



Box 1676
Camrose, AB
T4V 1X6
(780) 678 6450
sales@scottsqualitylawncare.ca
scottsqualitylawncare.ca

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COMMON LAWN FUNGAL DISEASES

We welcome your questions about lawn care...

Sometimes the questions require a bit of investigation before we can diagnose the problem and recommend a possible solution.

One of our other lawn care documents addressed the question of “What are these dead spots appearing on my lawn?” We offered possible solutions for what might be causing those dead spots with the exception of the cause being due to a fungal lawn disease, which is a whole other rather large topic.

This document is all about those fungal lawn diseases, not only those that may be a cause of dead spots on your lawn but possibly other kinds of turf problems or issues, too.

It’s a huge topic but we’ll review the basics on the more common types of lawn diseases that a home owner might ever encounter.

Firstly, let it be said that fungal diseases are common and usually due to temporary environmental conditions and poor lawn care practices... They come and they go. However, proper lawn care practices will reduce the likelihood of recurrence.

There is seldom a need for aggressive or drastic measures, unless you’ve let a disease totally take over your lawn before addressing it.

THE USUAL CAUSES OF LAWN FUNGAL DISEASE

You may or may not realize it but lawns are naturally full of fungi and spores. They’re always resident within your soil without you even knowing it. Some fungi and spores are totally harmless and a non-issue, whilst others can cause problems for your grass. As such, given the right conditions for the fungus, or shall I say, the wrong conditions for your grass, these fungi can break out into a harmful disease.

Here’s a list of the usual or most common causes of a lawn fungal disease. It could be any one, or more likely, a combination of any of the following ---

- ✓ **Drought conditions -**
 - Summers tend to be hot and dryer than other seasons but proper watering can help.

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✓ **Improper mowing -**

- It's best to vary the height of your mowing throughout the year.
- Depending upon your grass type and climate, keeping your lawn ideally about 2½ to 3½ inches tall through most of the year is fine, albeit with a few variations here and there...
 - In the spring for the first mow, to pick up any thatch or debris, etc., you may want to start off at about 2 to 2½ inches or so and then gradually increase it a bit.
 - This will give your grass a chance to fully rejuvenate from the winter and thicken up a bit.
 - This will aid in preventing any encroaching weeds by crowding them out (as most weeds don't like competition).
 - But by the time the warmer summer months come by, you should be raising the mowing height a bit especially if it's very hot and very dry, working your way up to 3 to 3½ inches or so.
 - We'd recommend that you don't cut it any lower than 3 inches or so as the slightly longer grass will shade it a bit more from the summer heat.
 - In fact, if you're experiencing a heat wave and excessively dry weather, keep it around 4 inches to ensure it's well shaded.
 - If you cut it at a lower height you risk drying out or burning your lawn or causing it to struggle too much, and as such, struggling or stressed lawns are more susceptible to fungal diseases.
 - If you're one who loves spending a lot of time maintaining your lawn and you've had good experiences going for that golf course green kind of very short lawn (which we wouldn't recommend for the normal grass types and lawns in our area)... just be sure not to stress your lawn too much and be sure to water properly, too.
 - By the end of fall when it comes to the last mow before winter after you've done your cleanup of leaves and any other debris, etc., be sure to lower your height to 1½ to 2 inches.
 - This will prepare your lawn for winter.
 - If you leave it too tall for the winter you may encounter rather obvious snow mould or other fungal diseases as well as possibly field mice or vole damage which will be evident once the snow has melted away the following year.

✓ **Compacted soil -**

- If the soil under your lawn is too compacted, your grass is going to be having difficulty with water assimilation/moisture retention and getting enough oxygen down to the roots.
- The ground is apt to be blocky and it will be harder for grass roots to grow deeper, stretch out and establish themselves well.
- This in turn weakens your grass making it more vulnerable to fungal disease(s) arising.

✓ **Overwatering, or as is more often the case, improper watering -**

- A common mistake homeowners make is routinely watering their lawns for 10 to 15 minutes every day or every other day once they get home from work... Bad idea!
- The only way to encourage necessary deeper root growth is to water less frequently but when watering be sure to put down at least a good inch of water to really saturate your lawn.
 - Generally speaking, once a week (or twice a week during a hot summer), but watering it for a good hour or so each time, will help your grass become more heat tolerant and drought-tolerant.
 - Typically a healthy lawn requires 1" to 1½" of water per week.
- Light waterings tend to evaporate away more quickly and if watered in the evenings can actually cause your grass to stay wet over night and can lead to fungal disease(s).
 - More frequent light waterings will actually cause your grass to have shallow roots.
 - Shallow root systems dry out fast and weaken your turf.

- Common-sense comes into play obviously, too... Your grass will show you signs if you're not watering it enough... or if you're watering it too much.
 - FYI... If you can't easily push a 6" screwdriver into your lawn, you're probably not watering it enough.
 - Or... if your lawn is squishy or feels wet when you press down to the soil, you don't need any watering that day.
 - If mushrooms are starting to regularly appear on your lawn, (whose fungi is always within your soil), your lawn is too wet and doesn't need any watering for awhile.
 - However, be sure to remove those mushrooms by hand or else they will spread throughout your lawn.
 - Once your lawn returns to normal moisture conditions, the mushrooms are not apt to keep on appearing.

- ✓ **Lack of routine fertilizer regimen or too much fertilizer (or using the wrong kind) -**
 - It's a good lawn care practice to periodically fertilize your lawn, as it will surely benefit from the additional nutrients it receives.
 - As such, we offer an excellent regimen of up to 4 liquid fertilizer applications per year (Ours also includes a contact herbicide for very effective weed control).
 - The healthiest of lawns may seem like they don't need much routine fertilizing, but oftentimes they don't get that away until they've had a regular regimen of fertilizer applied each year, and/or the soil underneath the lawn is rich in nutrients.
 - If your grass and the soil underneath it is lacking crucial nutrients it's going to be suffering and more susceptible to potential lawn diseases arising.
 - As such, we also offer an all-natural ENRICH Soil Enhancer 3-application product that essentially feeds your grass and the soil underneath it, making it rich in nutrients thereby increasing microbial activity and diversity, and overall health.
 - Remember, too, that a lush, thick and healthy lawn, won't concede much room for weeds or fungus to cause any problems.
 - Or if they occasionally do encounter a temporary fungal problem, healthy lawns will recover and return back to normal far more quickly than a thin, weaker lawn that has been struggling or that hasn't routinely received proper maintenance and care.
 - Be sure to use the right type of fertilizer with proper NPK nutrient ratios according to your grass type and the time of the year that you're applying it.
 - The liquid fertilizer we use is optimized for our region's climate and grass types and the time of the year we're applying it... It's not a "one-size fits all" generic granular fertilizer.
 - Whatever you use, be sure to follow manufacturer instructions and be careful to not apply too much fertilizer or spill any of it on your lawn as you may burn your grass.
 - This is why all grass should also be amply watered-in after any fertilizer application, and especially so with granular fertilizer.

- ✓ **Wrong grass type for your yard -**
 - Find out what grass type is best for where you live and the type of climate you have.
 - If cool season grasses grow best in your area, don't plant a warm season grass.
 - Be mindful also that some grass types are better for shaded lawns than others.
 - The proper grass type will grow better and not be as susceptible to any lawn diseases taking advantage of it.

- ✓ **Environmental stress due to weather conditions (particularly temperature and humidity) -**
 - Prolonged periods of very wet weather followed by excessive hot temperatures and dry conditions can cause struggling lawns to incur fungal diseases, or the reverse, too. [More about that later]
 - Likewise, exceptionally hot or unseasonably cool temperatures can significantly stress lawns and make them more susceptible to fungal diseases.

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- NOTE: Over the last couple years our normal climate in our region has been changing...
 - We used to be more on the drier side, but these past two growing seasons we've been experiencing some extremely wet weeks, punctuated with some occasional unusual heat waves, which it seems may become the new normal for us.
 - Those dramatic changes tend to be a little more extreme and suddenly variable throughout those months.
 - As a result we've seen lawns struggling more or encountering lawn diseases.
 - It's important to adapt your lawn care practices accordingly and address any turf problems as they occur.

COMMON LAWN DISEASES

As previously mentioned, most lawn diseases are caused by fungi that occur naturally. The vast majority of fungi are actually beneficial and contribute to the breakdown of organic matter into usable nutrients that your grass can absorb and use as food.

Symptoms of disease in a lawn can show up in a number of ways, depending upon the fungi and at what point in its cycle you're observing and indentifying it. It's important to note that symptoms at the onset of a fungal disease may differ from how it may look once it's fully mature or perhaps near the end of running its course, so to speak.

