abiotic winter damage is often desiccated and matted down.

Table 1. Fungicides for *Microdochium* patch control.

Common Name	Trade Name	FRAC Code	Phytomobility	Efficacy [†]
fludioxonil	Medallion	12	contact	4
chlorothalonil	Daconil	M5	contact	2.5
iprodione + chlorothalonil	26GT + Daconil	2 + M5	local penetrant + contact	3.5
propiconazole	Banner MAXX	3	acropetal penetrant	3
pyraclostrobin	Insignia	11	acropetal penetrant	3
trifloxystrobin	Compass	11	acropetal penetrant	3
iprodione + trifloxystrobin	Interface	2 + 11	local + acropetal penetrant	3.5
thiophanate-methyl	3336	1	acropetal penetrant	3

[†]4 = excellent, 3 = good, 2 = fair, 1 = poor. Adapted from Vincelli and Munshaw. Chemical Control of Turfgrass Diseases 2014.

In many cases the lower canopy and crown tissue remains healthy. Matted turf inhibits light and air penetration, and prevents drying of the canopy. Removing matted turf helps dry the canopy and exposes healthy shoots lower in the canopy to light reducing favorable conditions for fungi and encouraging turf growth. Verticutting, grooming, dragging, or brushing to lift matted turf should be conducted once surface has dried. This alone is generally sufficient for gray snow mold recovery. Where *Microdochium* patch is the problem, a fungicide should be applied before verticutting or dragging practices to prevent new infections from occurring. Once matted turf has been loosened, and canopy has dried, initiate mowing to remove desiccated tissue. On greens or other low mowed areas where frost heaving has occurred it may be necessary to roll the surface before verticutting and mowing to remove undulations and reduce potential scalping injury.

Moderate nitrogen fertilization to encourage growth can be applied once soil temperatures stabilize around 50°F. Water soluble N sources will be most effective at stimulating growth at this time, however do not promote fast growing, succulent turf. *Microdochium* patch is known to be enhanced with increasing pH; therefore, use of ammonium sulfate may help reduce disease severity more than nitrate based sources such as calcium nitrate.

Steps in Snow Mold Recovery and Spring Preparations

1. Ensure surface drainage is not blocked by snow and ice.
2. Clear drains.
3. Curative fungicide application (*Microdochium* patch only).
4. Roll surfaces maintained at 0.5 inches or less.
5. Scarify, verticut, drag, brush, etc. desiccated matted turf.
6. Initiate mowing once canopy dries.
7. Moderate water soluble N fertility.
8. Reapplication of fungicides as necessary.