

Late Fall Lawn Care Essentials

Cold weather signals the start of “winterization” around the home. Homeowners close their pools, clean up perennial and vegetable beds, and winterize their cars but rarely think about preparing their lawns for the winter's chill. Here is an overview of the most important things you can do to ensure a beautiful and healthy lawn next spring.



Why fall fertilization is best

There's a good deal of science behind the recommendation for late fall fertilization and to understand it we need to consider the way grass grows.

Grass has two major periods of root and shoot growth. These occur during the spring and to a lesser extent in the fall. This is the reason most of our lawn grasses are called “cool season” grasses. By Labor Day, temperatures will have cooled, and the grass will be ready to repair summer damage. At this point, reserves from the Memorial Day feeding will be dwindling. You may realize this and understand the necessity of the Labor Day feeding.

What you may not know is that the success of your late fall fertilization is highly influenced by early fall fertilization. The late fall fertilization will be much less effective if the grass is already yellow and hungry from missing out on the early fall fertilization. The reason for this is that you need to have chlorophyll reserves pumped up in order to have maximum carbohydrate storage that occurs as a result of late fall fertilization. The rationale for late fall fertilization is simple: root growth is optimal when soil temps are 50-60°F. Shoot growth is optimal at 60-75°F. Shoot growth stops when air temperatures are 45-50°F.

Timing is everything

What you are aiming for is that critical point when shoot growth has stopped due to temperature drop but root growth is still going due to favorable soil temperatures. You DO NOT want shoots to still be actively growing when you fertilize, because then fertilizer is shunted to top growth and you'll risk winter injury. But you also don't want the shoots to be completely brown because then there is no photosynthesis and your fertilizer can't be used towards helping the plant make and store carbohydrates for root use.

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Here's a recommendation from the turf experts at Cornell University: Look for 7-10 days of daytime temperatures that are consistently below 50°F with night temperatures around 30°F, then put out your late fall fertilization.

Better late than early

It is always better to apply too late than too early but applying fertilizer to frozen soil CAN result in runoff. Occasionally grass becomes chlorotic between early and late fall fertilizations due to a prolonged Indian summer. If this occurs, apply 0.5lb nitrogen/1000 square feet as a “snack” that won't “over-fatten” shoots. By properly doing your late fall fertilization, you'll have more uniformity of cover the following spring which will reduce weeds. You will also see less leaf spot damage in the spring. You'll have enhanced rooting and color both in the fall and the following spring through sufficient food reserves to maximize photosynthesis.

One of the reasons that you get the maximum carbohydrate storage for the entire year after a late fall fertilization is because the plant can photosynthesize without going through the energy consuming process of photorespiration. Fifteen percent or more of the energy produced this time of year goes to roots, which will continue to grow until the ground actually freezes.

In contrast, during mid-summer and early fall, only 0.5-0.3% of energy produced by shoots will be allocated to the roots due to the demands of summer stress and fall shoot growth. This is why it is absolutely critical that you don't put down too much nitrogen during spring and early fall feedings since that 0.5-0.3% will be reduced even further as reserves are shifted to support shoot growth.

Choose the right fertilizer

Don't use IBDU or sulfur coated urea for your late fall fertilization because they may not provide enough nitrogen to maximize the interaction of fertilizer with photosynthesis and carbohydrate storage. If you must use sulfur-coated urea, you should apply it two weeks prior to the late fall fertilization date you would normally use.

Likewise, if you are restricted to a 100% slow release product that is dependent on microbial activity, apply it 3-4 weeks before your normal late fall target date because you will need the extra time and warmth in the soil for these products to deliver utilizable nutrients to your turf. If you must use IBDU, apply it 4-5 weeks prior to your target date and be aware that it will be at least 3-4 weeks before you see a visual response unless you incorporate your applications through core aeration or other means. Sulfur coated urea products may occasionally result in a leopard spotted appearance on nitrogen sensitive turf due to the nature of the granules and the different thickness of their coatings.

Fertilizers high in phosphorous do not “winterize” your turf. Grass uses about 60% of all the phosphorous it will use in its entire lifetime in the first six weeks of growth, so phosphorous on mature turf is redundant.