Here are some signs that your lawn may have a fungal disease:

- White, yellow, or brown patches or rings that grow in diameter.
- Thin patches of frayed, distorted, or discoloured grass blades.
- Gray, black, red, orange, or purple spots on blades or stems.
- Gray, black, or pink powdery or threadlike coatings on and around grass blades.
- Areas of darkened, wet-looking, slimy, or greasy-looking grass.
- Grass roots that appear black and rotten.

As you read through this document you'll notice that most lawn diseases, to some degree, share some common symptomatic appearances as well as common causes and similar preventative measures and treatment solutions.

At first glance, looking down at your grass from above, any potential fungal disease you think you have may even look similar in how they manifest themselves. It may not be until you take a close-up look at the actual blades of the grass or the roots that you're able to more accurately determine which fungal disease your lawn may have. If in doubt, don't hesitate to give us a call and we can drop by to take a look and make that determination for you.

Though for many lawn diseases there's not a one-time magic cure that can be applied, most measures would be considered preventative, to avoid or lessen the chance of getting the following diseases. The fact is, most fungal diseases are temporary so as long as effective preventative measures and proper routine lawn care and maintenance is provided, they should be able to be lessened or removed entirely, allowing the lawn to return to normal.

What follows in the rest of this document are some of the more common lawn diseases and how to identify them...

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*** SPECIAL NOTE & GENERAL USAGE DISCLAIMER ***

We'd like to mention up front that some of the following illustrative photos are SQLC's, and some are not. We do not claim ownership of every photo within this document. Nor does our inclusion of them, mean that any rightful owners of these photos necessarily agree with or endorse what we've written within this document. We therefore give credit to those who may be the original owners of these photos --- We've seen them likewise displayed on numerous lawn care websites without links to the original sources, so we're honestly not sure who may be the original photographers. That being said, if anyone wants to use our SQLC photos, they may do so, too, as we're totally fine with that --- Our purpose is nothing more than wanting to educate you about such lawn diseases. We gratefully acknowledge that the following photos, no matter who took them, are some near-perfect examples of various fungal diseases. Whoever photographed them, did so at the perfect time to clearly indicate the main and most obvious symptoms of the diseases --- Our hats go off to them for a job very well done. In utilizing them, we simply wanted to give you the best possible photographic examples of what these particular lawn diseases would look like, to help you identify and know what you're dealing with.

BROWN PATCH



There are many lawn conditions that can cause patches of brown, dead grass on your lawn. However, only one gets the official name Brown Patch, caused by a single species of fungus, *Rhizoctonia*. This fungus can survive for years within your soil until conditions are just right and it manifests itself as Brown Patch disease.

Brown Patch is one of the more common diseases that can affect almost any cool-season lawn, especially tall fescue and perennial ryegrass, in particular. Kentucky bluegrass, fine fescues and bentgrass can occasionally be affected, but the damage is usually minimal in these grass types. Brown Patch can also affect a variety of warm-season grasses, including St. Augustine grass and zoysiagrass.

It affects lawns during hot, humid summer weather. It's at its worst after an especially wet summer. It's also quite common in the fall, too, when daytime temperatures may still be in the 25°C (80°F) range while nighttime temperatures are in the 15°C (60°F) range. This can cause heavy dew which can worsen fungal infections.

In addition to heat and humidity, the main factors inviting Brown Patch are excessive nitrogen and irrigation, which means that very lush and green lawns can be susceptible to Brown Patch if the watering is excessive and too frequent, or too much fertilizer is being applied too often.

Other possible causes include lack of air movement, poor soil drainage, excessive thatch, and compacted soils, which means that poorly maintained lawns are more susceptible to Brown Patch disease.

Brown Patch is a foliar disease, meaning that it harms the blades of grass but not the crown of the plant or the root system. Lawns affected by it may recover on their own, without fungicide intervention.

It is generally easy to identify as per the above photos.

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Brown Patch disease will thin out your turf, severely affecting the lawn health and needless to say, the curb appeal of your property.

It usually shows up as large, roughly circular or somewhat irregular patches that are brownish-yellow in color and range from 15 cm (6 in) to several feet in diameter, and appear to be either dry or dead. It can expand its patches rather quickly and can be at significantly high levels if not addressed early. Affected areas sometimes may have a sunken appearance but more often the grass inside the patch simply becomes thinner than the surrounding lawn. The outside of the patch may sometimes appear to be darker than the inside, too. If the disease has been active for a long time, the inside of the patch may recover, leaving a ring of dead or thin grass around it. With St. Augustine grass, Brown Patch can look like a brownish interior patch with a yellow outer ring.

Typically, the affected grass blades usually remain upright, and close inspection shows lesions on the leaves that are tan in color and irregular in shape with a dark brown border. White, cottony, mycelium can be found on dew-covered turf in the early part of the morning.

PREVENTION/TREATMENT OPTIONS

Some of the conditions that are conducive to Brown Patch are beyond a homeowner's control, such as air temperatures and humidity levels. These may cause a lawn to develop this disease no matter what a homeowner does.

However, you can minimize the chances of Brown Patch with proper lawn care practices:

✓ **Do not over-fertilize ---**

- There's definitely nothing wrong with a periodic fertilizer regimen tailored to your type of lawn and in particular, normal seasonal requirements.
- However, you should avoid feeding your lawn during excessively hot and humid weather as well as spacing the fertilizer treatments too close together... 4 to 6 weeks apart is a good interval.

✓ **Use proper watering practices ---**

- If you water, do it early in the morning so the grass can dry out fully before nightfall.
- And do it only once to maybe twice per week, at most, but when doing it, give it a good soaking...
- Ideally, you want less frequent waterings. Putting down more water at a time is better than a brief watering every day or other day.
- If it's rained recently or dew is collecting on your lawn each morning, your lawn may not need to be watered at that time.
 - Standing dew can be removed by dragging a water hose over the lawn, which will lower the humidity that can cause Brown Patch disease.
- Also, if you're seeing mushrooms appearing regularly on your lawn, you can likely forego the watering that day..
 - However, be sure to remove those mushrooms by hand as you do not want them spreading themselves by your shoes or lawnmower.

✓ **Improve air circulation ---**

- We recommend that you aerate and de-thatch your lawn annually.
- Improved air circulation will reduce the humidity that causes Brown Patch.

✓ **Reseed with resistant grass varieties ---**

- A variety of grasses are available with moderate resistance to the Rhizoctonia fungus.
- If Brown Patch is recurring every year on your lawn, consider top-seeding your lawn with resistant grasses.

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✓ **Apply fungicide if appropriate ---**

- Brown Patch does not normally cause permanent damage and most lawns typically recover without chemical treatments.
- For the more extreme cases, there are some effective solutions for controlling Brown Patch.
 - The QoI family of fungicides (strobilurins) are among the best fungicide options because they offer up to 28 days of control, as well as control of other diseases that may occur at the same time.
- That being said, most lawn care experts agree that fungicide treatment is appropriate only for high-value ryegrass and bentgrass turf blends.
 - The first spray of fungicide should be applied immediately after the symptoms first appear, especially if hot and humid weather is expected.

SUMMER PATCH

Summer Patch is somewhat similar in appearance and management to Brown Patch. However, Summer Patch is worse for your lawn because it kills the roots as well as the grass. Unfortunately, reseeding is oftentimes necessary after you've had a serious Summer Patch infection.



Summer Patch tends to be most active in hot weather. Disease symptoms often appear during lawn stress in summer months. If your lawn is slow-growing or has wilted turf, and is dotted with tan or brownish, straw-colored irregular circles or patches, rings, or crescent shapes of dead grass that increase in size throughout the summer, it's likely Summer Patch. Oftentimes it may have small clumps of green grass inside of the patches, too.

Affected patches are typically only 3 to 8 cm (approx. 1" to 3") in diameter, but they may enlarge or coalesce to about 30 cm (approx. 12") in diameter.

While not quite as common as other lawn fungal diseases, Summer Patch can be one of the more difficult to eradicate diseases in annual bluegrass, Kentucky bluegrass, and fine fescues. Older varieties of creeping bentgrass maintained at low mowing heights can also develop symptoms of Summer Patch. Other types of lawn grass, such as tall fescue, perennial ryegrass, and zoysiagrass, tend to be more resistant or immune to the disease.

As mentioned, Summer Patch is rather destructive in that it kills grass by infecting and destroying its roots. It can invade root tissue and remain undetected even during the Winter months. It starts to do its damage in the late spring to early summer once soil temperatures rise above 18°C (65°F).

Generally, it's between June and September during periods of high humidity when daytime temperatures are over 28°C (82°F) that this fungus is apt to invade your lawn's vascular system, destroying roots and essentially disrupting your grass's ability to take up crucial water and valuable nutrients.

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Also, excessively wet periods followed by hot and dry conditions can bring on severe symptoms as such dramatic changes can severely stress a lawn especially later in the summer. Affected grass will often die during these dry periods as there may not be enough root system to support it.

You can check for yourself --- Pull up a small tuft of grass and examine its roots. Healthy grass roots are lighter in color and longer whereas the roots of grass infected with Summer Patch are dark brown or black and short because they are essentially rotting.

As shown in the photo below, Summer Patch blighted areas will often occur on lawns that receive a lot of direct sun or are on south-facing slopes or near sidewalks, driveways, buildings, or otherwise potentially more-easily stressed areas.



In the cool weather of fall, the grass may begin to seemingly recover and grow back into these dead areas again. The disease, however, may reappear in previously affected areas the following summer, and may even increase in intensity.

Be mindful that low mowing heights can contribute to your lawn's susceptibility to Summer Patch.

Likewise, the condition of the soil beneath your lawn can be a contributing factor; compacted soils delay or prevent the establishment of deep root growth and the turf is thereby weakened as a result of slow water and nutrient intake and an increase in thatch build up. However, it is less of a problem during cool summers with adequate normal rainfall.

PREVENTION/TREATMENT OPTIONS

As with most lawn fungal diseases, proper lawn maintenance and care is the best preventative medicine.

- ✓ **You should never cut more than 1/3 the length of grass blades when you mow ---**
 - Cutting off more than that length from grass that has been otherwise left to grow longer is a common cause associated with this disease.
 - Likewise, scalping or mowing too closely weakens the grass and makes it vulnerable to infection.
 - Also, be sure that your mower blades are always sharp so that you're not ripping and tearing at the grass with blades too dull to make the proper clean cut.
 - Also, be sure to bag any grass clippings to prevent any further fungal spread.

- ✓ **Unless part of a balanced periodic regimen of fertilizer, avoid adding too much nitrogen-based fertilizer to your lawn during the summer.**
 - This is why it's important to buy fertilizers with NPK values that are optimized for the time of the year.

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- ✓ **Watering lightly and frequently in hot weather is another practice to avoid** as it continually dampens the shallow areas where the Summer Patch fungus resides, helping promote its development ---
 - This is likely to be mentioned for most lawn diseases but watering less frequently (only once per week or perhaps twice a week when very hot and dry) but putting down more water when watering is much better for lawns as it will promote deeper root growth, too, as opposed to shallow root growth that makes lawns more susceptible to fungal infections.

- ✓ **Soil aeration is very important to prevent thatch buildup and improve drainage ---**
 - The thatch layer in any lawn is the place for fungi to live, overwinter and grow, and given the right conditions, attack the grass.

 - Spring and late summer/early fall are good times to reduce thatch and soil compaction via aeration.
 - Aeration also helps to increase water and nutrient saturation as well as helps to stimulate root development.
 - If you have heavy clay soil or clay loam soil annual aeration is highly recommended to prevent your soil from becoming compacted.

- ✓ **Summer Patch can cause severe damage in a short time and preventative fungicides may be necessary to suppress or eliminate its spread ---**
 - Strobilurins and DMI (propiconazole) fungicides are most effective.
 - These applications should be timed in the late spring when the fungus is active, targeting applications when soil temperatures reach 18°C (65°F).
 - However, once disease symptoms appear, control options are quite limited and fungicides are not very effective at this late stage.

PYTHIUM BLIGHT



Pythium Blight has a few nicknames such as grease spot, spot blight, or cottony blight. You can actually see why they might be called that, too, based on the above photos.

The primary grass species this fungal disease attacks is cool season grasses such as bluegrass, fescue, ryegrass, bentgrass and others.

The Pythium fungus can make grass look and feel wet and oily or rather slimy or greasy when rubbed between two fingers. In later stages, when the turfgrass is wet or where air circulation is poor, it can cause cotton candy-like fluffs of white or gray web-like mycelium to grow out of infected turf, especially on mornings with dew.

Pythium Blight is classified as a water mold. Outbreaks are generally associated with water-logged, poorly drained soils. It tends to follow surface drainage channels. It causes the worst damage to lawns in persistently hot and humid weather when there's little drying of the grass blades.

Overwatering during heat waves often creates conditions perfect for Pythium Blight. It's during these warm humid conditions when grass leaves are wet for at least 12 to 14 hours that this blight may occur.

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The disease can be particularly severe when daytime temperatures exceed 28°C (82°F) and night temperatures never fall below 20°C (68°F).

Initial symptoms appear as dark green to purple water-soaked leaves that cluster into circular or irregularly shaped patches. Then the grass starts to turn from green to light tan or light brown. The patches may even assume a reddish color if weather conditions become cooler and drier. And then as it gets more severe, infected grass will quickly brown, wilt, dry out and die.

Dead patches of grass can grow to be 15 cm (6 in) or more across. Patches of infected grass can enlarge and merge together, causing severe damage to lawns, golf courses and athletic field turf.

Pythium Blight is easily spread by moving water and mechanical equipment. It can travel on the blades of a lawn mower and on the soles of shoes. It also loves over-fertilized, alkaline (pH over 7) soil with high levels of nitrogen and low levels of calcium.

PREVENTION/TREATMENT OPTIONS

As with most lawn diseases, Pythium Blight is easier to prevent than to cure. You can't do much about hot and humid weather, but you can take other steps to keep your lawn healthy and dry, and make it less hospitable to the fungus ---

- ✓ **If your lawn is already infected with Pythium Blight, you want to first contain the spread of the disease ---**
 - Your chance of restoring your lawn back to normal is best if you catch it at the oily-looking stage, before the grass turns streaky, patchy and brown.
- ✓ **Fertilize carefully, ideally with a periodic, balanced, slow-release formula.**
- ✓ **Water for longer periods of time, but less frequently (no more than once a week), and water early in the day.**
 - This way, grass blades have a chance to dry out before nightfall.
- ✓ **Power rake (de-thatch) your lawn to prevent and remove thatch buildup.**
- ✓ **Aerate your lawn to loosen compacted, poorly draining soil.**
- ✓ **After mowing, bag your grass clippings, or after aerating or de-thatching, wipe off your mower blades and tools as well as your shoes to prevent further spreading of the fungus.**
- ✓ **Block off the infected area from foot traffic.**
- ✓ **If needed, level out your lawn to minimize areas where water might otherwise pool.**
- ✓ **Fungicides are available for control of Pythium Blight (Mefenoxam, Daconil, Chlorothalonil, etc.)**
 - But they need to be applied prior to observing symptoms.
 - Once symptoms appear, fungicides are not nearly as effective in stopping this disease.

RED THREAD

Does your lawn have what appears to be wilting or dying patches with thin, red or pink webbing or spiky threads or strands extending from the grass blades? It's likely that this is Red Thread.



One form of this fungal disease has thread-like strands, as its name implies. The other form appears as fuzzy, cotton-candy-like pink clusters of mycelium.

Red Thread is sometimes confused with a disease called Pink Patch. At first glance, it also has a somewhat similar appearance to Pink Snow Mold and Dollar Spot. However, Red Thread is positively identified by its thread-like/antler-like structure or mycelium clusters.

You'll know you have it if you see it --- The infected patches of grass turn light tan or light brown color, and the leaf tips may be covered with fine pink to red threads, giving the turf an overall pinkish-red color. The best time to look for Red Thread is in the early morning when there's still dew on the blades. When the grass is wet, Red Thread appears darker red in color; when dry, it looks more pink.

In addition to the pinkish-red color, affected lawns have grass blades that look ragged and seem to be dying back from the tip of the leaf. The affected grass will appear in irregularly shaped, straw-like patches that range in size from 5 cm (2") to 25 cm (10") normally, but can be as large as 3 feet in diameter.

While affected areas of grass may appear to be dead, the pinkish-red growths that appear in the grass do not infect the roots of the plant, so the grass is not killed by the fungus.

Among the first lawn diseases of the growing season, Red Thread is extremely common in spring to early summer, but can also appear in late summer and fall as well, if the conditions are right. In fact, during very wet growing seasons, Red Thread can become a serious problem during wet summers and during heavy dews in the fall.

Though Red Thread can occur in many different climates, it is more common in areas experiencing prolonged periods of moisture (excessive rain or heavy dew), or if routinely watering in late evening (which is never a good idea). Temperatures in the 18°C (65°F) to 24°C (75°F) range with high humidity are primary conditions for Red Thread appearing.

Most grass species are affected but cool-season grasses like fine leaf fescues, perennial ryegrass, Kentucky bluegrass, and bentgrass are most susceptible.