Adjusting the pH is important

Late fall clean up is also ideal to get your pH ship-shape for spring. Take several random soil sub samples from an area and mix them together to be tested. Samples



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should come from below the top four inches of soil and turf. If lime is required, remember that all lime is not created equal: Look on the label for the ENV, or the effective neutralizing value. Now divide 100 by this number. The result is the amount of lime needed to provide one unit of 100% effective neutralizing value, which gives you the true measure of how much it will cost to get the right amount to reach the pH you want. This can save you money!

Don't forget to winterize your soil

Aeration is the process of introducing air into the soil by disrupting the soil in some manner. Aeration is best suited for fall due to lack of overly wet soil, less exposure of turf-competitive weed seeds, the ability of actively growing roots to repair themselves, and the upcoming cycles of freezing and thawing to enhance the effects of aeration. There are many kinds of aeration, here are the most popular:

- ❖ Spiking, which basically is like poking a pitchfork into the turf and rocking it around, is very short lived but provides the least amount of surface disruption.
- ❖ Solid tine aeration provides the same effect as poking a hole into uncooked bread dough with your finger.
- ❖ Hollow tine aeration actually pops a plug of soil out of the turf. This is the best kind of aeration.
- ❖ Deep tine aeration promotes deep watering and active root growth by pushing in and moving around tines to a depth greater than the standard four inches. This last type requires special equipment usually not available to the homeowner.

Turf takes about two weeks to recover from aeration, which is another reason to do it in the fall since our yards are not as actively used during this season.

Technically you should aerate in the spring and in the fall but the spring aeration may turn up the seeds of summer annual weeds, which take advantage of the light and colonize the aeration holes, particularly when plugs are crumbled and dragged back in to fill the empty holes.

Topdressing and aeration go hand in hand

The best aeration methods remove soil when making the holes allowing the holes to collapse, thereby providing further aeration. Follow your aeration with a topdressing of 1/4-1/8 inch of compost and you will, over time, begin to amend the soil by incorporating fine amounts of organic matter which will change the soil structure and allow the aerated areas to remain decompacted longer.

Aeration will have a maximum positive impact with tine spacing no more than 2" apart meaning you should have at least 10-12 holes per sq.ft or 1 hole every 4". You can rent core aerators from equipment rental establishments and high traffic areas can be core aerated as many as 6-8 times/year. If you should decide you want to crumble the plugs and drag them back into the aeration holes, a drag mat can be made from indoor/outdoor Astroturf door mat with the knap facing the ground. Attach the drag mat to a riding mower and you'll get the cores crumbled without abrading the living portion of the turf. Alternatively, a section of chain link fence can be dragged in the same way although this is more abrasive against sensitive grass crowns and may lead to leaf spot on stressed turf.

If your soil is extremely compacted, a suggested scheme might be heavy aeration in spring prior to fertilization, light aeration in late summer or early fall prior to fertilization, and a heavy aeration after the season is over. Pull cores off on the last aeration so holes remain open for freeze thaw activity over the winter. You can use the quarter inch compost top

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dressing 4 or more times each year, but never jump the topdressing up to ½", even in the winter, or you'll get yellowing and turf density loss which means weeds in the spring.

Compost is the best topdressing because compost can increase the infiltration of clay soils by as much as ten fold in some cases when used consistently over time. This can reduce the incidence of winter damage by preventing ice sheets from forming in areas of poor drainage. Compost can also interfere with the growth of damaging winter diseases such as snow molds as well as providing a light boost of nutrients in the spring.

Overseeding tips

Overseeding during the late fall, winter and early spring is called dormant seeding. Dormant seeding or sodding can be done even late in the fall so long as proper care and spring after care are provided.



In fact, high use areas are best repaired at the end of the season due to the ability of weeds to out compete seed in the spring. However if the area is prone to erosion from wind or winter, don't dormant seed. If you are dormant spot seeding, scratch up the soil with a rake for better seed to soil contact. Use caution when dormant seeding with perennial ryegrass because it is more likely to suffer cold injury. Dormant seedings in late fall in areas of heavy rainfall or poor drainage may have germination reduced by seed rot.

Honeycomb seeding is an effective way of prolonging the seeding season. Scratch up the soil with a flexible tine rake. Scatter starter fertilizer at a rate of 1 pound per 1000 square feet. Divide seed into 3-4 lots, and sow on 3-4 different days. Honeycomb seed should be put out early in the morning when soil is still frozen but expected to thaw mid-day. Cracking and moisture embeds seed in the soil.