The disease can be more severe on poorly aerated lawns that have a high thatch layer, as well as lawns that are grown in nutrient-deficient soils. It's most likely brought on by low levels of nitrogen in the soil, and although it's a relatively harmless disease, that's a pretty good indicator that it's time to fertilize your lawn.

PREVENTION/TREATMENT OPTIONS

- ✓ Since it's not possible to entirely remove the fungus or control the weather, **the most effective treatment for Red Thread is to fertilize your lawn with the proper amount of nitrogen as part of an ongoing balanced fertilization program ---**
 - Nitrogen applied to the lawn in the fall will nourish the re-emerging turf in the spring, but much of that nitrogen will be gone by late spring.

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- Be aware that it may take 2 years or more of periodic fertilizer treatments to prevent Red Thread from coming back in the spring.
- We offer an excellent optimized regimen of up to 4 liquid fertilizer applications per year (Ours also includes a contact herbicide for very effective weed control).

In addition to the above, red thread is best controlled with a combination of proper lawn care practices:

- ✓ **Water only in early morning and deeply once a week** (or if an excessively hot and dry summer, then twice a week) ---
 - Do not allow your lawn turf to get excessively dry or excessively wet.
- ✓ **Be sure your lawn has proper drainage** ---
 - Water-logged soil will invite the disease, too.
- ✓ **Aerate your lawn annually to relieve compaction** ---
 - Aeration helps to increase water and nutrient saturation as well as helps to stimulate root development.
 - This will also help create an environment where natural bacteria in the soil can be beneficial.
- ✓ **Power-rake (dethatch) your lawn annually** ---
 - Some thatch (up to 1/2 inch) will help to prevent Red Thread, but too much thatch will cause problems as the fungus resides in the soil and the thatch layer of your grass.
- ✓ **Over-seed your lawn with less susceptible grass types and do some organic compost top-dressing.**
- ✓ **Don't use a blunt or badly adjusted mower** ---
 - Make sure your mower blades are sharp, otherwise you'll bruise or tear at your grass and remove chlorophyll from the grass blades thereby leaving it more susceptible to the fungus.
 - Bag all the grass clippings when mowing, otherwise you can spread it to uninfected parts of your lawn.
- ✓ **Additionally, if deemed necessary, consider applying iron treatments during the fall and spring** ---
 - It not only helps control any moss but will harden the grass and make it less susceptible to Red Thread.
- ✓ **There are preventative chemical control options available** ---
 - However, by the time the red threads are seen, it is usually too late and not very effective.
 - As such, treating Red Thread with fungicides is generally not necessary and not recommended for residential lawns.
 - However, chemicals are a viable option for the most extreme cases where proper lawn care practices just don't seem to be doing enough. This involves the application of a fungicide, usually a type of QoI inhibitor (strobilurins), or trifloxystrobin.

RUST DISEASES

We all know what rust looks like on our cars or tools, which is caused by a chemical reaction between iron and oxygen in the presence of water or air moisture. However, rust diseases on grasses are caused by various species of a common lawn fungus.

It's the proper name for it and the rust gives grass blades a rusty appearance. If you pull a couple blades out of your grass and look closely at them, they'll be coated with yellowish-brown to orange-red dust or spores.

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The lawn rust typically begins with yellowing your leaf blades and then small yellowish spots appear which turn to orange, red or brown colouring as it matures. The spores can be rubbed off the grass blades with your fingers. Overall, in affected areas, the grass coverage is thin and the blades are weak and break easily, but fortunately, the grass isn't apt to die off completely.

Grasses typically affected are Kentucky bluegrass, perennial ryegrass, and tall fescue.

Grass rust fungus spreads easily through its spores. The formation of the spores often occurs when there are cool nights with heavy dew and frequent rainfall. It usually shows up in late summer or early fall, particularly during wet years. It's essentially warm cloudy, humid conditions followed by intermittent bright sunlight that favour the formation of the spores. Basically, anytime the grass is not allowed to dry out after a period of 6 to 8 hours, rust on the grass may begin to form.

Similarly, if the grass is shaded most of the time by perhaps overhanging trees branches, etc., that also can produce the more humid conditions with less air circulation to dry out the grass and can lead to lawn rust.

Grass rust problems also appear more frequently when thatch in lawns is too thick or mowing is infrequent.

Sometimes rust will appear in the spring due to a lack of nitrogen, if the lawn has not been fertilized properly, so be sure to feed your lawn regularly throughout the year to help prevent it.

Essentially, grass blades coated with lawn rust minimize the ability of the grass to photosynthesize. When the leaves are excessively covered with these spores, the photosynthetic action cannot be carried out efficiently and the fuel for good health and growth is not adequately collected.

Additionally, the accumulation of spores create dust and is spread easily, by anything... from the wind, or grass blades brushing against one another, and from people, animals or even insects walking through it. Be mindful of that when mowing and that it may also cling to shoes and lawn or garden equipment, and thereby spread elsewhere.

PREVENTION/TREATMENT OPTIONS

Lawn rust forms almost exclusively when the grass is in a period of slow growth, so anything that interferes with your lawn's normal, healthy growth puts it at risk for this fungus.

There's nothing you can do to control the weather but there are plenty of other ways to optimize your lawn's growing conditions. Most grass rust problems can usually be resolved with good maintenance and healthy practices such as:

- ✓ **Mow the lawn frequently to keep it at a moderate height ---**
 - Bag your grass clippings and also be sure to rinse off lawn equipment to prevent the spread of disease.

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- ✓ **It is always a good idea to aerate the lawn when faced with any fungal lawn infections, as many fungi prefer moist, poorly draining soil to grow in ---**
 - Aeration reduces soil compaction so water, fertilizer, and air, can reach your lawn's roots more effectively.

- ✓ **Additionally, power-rake your lawn to remove any thatch that becomes more than ½ inch deep ---**
 - If you allow too much thatch layer in your lawn, it will minimize air circulation and provide an ideal breeding ground for the fungus spores.

- ✓ **As alluded to, lawn rust can be prevented by fertilizing the lawn with nitrogen-based fertilizer at periodic intervals (every 4 to 6 weeks or so).**

- ✓ **Watering for long periods at long intervals rather than for short periods at short intervals to ensure that the grass continues to grow thickly ---**
 - Watering your lawn in the cooler hours of the early morning gives the grass a chance to dry out before the higher heat of the day occurs.
 - Avoid watering in the evening because it creates the ideal wet and cool conditions for lawn rust fungus to grow and release its spores.

- ✓ **In all but the most severe cases, rust fungus in lawns does not require fungicides ---**
 - If necessary, some fungicides that work best on lawn rust include:
 - DMI (DeMethylation inhibitor) and QoI (strobilurin).
 - However, if you decide to go the chemical route, fungicide should be used only on well established lawns and only if your other lawn care efforts have failed.
 - The fungicide should be applied before the lawn goes dormant for the winter.
 - Most lawn rust infections clear up with just 1 treatment.

POWDERY MILDEW



Powdery Mildew is a common fungal disease. It is more apt to affect turf that is already under stress and experiencing high humidity. Poor air circulation and temperatures between 15°C (60°F) and 22°C (72°F) are also favorable for the growth of Powdery Mildew. That being said, it can even occur at temperatures between 1°C (34°F) and 30°C (86°F).

Powdery Mildew affects nearly all northern cool-season grasses and favours Kentucky bluegrass, ryegrass, fine fescue, and Bermuda grass. Fortunately, Powdery Mildew is usually not severe enough to cause significant problems though it can kill weakened, already-struggling lawns.

It can appear quickly on a lawn, mainly in shady areas and more frequently during cloudy or overcast periods.

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You're more likely to notice it when cool, damp nights follow warm, humid days, especially if your lawn is shady or has been overfed, so to speak. The grass blades will look like they have been dusted with flour. Closer inspection will reveal a whitish-grey, dusty, powdery growth primarily on the upper surface of the individual grass blades. As the mildew forms, the grass blades will start to yellow.

Advanced stages of the disease will cover the whole leaf with mycelium, eventually turning the foliage yellowish-orange and then brown. As the disease progresses, the grass blades may wither and eventually die. In the meantime, the grass becomes more susceptible to other stresses and diseases.

PREVENTION/TREATMENT OPTIONS

It's been said before, but like most lawn fungal diseases, prevention is the best treatment.

Powdery Mildew like any other disease is unsightly but treatable. It's not as damaging as other diseases and with the right amount of time and patience it will go away naturally or can be controlled or alleviated with the assistance of routine good maintenance and proper lawn care practices such as:

- ✓ **Be mindful that the type of grass seed is important ---**
 - In shady areas, change the type of grass to a more shade-tolerant variety.
 - Or overseed with shade-tolerant seed.

- ✓ **Water properly... Avoid watering at night ---**
 - Lawns thrive on deep watering once every week depending upon local weather conditions.
 - Don't let your lawn wilt during really hot weather.
 - If it does, start watering right away.