After care for dormant seeded areas includes putting starter fertilizer down again in **SPRING** shortly after the dormant seedlings begin to actively grow. You should then start light frequent irrigation for seedlings less than 1.5 inches as soon as soil temperatures are above 55 degrees F in dormant seeded areas.

A word of caution when overseeding: If you are planning to overseed areas in the spring you should be extremely cautious about the use of herbicides. Many can persist until spring and interfere with the germination of grass seed put out months after the initial herbicide application.

Sod can be laid down in late fall, but you should water and scatter starter fertilizer prior to placing the sod and then water several times throughout the winter to reduce winter desiccation since the sod will not root down properly until spring. You should fertilize again with starter fertilizer as soon as the sod greens up in the spring.

Preventing disease

There are no insects that will bother your turf in the late fall but there are a variety of diseases that will. **Pink snow mold** and **fusarium patch** are two different diseases caused by the same organism at different temperatures. The patch form occurs at temperatures of 55-60°F, causing 6" water soaked patches with mushy centers. When it is colder, the pink snow mold form takes over and the patches tend to get a pink ring around the outer edge. The problem

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is worse when snow covers over unfrozen ground, and there may be huge patches of collapsed turf below.

To PREVENT these diseases, you need to apply a persistent fungicide before the first snowfall. Another excellent cultural control for these diseases is to cut turf very low at the last mowing. Since the disease needs high humidity and leaf wetness to spread effectively, mowing very low at a time when the turf is dormant can help to reduce the conditions conducive to disease.

Another thing would be to make sure the grass has no excess nitrogen going into dormancy so there is no juicy grass for the diseases to take advantage of. Make sure your potassium levels are up to snuff and scrape snow drifts off affected areas. The disease doesn't kill, but recovery is very slow. Outbreaks are also linked to a high pH in the upper soil surface following liming so time your liming wisely. Rye grass is the worst affected. Rake out wet areas in spring to enhance recovery.

You will know if the fungus is active because the edge of the patch is water soaked if it is still going and if it is straw colored it is not active any more. You can tell pink snow mold from gray snow mold by looking for embedded black dots characteristic of gray snow mold. Pink snow mold is also worst on grass with water stress, and in full sun. Removing dew, thinning trees to boost air circulation and improving drainage all help to reduce disease.

Gray Snow Mold (Typhula Blight) will not occur without snow cover. You can't treat this disease in spring since the resting fungal structures are already in the turf by spring. Gray snow mold only kills leaves, but looks terrible. High nitrogen before dormancy makes the disease worse so in areas that are hit by the disease try a slower release product for your late fall fertilization. Tall fescue may get the disease worst. A preventative fungicide prior to the first snowfall is the only way to prevent the disease all together.

Leaf spots are ubiquitous in the late fall due to frequent wetting and drying cycles. Kentucky bluegrass is particularly susceptible during overcast weather or when growth is succulent as it would be if you fertilized during mid fall. Leaf spot appears first on shaded grass, and may be more severe in areas that are habitually mowed too low or are subjected to light, frequent irrigation or irrigation delivered in the late afternoon. Only contact fungicides are effective.

Red Thread is a cosmetic disease that is obvious on the leaves of bluegrasses, fescues, and particularly rye. Red thread is very prevalent during cool, wet weather. You will see red or pink strands near leaf tips, and a fuzzy pink mass on dead leaves. Infected leaves may turn straw colored but this disease usually doesn't kill the grass. Organic fertilizers may reduce severity.

Rust is a very common disease in late fall and will be readily visible on bluegrasses, rye, and zoysia on which it can be quite serious. It is common after cool, wet weather and fog. You'll see foliar yellow and orange lesions, and huge clouds of spores. The grass won't die but unfortunately newly established seedlings may be weakened so much that they succumb to other diseases.

Make sure you do a follow up fertilization a few weeks after germination or in the case of dormant seeded grass as soon as green up occurs in spring. Mowing frequently and increasing air circulation will help reduce rust as well as making sure soil remains moist even after the irrigation has been turned off for the season in the late fall. Dry spells at this time can promote rust.

Powdery mildew, which causes yellowing, curling, and wilting of grass blades can debilitate plants but does not kill them unless it is in combination with other pathogens or stress. Low light, dull and overcast weather, grass under trees, in shadows, or in building dead spaces are all predisposing factors for powdery

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