- ✓ **Feed your lawn regularly ---**
 - It is beneficial to follow a proper balanced fertilization regimen and to water the appropriate amount at the appropriate times.
 - However, avoid excessive nitrogen which can contribute to the disease.

- ✓ **Improve air circulation in affected areas and reduce the amount of shade the grass is getting ---**
 - Prune surrounding trees and shrubs for better air circulation and to allow light penetration.
 - Consider eliminating any fencing or allowing for a more breathable fencing, as well as removing any children's toys or lawn ornaments that may be blocking air flow or producing shade.

- ✓ **You should aerate your lawn annually to improve soil drainage.**

- ✓ **During hot summer months, raise your mowing height to 3 to 3½ inches or higher ---**
 - Healthy grass is thick grass. But if you cut it too low, it will stress your lawn and it may not grow back very well, and weeds may also arise.
 - Therefore set your mower higher, keep your blade sharp, and never cut off more than the top third of your grass.
 - Also, be sure to bag any grass clippings to prevent any further fungal spread.

- ✓ **Fungicides such as Manzocob, preferably in combination with the chemical Myclobutanil, can be used for severe bouts of Powdery Mildew ---**
 - However, they are not normally necessary to stop an outbreak or prevent the spread of this fungal disease.

DOLLAR SPOT



Dollar Spot is a common lawn disease.

As its name implies, Dollar Spot, in its early stages, develops small, light tan or straw-colored roughly circular patches from 2 cm (1 inch) to 15 cm (6 inches) across, about the size of a dollar coin or a small pancake sunken in the turf. Occasionally, small cottony mycelial strings of the fungus can be seen growing from the diseased leaf blades.

Dollar Spot commonly occurs on golf greens but it may also become a severe problem on residential lawns growing within dry soil but yet very humid air conditions.

It affects most types of warm-season and cool-season grasses, but especially fescues, ryegrasses, bentgrasses, bluegrasses, bermudagrasses, and zoysiagrasses.

Individually, these spots may not look very serious but because the Dollar Spot fungus kills the grass right down to the roots, potentially serious damage to lawns can occur. If it's a serious bout of this disease you may need some lawn renovation or reseeding once the disease is brought under control.

It's also important to note that the disease fungi are spread from one area to another by water, wind, mowers, other equipment or shoes, etc.

Dollar Spot can occur from late spring to late fall, and is at its worst in low rainfall summer seasons marked by warm days with high humidity when nights are cool and morning dew is heavy. The peak of disease activity occurs when temperatures are between 21C (70F) to 32C (90F). When the turf roots are low on water but the leaves of your grass are wet for longer periods of time from either heavy dew, excessive rainfall over a few days, or late in the day irrigation, outbreaks of this lawn disease can increase. As the disease progresses, individual spots may coalesce and destroy large patches of lawn.

PREVENTION/TREATMENT OPTIONS

As with all lawn fungal diseases, prevention is key, and can be much more effective than fighting the disease once it has already made its home in your yard. It's proper lawn care practices that will always promote a healthy lawn and reduce the occurrence of Dollar Spot ---

- ✓ **Mow your grass at the recommended maximum height.**
 - Ideally cut it to around 3 to 4 inches in the peak of summer as shorter height lawns will be more susceptible to this disease.
 - Ideally, try not to remove more than 1/3 of the leaf surface in any one mowing.
 - And don't mow when the grass is wet.
 - And if possible, due to how it can easily spread as mentioned earlier, bag all your grass clippings and wash your mower between cuttings with a 10% bleach solution.

- ✓ **Remove excess thatch and aerate compacted soils.**
 - Since Dollar Spot often occurs on thatched, drought-stressed lawns, power-raking and core aeration can be an effective way to control thatch and improve moisture penetration in your lawn.

- ✓ **Keep lawns well watered, but avoid irrigating in the late afternoon or evening — do *NOT* over water either.**
 - Water less frequently (once to twice a week), but when watering ideally in the early morning, water deeply... put down more water so that your lawn is sufficiently saturated.
 - If you wake to heavy dew on repeated mornings, it can help to drag the turf with a water hose to remove the precipitation.

- ✓ **Apply a slow-release fertilizer high in nitrogen.**
 - In most cases, adequate fertilization can help your grass outgrow Dollar Spot.
 - Applying liquid seaweed and chelated iron is also helpful.
 - But do not over-fertilize, since this can potentially result in an increase of other grass diseases such as Brown Patch.

- ✓ **Over-seed in the fall with resistant grass seed varieties.**

- ✓ **Promote good air circulation and light penetration** by pruning any adjacent trees, shrubs , plants, etc. which may be nearby or shading the grass and thereby increasing the humidity.

- ✓ **With severe outbreaks of Dollar Spot the following organic fungicides may be required -**
 - Bonide® Liquid Copper is a natural formulation used to protect everything from turf to vegetables, to flowers and fruits.
 - Mix 1.5 to 6 oz with 2.5 gallons of water and apply to 1,000 sq. ft.
 - For best results, start 2 weeks before problems normally occur.
 - Repeat at 7 to 10 day intervals for as long as needed.
 - Physan 20 works on a variety of disease outbreaks affecting lawns, turf and grass.
 - Add 1 Tbsp per gallon of water and spray over problem areas, repeat as needed.
 - One pint treats 6,400 square feet.

FAIRY RING

A great deal of Western European folklore and myth surrounds fairy rings. People once believed that the circle or ring of mushrooms appeared where fairies or elves had danced the night before.

However, nowadays, a fairy ring is the common term used to describe a fungal disease characterized by rings of mushrooms and/or puffballs, in combination with lush green arcs, or circular bands or rings with greener grass in their midst. Or... it could be arcs or rings or patches of necrotic or dead vegetation in established lawns, too.

There are some variations but there are normally 4 main types of fairy rings, depending upon the specific fungus at work in your lawn and the stage of its growth.

As you'll see below some will cause grass to grow more abundantly and luxuriously. Others will cause the grass to wither, dry out, and die.

Type 1 - One of the most common types is a large arc or ring of dark-green grass, with no mushrooms.



Type 2 - Contains an arc or ring of mushrooms with stimulated, actively growing dark green grass.



Type 3 - Contains only an arc or ring of mushrooms with no evidence of unusual grass growth.



Type 4 - Occasionally a fairy ring will produce a brown ring or arc of necrotic or dead grass.



Fairy Rings can be a common problem in residential lawns.

Firstly, let it be said that an abundance of mushrooms or puffballs suddenly appearing on your lawn doesn't necessarily signify fairies dancing on your lawn, nor fairy rings establishing themselves. In dryer years, the fungus simply waits under the soil for enough rain to fall... And then during periods of subsequent rain, it can make itself known, causing mushrooms or puffballs to start sprouting up all over your lawn. The good news is that most of these won't harm your grass and will disappear as moisture levels fall or return back to normal. Nonetheless, you should remove any mushrooms and puffballs as often as they appear as their only goal in life is to spread countless spores into the air seeking to build new underground mycelial infrastructure once they land and make a new home.

In fact, these mushrooms may not have anything to do with fairy rings at all. However, when you do have fairy rings, they often are, as shown above in 2 of the 4 types, surrounded by mushrooms.

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The symptoms of fairy rings can be seen at any time of the year, but they often spring up during periods of hot and dry weather.

This typically happens in unhealthy and improperly managed turf that has been cut very low regularly, and is not being periodically fed with enough fertilizer. It's also during hot and dry weather that the grass may therefore not be getting enough water or is being watered improperly. Less frequent waterings but much deeper waterings is key. Ironically, if your dry weather suddenly changes to many consecutive days of rain before returning back to dryer conditions you may suddenly see mushrooms rising up as they're sometimes a precursor indicating that a fairy ring may be in-progress.

The mushrooms are the fruiting bodies of this fungus. This fungal growth feeds on organic matter in the thatch layer of grass as it moves throughout the soil and ends up releasing nutrients, especially nitrogen, on your lawn. As a result, one type of commonly occurring fairy ring may appear in the form of lush dark green grass growing in arcs or a circular pattern. Mushrooms and/or puffballs may also grow around that circular band as a result of the fungal growth. However, the appearance of mushrooms or puffballs may not always be the precursor. Instead, as the fungus progresses, a layer of white mycelia or a band of dry, brown-orange or yellowish material may present itself in the thatch or soil layers. It grows rapidly sending many fungal strands outward, decomposing organic matter in its path.

The size of a fairy ring often ranges from several inches long to several feet in diameter. It's not at all uncommon to find large rings reaching 10 feet or more in diameter. In very large turf areas such as large acreage lawns, golf courses, parks and sports fields, some fairy rings have been seen to grow to 200 feet or more. They typically grow outward at a rate of ½ a foot to 2 feet per year depending upon grass, soil and weather conditions.

Fairy rings are not normally a serious or fatal disease in the sense that they will cause a major amount of damage to your lawn. It's more of an aesthetic issue which you might not want on your lawn if you want it to be lush everywhere and uniform in colour.

PREVENTION/TREATMENT OPTIONS

Unfortunately, there is not a "one-time/one application" magic control for fairy rings. But there are a few things you can do to minimize their appearance.

That being said, once the disease appears it is rather difficult to eliminate — If you catch it just as it starts to manifest itself, you have a better chance of eliminating it than when it has clearly made a home on your lawn or has already been there for a long time, as you see in the previous pictures.

PREVENTION IS KEY. The best way to prevent fairy rings and other turf diseases from re-emerging on your lawn is to implement organic practices which promote a healthy lawn ---

- ✓ **Keep your lawn well- watered and properly watered.**
- ✓ **Mow your lawn regularly and at the correct height.**
- ✓ **Aerate your lawn at least once a year** to improve overall drainage and moisture penetration as well as air exchange. If you haven't done a core aeration in a very long time, you can be sure your turf and its soil beneath, is rather compacted, and will be restricting moisture penetration to some degree.
- ✓ **Additionally, and directly tied in with aeration, power-rake your lawn, too,** to remove excess thatch that is the primary food source for this fungus. It's this matted thatch on top of compacted soil that prevents enough water and nutrients getting down to the grass roots.

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- ✓ **Apply fertilizer in the spring that has a higher nitrogen content in its NPK ratio.** REMEMBER: Slow-growing, nitrogen-starved lawns are more susceptible to fairy rings.
- ✓ **Additionally, it can help to occasionally top-dress your grass with a humus builder such as finished compost or well-aged manure.** This will add beneficial soil microbes... A healthier lawn isn't nearly as vulnerable as a neglected, poorly maintained, poorly-fed and poorly-watered lawn.
- ✓ **If you catch the fairy ring when it is small you may get control by digging out the soil.**
 - This is done by removing all the soil within the ring and extending outside the ring removing the soil as if it were an entire circle.
 - You'll want to be removing all the mycelial root structure that you find.
 - Add fresh topsoil and then the area can be seeded or sodded.

THE FUNGICIDE APPROACH -

If you've got a more serious fairy ring outbreak that's been left to grow and mature, you may need to apply fungicides to the affected areas to attempt to get rid of it.

Some retail products that are claimed to work well are Consan 20 and Physan 20. These products contain the active ingredient azoxystrobin which is effective against fairy rings. They are relatively cost-effective fungicides but they are not one-time-only treatments. Unfortunately, sourcing them within Canada may prove to be difficult. Canada tends to have more stringent regulations, safeguards, and controls, regarding the importation and usage of pesticides, herbicides, and fungicides than the U.S. does, where these are readily available and less regulated.

You're also going to need some patience as most fungicides, especially the ones made for commercial or agricultural applications, are very broad spectrum-based and not selective nor singularly designed for treating only fairy rings. Neither are any of them geared solely towards residential lawns. They're designed for treating numerous fungal diseases, and/or generally improving soil and plant or crop conditions so that they are healthier, and more resistant to fungal diseases. As such, the same can apply to lawns in varying degrees.

The reality is that most fungicides have not proven effective on their own for fairy rings. However, some of them in combination with other fungicides have garnered great success if applied properly and regularly. But they each have their own instructions, procedures and timing for applying them. They are not the "spray-once and problem-solved" kind of products. Sometimes it's using 2 or 3 in a specific application regimen throughout the year that facilitates effective results. This kind of effort may not be something the average homeowner is looking for... Everybody would prefer something you could spray once and problem solved, but that doesn't exist as yet.

The other challenge for the average residential user is that most of these commercially available products are only sold direct from the manufacturer or via their distributors to farmers or those with certified pesticide, herbicide, or fungicide applicator licenses. The quantities offered for sale are typically much larger than any homeowner would ever have need of or likely want to pay for, too.

Some fungicides may provide some measure of control of the fairy ring fungi, but it all depends upon the maturity and severity of your fairy ring problem. Such controls may need to be re-applied two or three times each summer for two or three years before you see ideal results.

It's important to realize that what may work well on one person's lawn may not garner the same results on someone else's. There are many variables which can affect their overall effectiveness. The least of which is of course, how healthy your lawn is to begin with. That's absolutely key.

As mentioned, unhealthy lawns are more vulnerable to fairy rings. It's a healthier turf that may respond better to treatments or be totally rid of the fairy rings sooner than a poorly managed and cared for lawn.

An example of this is how some all natural soil enhancer formulations that feed nutrients to your soil can so dramatically increase the healthiness of the soil under your lawn that younger, not so established fairy rings can be sometimes be totally eliminated with repeated nutrient treatments.

It can't be said enough that healthier lawns don't give much accommodation for fungal diseases of any kind... or if those lawns do encounter a disease, they recover faster than a struggling lawn will.

SNOW MOLD

Snow mold is a fungal disease that appears in the early spring as the snow melts.

There are two common types of snow mold: gray snow mold (a.k.a Typhula blight) and pink snow mold (a.k.a Fusarium patch).



Pink snow mold can be more severe than gray snow mold, as it can kill the crown and roots of grass. Gray snow mold usually only affects the grass blades. As the names suggest, gray snow mold shows a white-to-grayish webbing in the infected areas, while pink snow mold is grayish to pink.

In our region, it's primarily the gray snow mold that is encountered. The pink snow mold is more akin to regions where there's seldom snow accumulation but there's ongoing cool and humid weather, such as the Pacific Northwest. In those regions pink snow mold can occur year round. Pink snow mold doesn't require snow above the grass.

Most of what follows pertains to gray snow mold, a.k.a. Typhula blight ---

Gray snow mold is a cold-weather fungus primarily affecting cool-season grasses such as Kentucky bluegrass, perennial ryegrass and fescues. It can occur when there is an extended duration of heavy, deep snow cover on ground that is not completely frozen. All that weight on fragile grass blades, coupled with lots of winter moisture, not to mention ground cover from leaves, long grass, and lawn debris, can spell trouble in the form of snow mold. As such, it normally occurs particularly under leaves that had not been cleaned up the previous fall or amongst long matted-down grasses that should have been mowed at a shorter height before winter had arrived.

This is fairly common in snow belt areas with long winter months, occurring in the early spring as the snow melts. It's evidenced by patches of matted-down crusty, discoloured grass, either as bleached or scalded-looking, grayish-white or straw-colored circular patches ranging in size from a few inches to several feet across or with a whitish-pinkish web-like coating. The infected areas often overlap to form larger irregular patches.

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Essentially, snow mold appears as soon as the snow begins to melt and it may continue to thrive and spread as long as the weather is cool and damp. Usually, the discoloured spots begin to shrink as the weather becomes hot and dry.

Though the fungal spots you discover in the spring are unsightly, they are usually not very serious. As the weather warms up and the lawn continues to dry out, the infected areas will gradually green up. However, in some years given the right ongoing conditions that are cool and wet, the spots may persist through the summer and into the fall.

It's important to note that you are not likely to encounter snow mold every year, but you may notice that it's most pronounced in those springs when the first snowfalls months earlier were earlier than normal and heavy enough to cover your lawn and the ground beneath it, that wasn't yet fully frozen.

When additional snowfalls continued to fall, the warm ground beneath the snow was actively harboring fungal growth, and then come the spring thaw, snow mold has appeared. A cold winter without much snowfall is less likely to produce snow mold damage in the spring.

PREVENTION/TREATMENT OPTIONS

The key to beating snow mold is prevention, as there are no single application fungicide treatments that work on snow mold in the spring when the snow melts.

- ✓ **To help your grass dry out, rake the damaged spots gently to aerate the grass blades.**
- ✓ **Remove any thatch layer that is more than ½ to ¾ inch thick.**
 - This can be done in the fall or the spring.
 - However, if you're dethatching or power-raking in the spring, this should not be done until the lawn has dried out a bit and has been mowed at least 2 or 3 times, thereby having given a chance for any new grass shoots to first take root in the spring.
- ✓ **Mow the lawn at a shorter height until the mold is no longer actively growing.**
 - Taller grass will hold more moisture, which fosters fungal growth.
 - Especially in the late fall, be sure to mow your grass at 1.5" to 2" height to minimize the moisture that might be subsequently trapped under the first snowfall of the season.
 - However, don't cut it too short that you end of scalping your lawn which would invite other problems.
 - Bagging up all grass clippings for the last few mowings in the Fall will also help.
- ✓ **Don't let your leaves pile up on your lawn.**
 - Use your mower to mulch up any leaves on your lawn and bag them to remove them.
 - If you've got far too many leaves to mow or mulch, be sure to rake up all leaves in the fall, which will reduce any moisture that would otherwise get trapped under the leaves covering the grass.
- ✓ **"IF" you have habitual problems with snow mold, consider reducing the amount of nitrogen in your NPK ratios in the fall fertilizer you apply.**
- ✓ **Avoid heaping large piles of snow along walkways and driveways thereby creating large snowbanks... and likewise the same for large wind-blown snow drifts.**
 - Spreading out the snow evenly on your lawn, especially once it's starting to warm and melt, will help it melt more quickly in the spring rather than holding moisture during the prime fungal growth periods.
 - Also try to prevent snow compaction, restrict the amount of walking on the turf in the winter months.

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✓ **If the damage is severe, overseeding the bare spots in the late spring may help.**

- In spite of your best efforts, dead, dying, or discoloured grass may never recover its healthy appearance so reseeding to repair those areas may be the best approach.
- Remember not to fertilize or mow these seeded spots until the new grass is vigorously growing and has matured sufficiently.

* Avoid using fungicides if possible, but if your lawn infections tend to be severe or an annual nuisance, you can apply a preventive spray of thiophanate-methyl in late fall after your last mowing, just before the first expected snowfall. This can help.

ASCOCHYTA TURF LEAF BLIGHT

Ascochyta Leaf Blight is a common lawn disease that occurs in the late spring to early summer. It's caused by an infection by the fungal pathogen *Ascochyta* Spp.



Ascochyta Leaf Blight can sometimes be confused with heat stress, Dollar Spot, or fertilizer burn. Many grasses are susceptible, but especially Kentucky bluegrass, tall fescue and perennial ryegrass.

This disease is most common when the weather has quickly changed from very hot and dry or drought conditions to very wet and cool, or the other way around. Excessive rainfall or over-watering and poor irrigation habits can also worsen this disease. The disease most often affects turf that is already stressed.

Ascochyta Leaf Blight comes on quickly, sometimes seemingly overnight. Its symptoms appear as large irregular patches of turf that rapidly turn a bleached-light brown to straw-colour and appear to be dead. From a distance these straw-coloured patches resemble drought stress. Infection occurs through the cut or mowed end of the grass blades as can be seen above.

Normally, healthy grass blades are interspersed with infected ones. The blades will appear bleached from the tip to about 1/3 of the way down and you may see some white banding in the green sections. The infected grass blades also appear to be sucked in from the tip down.

If you take a close look at the infected grass with a magnifying glass, look for very small yellow to dark brown, flask-shaped fruiting bodies scattered on the discoloured grass blades. If you find them, there's no need to panic.

If conditions remain favourable, this type of disease can, indeed, persist for weeks but while this disease looks very serious when outbreaks are widespread, it is actually relatively harmless. It will not cause any permanent injury to the lawn since the fungus doesn't attack the crowns or roots.

Ascochyta can live on dead grass tips in the thatch layer of the lawn, and spores can spread when they are disturbed by lawn mowing or even the splashing of water due to rain or irrigation. So be mindful that this disease can spread very fast by foot traffic, rain, as well as lawn mowing. A lawn mower can pick up the fungus and spread the disease throughout the lawn, potentially even creating a stripe-like pattern of the disease on the lawn.

PREVENTION/TREATMENT OPTIONS

Fungicides are generally ineffective in controlling this disease and therefore NOT recommended.

The following good turf management practices are the best prevention as well as aid in your lawn recovery if it has been infected with Ascochyta:

- ✓ **Watering properly is key to controlling Ascochyta Leaf Blight.**
 - Provide deep infrequent irrigation, meaning... once a week give it a really good watering perhaps for 1 to 1½ hours which equates to about 1 inch to 1½ inches of water per week
 - The key is less frequent but deeper waterings.
 - Grass that is watered deeply promotes stronger and deeper root growth, which results in healthier grass overall.
 - It's always best to irrigate or water your lawn in the early morning hours.
 - However, don't overwater it to the point that you have standing water and soggy soil hours later... Allow the surface of the lawn to dry out between your waterings.
 - Overwatering or watering late in the day can cause the lawn to stay wet during the night which can make it more prone to other fungal diseases.
 - Watering in the morning allows your grass to dry in the heat of the day and actively uptake the water while it is growing.

- ✓ **It's important to de-thatch (power-rake) and aerate your lawn at least once each year in the spring or fall to increase water infiltration and reduce hiding spots for fungal spores.**
 - You don't want to allow the turf to go into drought/moisture stress during the growing season
 - Aeration will reduce soil compaction and allow oxygen, water and nutrients to move deeper into the soil, encouraging deeper and stronger grass roots... This results in a healthier lawn better able to resist disease.

- ✓ **Fertilize periodically with a balanced fertilizer to help stimulate growth of the grass but don't over-fertilize.**
 - Do not apply fertilizer or synthetic pesticides to the blight affected area.
 - This will stress the grass further and kill off beneficial soil bacteria.

- ✓ **Mow on a regular schedule and properly.**
 - However, do not mow in the morning while your grass is still wet from the dew or the previous night's watering (though you shouldn't be watering in the evening).
 - This will spread the disease further.
 - Mow the lawn once the surface moisture has evaporated.
 - Maintain your lawn at 2½ to 3½ inches in height.
 - The faster the grass is growing, the faster the disease will potentially get grown out of the lawn on its own.
 - Lawns that are slightly longer will also help discourage weeds and browning.
 - Ideally, mow frequently enough so that only 1/3 of the leaf blade is removed each time.
 - Also be mindful that if you wait too long and then cut it quite low, this will stress your lawn, and it can potentially go into a state of shock, making the lawn more disease susceptible.

- Also, avoid mowing during wet weather.
 - Freshly mowed grass typically needs a day to repair the cut.
 - If the grass is wet, disease can easily enter the blades along with the water that enters the wound.
- Further to the above, make sure your mower blade is always sharp.
 - A dull mower will cause damage to grass blades.
 - The shredded grass blade does not heal well and is easily infected by disease.
 - It may turn brown and appear rather unhealthy.
 - Over-cutting of lawns can exacerbate Ascochyta Leaf Blight by giving it more open cuts and thereby making it more susceptible to infection.
 - But reducing mowing frequency will give grass more time to heal between mowings, reducing the opportunities for pathogens to enter the blades.
- Also, be sure to bag any grass clippings to prevent any further fungal spread.

Given that Ascochyta rarely affects the roots nor kills the grass, it's likely to resolve itself and go away on its own within a few weeks. Once weather conditions improve and you've employed the above proactive measures, you'll be able to mow off the damaged part of the grass blades and the lawn should recover.

LEAF SPOT & MELTING OUT

This fungal disease isn't as common as most others but it can be more serious in the damage it can cause. We rarely come across it in our area. Leaf spot initially resembles drought or insect damage, and it can sometimes be difficult to tell the difference. This can pose a potential problem, though, because while watering a lawn damaged by drought conditions can improve its health, watering a lawn with leaf spot (or suddenly incurring a lot of rainfall) can actually encourage the disease to spread.



Leaf Spot and its second phase in the progression of the fungal disease, known as Melting Out, are two lawn diseases that usually occur together and have similar symptoms.

Kentucky bluegrass, perennial ryegrass, and tall fescue are the most susceptible to Leaf Spot and Melting Out. Fine Fescue, Creeping Bentgrass, Annual Bluegrass, Colonial Bent, Bermudagrass and Zoysiagrass are also vulnerable to Leaf Spot and Melting Out.

In our region here, Leaf Spot is a warm-weather disease, but the pathogen overwinters as dormant mycelium in infected plants and dead grass debris. Leaf spot can become evident when temperatures reach 70° F (21° C). The disease is most severe when temperatures are above 90° F (32° C) and humidity is high. Conditions of drought stress followed by lots of rain will intensify the disease.

It should be noted that Leaf Spot is not a fungal disease that will simply "go away" over time as many other fungal diseases can come and go. It's a fungal disease you definitely will want to control in its early stages. With proper care, this lawn disease isn't likely to destroy your lawn as long as you confront the disease before it reaches the roots of the grass blades. In its early stages the disease is quite treatable.

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However, if it is not controlled quickly, and it's already in its "melting out" phase, it can do significant damage and even destroy lawns.

Here are some of the key identifying signs that your grass may be suffering from Leaf Spot and Melting Out. These are progressive signs and as the fungus increases its infection, the "Melting Out" disease takes over:

- ◆ General symptoms are spotted or wilted grass typically occurring during the months of May, June, July, August, and September.
- From a distance, infected turf will appear as diffused areas of tan, off-color grass.
- But more specifically, the grass blades will develop small, dark brown or black spots or lesions.
- As the diseases progress, the lesions enlarge and develop light tan centers with dark brown or dark purplish-red borders.
- In warmer temperatures (> 85° F / > 29° C), the leaf tissue surrounding the enlarged spots begins to yellow, and the entire blade often appears dry and straw colored.
- The disease is mostly confined to the leaf blades during the cool weather, but as the melting-out disease progresses, the fungus can infect the leaf sheaths, crowns and roots during hot, humid weather.
- Leaf tissues, such as the leaf sheaths, crowns, rhizomes, and stolons, begin to rot and turn reddish-brown. This phase often results in dead grass.

COMMON CAUSES

- These diseases are most active during cool, wet weather in spring as well as in warm, wet conditions in summer.
- Extended periods of wetness wherein the lawn is just not being able to get sufficiently dry
- Related to the above, watering the lawn in the evenings, which is NEVER a good idea
- And what might seem as the opposite of the above... drought stress
- Frequent and shallow watering or irrigation
- Excessive nitrogen fertilizer applied in spring
- Thick thatch layer within your lawn
- Low mowing height
- Too much shade and not enough sunlight
- Poor air circulation

PREVENTION/TREATMENT OPTIONS

To get rid of this combo of diseases, you need to implement some control measures as soon as you see symptoms appearing. If you're too late to identify them, the "melting out" may progress to the roots and crowns of your grass and then it may be too late to effectively control it.

The following good turf management practices are the best prevention for lawns infected with Leaf Spot and Melting Out:

- ✓ **It's okay to fertilize periodically with a balanced fertilizer to help stimulate growth of the grass but don't over-fertilize or use one that has excessive nitrogen in its NPK ratio.**
 - If your lawn has been identified as having this fungi, then it's better to apply fertilizer in the fall.
 - Yards that have received too much fertilizer in the the spring are more susceptible to this combo of fungal diseases.
- ✓ **Maintain proper watering or irrigation practices that don't encourage prolonged leaf wetness.**
 - Watering too often and for short periods of time encourages leaf wetness.
 - Provide deep infrequent irrigation, meaning... once a week give it a really good watering perhaps for 1 to 1½ hours which equates to about 1 inch to 1½ inches of water per week

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- The key is less frequent but deeper waterings for a longer period of time.
 - Grass that is watered deeply promotes stronger and deeper root growth, which results in healthier grass overall.
 - However, don't overwater it to the point that you have standing water and soggy soil hours later...
 - Allow the surface of the lawn to dry out between your waterings.
 - It's always best to irrigate or water your lawn in the early morning hours before 10 am.
 - This allows your grass to dry in the heat of the day and actively uptake the water while it is growing.
 - Overwatering or watering late in the day can cause the lawn to stay wet during the night which can make it more prone to other fungal diseases as well.
- ✓ **It's important to de-thatch (power-rake) and aerate your lawn at least once each year in the spring or fall to increase water infiltration and reduce hiding spots for the fungus.**
- Remove thatch that exceeds a 1/2" thick layer.
 - A thin thatch layer is good for the lawn, but a thick layer is attractive to fungi.
 - Dethatching and aeration will reduce soil compaction and allow oxygen, water and nutrients to move deeper into the soil, encouraging deeper and stronger grass roots... It will also promote water drainage during rainy conditions.
- ✓ **Mow on a regular schedule and properly.**
- Do not mow in the morning while your grass is still wet from the dew or the previous night's watering (though you shouldn't be watering in the evening).
 - This will likely spread the disease further.
 - Mow the lawn once the surface moisture has evaporated.
 - Also, avoid mowing during wet weather.
 - Freshly mowed grass typically needs a day to repair the cut.
 - If the grass is wet, disease can easily enter the blades along with the water that enters the wound.
 - Further to the above, make sure your mower blade is always sharp.
 - A dull mower will cause damage to grass blades.
 - The shredded grass blade does not heal well and is easily infected by disease.
 - Avoid scalping your lawn by mowing too low... Maintain your lawn at 2½ to 3½ inches in height.
 - Ideally, mow frequently enough so that only 1/3 of the leaf blade is removed each time.
 - Mowing the lawn too short, stresses the grass and exposes its crowns and roots to potential infection.
 - Grass that is slightly longer will also help discourage weeds and browning.
 - Further to the above, be mindful that if you wait too long and then cut it quite low, this will stress your lawn, and it can potentially go into a state of shock, making the lawn more disease susceptible.
 - Also, be sure to bag any grass clippings to prevent any further fungal spread.
- ✓ **Apply fungicides at the first signs of leaf spot.**
- NOTE: The secret to keeping fungal diseases out of your lawn isn't necessarily fungicide — Good lawn care is always the best prevention. Fungicides can certainly help, but they shouldn't be the only method you rely on. Fungicides might combat diseases, but they do not build your lawn's strength and resilience. It's only good lawn maintenance that can improve your lawn's health, and the healthier your grass is, the less susceptible it will be to disease.
 - Both contact and systemic fungicides can be used to manage leaf spot.
 - However, application timing is crucial... They are only effective when applied to infected lawns at the onset of early disease symptoms.
 - If a fungicide is applied during the subsequent "melting out" stage, it will have little to no effect.
 - However, fungicides may help prevent leaf spot from spreading to other areas of the lawn.

- Ideally, fungicides should be applied in the early spring as soon as you see any signs of the disease appearing.
 - Contact fungicides like chlorothalonil and maneb, must be applied every 7-10 days to be effective.
 - Systemic fungicides like iprodione and the QoI's, can be applied on 14-21 day schedules.
 - Fungicides containing mancozeb, fludioxonil, azoxystrobin, myclobutanil, penthiopyrad may also provide good leaf spot control.
 - Be aware that some fungicides that may be available in the U.S. may not be available within Canada.
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***** These aren't all the possible lawn fungal diseases you might ever encounter, but they are some of the most common. As you've likely noticed in reading this, the prevention and treatment options have a lot in common. The key always is proper lawn care maintenance and practices.**

***** SPECIAL NOTE *****

We love helping our clients have great-looking lawns! Of course, we always welcome your inquiries, but we also want to help educate you, too. So many of you have told us how much you appreciate the articles we make available to you.

If there are any questions you may have about your lawn or any challenges or problems you may occasionally encounter with your lawn, don't hesitate to give us a call. As with the above info article you've just read, we also have other highly beneficial lawn care articles, too...

Here are some we've created to support you with your lawn care efforts. They can help you identify any problems as well as offer some possible solutions for some of those occasional challenges lawns can encounter.

These info articles are not meant to be one-time definitive cures for whatever might ail your lawn. We all wish it was only that simple... But, there are no magic "spray this once and your lawn will be perfect thereafter" solutions... Unfortunately, those don't really exist, as much as we might all like them to. However, there are many things you can do to get your lawn in great shape and keep it that way. We encourage you to glean what you can from any of the following articles that may interest you. And for what you're not sure about, give us a call, let's talk about it, and we'll do what we can to help you.

You may reach us at 780-678-6450 if you'd like to receive any of these via email. It would be our pleasure to do our part to help you "make your lawn the envy of your neighbours"...

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7 Steps To A Great Lawn
Caring For Our Lawn Over The Winter
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Common Lawn Fungal Diseases (Compendium Of All Common Ones)
Common Lawn Fungal Diseases_The Usual Causes
Common Lawn Fungal Diseases_Snow Mold
Common Lawn Fungal Diseases_Leaf Spot & Melting Out
Common Lawn Fungal Diseases_Ascochyta Turf Leaf Blight
Common Lawn Fungal Diseases_Brown Patch
Common Lawn Fungal Diseases_Summer Patch
Common Lawn Fungal Diseases_Pythium Blight
Common Lawn Fungal Diseases_Red Thread
Common Lawn Fungal Diseases_Rust Diseases
Common Lawn Fungal Diseases_Powdery Mildew
Common Lawn Fungal Diseases_Dollar Spot
Common Lawn Fungal Diseases_Fairy Ring

INFORMATION ON OUR FIVE PRIMARY LAWN CARE SERVICES —

FERTILIZER & WEED CONTROL:

Our Fertilization & Weed Control Program
Possible Reasons For Still Having Weeds
Ten Reasons Our Program is Different

...See more on next page...

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ENRICH SOIL ENHANCER:

Our Enrich Soil Enhancer Program

Different Soil Types Have Different pH Levels

WEEKLY MOWING:

How The Weekly Lawn Mowing Works

Our Quality Control Program

Ten Reasons We Are Different

CORE AERATION:

Why Aerate Your Lawn?

POWER RAKING:

Why Power-Rake Your Lawn?

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