

Lawn Care

REG. U. S. PAT. OFF.

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TURF INJURY FROM EXCESS MOISTURE

IN SOME sections of the country the appearance of grass during the summer has been disappointing in spite of an abundance of rainfall. Much turf has shown signs of damage because of too much water.

An excess of moisture is not in itself unfavorable if the soil is well drained. Many lawns have poor surface or sub-surface drainage, sometimes both. If the subsoil is hard and impervious moisture is trapped in the ground. Unless tile drainage is installed a soggy condition results. If the soil tends toward a clay it becomes puddled and when it does dry out it bakes hard and cracks open. Alternate wetting and drying is good for a soil because it tends to keep it mellow but standing water is harmful. A saturated soil forces out all the air so grass roots cannot get the oxygen they must have to live.

Water stands on some lawns because they do not have natural surface drainage which permits excessive rainfall to run off every part of the lawn within a few minutes. The ideal natural fall is from six to twelve inches in 100 feet.

The first noticeable effect of too much moisture is a yellowing of the grass. This occurs when the grass is drowning because the roots are not getting air. If the water does not evaporate or finally seep away the grass will be killed.

If a soil is saturated very often from rain or even from artificial watering it is not long until the deeper roots are drowned and the grass is left with only a shallow root system. These roots dry out quickly during a hot spell, thereby producing the paradox of a turf in an over-watered soil dying because of a lack of moisture.

The greatest damage from poor drainage does not come from drowning but from a general soft lush growth of grass which makes it more susceptible to destruction from other causes. A few of the indirect effects from this will be discussed here.

Leaf Spot

The appearance of a fungus disease known as Leaf Spot was one of the first difficulties to be reported after the wet spring experienced in most sections of the country this year. These spots make their appearance as tiny brown specks scattered over the blades. As they enlarge they may extend right across the leaf with the center becoming straw colored. The bordering area varies in color from dark brown to black. Sometimes the grass plant dies when the causal fungus infects the stem and root and develops foot rot. In that case the whole plant turns brown and dies. The disease was at its height this year during the cooler weather of late spring.

While an attack of Leaf Spot is not attributable to excess soil moisture, that is apt to aggravate the damage. The best way to combat the disease is to follow cultural practices that will induce a strong growth of grass. At times fertilization to stimulate greater growth is necessary. Higher clipping is also advisable because that means a stronger plant.

Damping-Off

When seedling turf is spotted with dead patches varying in diameter from one inch to several inches it is likely that damping-off has occurred. Sometimes this fungus disease kills the sprouts before they emerge from the ground, making it appear that the seed failed to germinate. At other times the disease comes after the grass is well started. The young grass turns black at first and then withers and turns brown.

Although it is not mentioned so often as the cause of seedling failures, it is probable that Damping-Off causes more injury than people suspect. It is often responsible for a spotted growth of young grass where parts of the lawn have a good stand while some patches show no grass at all.

The growth of Damping-Off is favored by an ample supply of water near the surface of the ground and an over supply of fertilizer. After an attack there is nothing to do but let it spend itself and then repair the damage by reseeding.

Mildew

At times a nice stand of grass suddenly appears to have been dusted with flour. This is caused by powdery mildew, which resembles the mold that grows on old shoes left in damp places. If the mildew is wiped off the surface, it will usually be found that the grass blade is green and not injured. Fortunately mildew causes little real injury and soon disappears.

Scum

It is not uncommon to find a green scum on wet lawn soils. This is a growth of algae which in itself is generally harmless. If conditions are favorable for it, the algae may make such growth as to form a tough parchment like coating over the ground which grass shoots cannot penetrate. In such cases the scum should be loosened by a severe raking and the area then top-dressed with sand or a sandy loam. The formation of scum can usually be checked by spraying with Corrosive Sublimate at the rate of one ounce to the 1000 square feet.

Slime Mold

There are many different species of slime molds, all of which produce different types of spore-forming masses. Certain species appear as small capsule-like spore masses growing upright from the surface of the leaves. They are steel gray in color, later changing to black. If a large patch of grass is affected it has the appearance of having been dusted with soot.

Sometimes the mold appears as thin, white, yellow or gray layers of a slimy paste-like substance that covers the grass blades. These layers soon change shape to build up a mass of gray or yellowish gray spores. These molds occur most commonly on soils abundantly supplied with organic matter and during warm, wet weather.

Although slime molds may cover patches of turf completely they seldom cause injury. After the spores mature, which takes about two days, they can be washed or pulled off by hand.

Toadstools

Toadstools and even edible mushrooms have sprouted in a lot of lawns this year. These develop because of an excess of decaying organic matter. They often sprout from old tree stumps that have been buried in building the lawn.

Sometimes the regular mowing will eliminate these pests. If not the soil around the infested spots should be forked to permit penetration of a solution of Corrosive Sublimate (3 ounces in 50 gallons of water). This should soak in to a depth of three or four inches. If this fails another possibility is to remove the soil to a depth of five or six inches, replace with fresh soil and reseed.

Brown Patch

The fungus disease Brown Patch causes much grass to turn brown during the summer months. This fungus (*Rhizoctonia solani*) is present in soils and on vegetation everywhere but it is usually inactive.

Attacks of Brown Patch usually come during periods of hot humid weather when grass is in a weakened condition and is more susceptible.

This fungus enters the grass leaf through a pore and then grows through and between the cells which make up the tissue. As the fungus spreads through the plant it absorbs food from the cells, thereby causing them to break down and the leaf to shrivel and turn brown. As the fungi are very sensitive to drying out or to strong sunlight they are most active at night. At times they work very rapidly so that large areas of turf will seem to have been affected almost overnight.

A peculiarity of this disease is that the attack is usually in definite patches which are roughly circular in outline. Part of the grass within the circle usually escapes injury. Unless the disease is very severe and long lasting, the roots are not injured but only the top growth.

Grass in sections where there is not a good movement of air is also susceptible to Brown Patch since stagnant air is favorable to development of the fungus. That is why Brown Patch is more apt to affect lawns that are surrounded by a dense growth of trees or shrubs, or in sunken gardens or similar places. The disease is worse in lawns that are over-fertilized or where the soil is very acid.

Brown Patch can be prevented in many cases by remedying the factors responsible. If this is done and the disease is still troublesome it can be controlled by applications of mercurial fungicides. There are many of these on the market sold under such brand names as Calo-Clor, Semesan, Nu-Green, Curex and Pfizer's Mixture, which should be used according to the manufacturer's directions. If no commercial preparation is available any druggist can quickly prepare one by making

a mixture of two parts calomel and one part Corrosive Sublimate. This should be applied at the rate of two or three ounces per 1000 square feet as a spray or mixed with soil.

If attacks are numerous, they may be held off by regular preventive treatments of fungicides to be made at ten day intervals during periods of hot, humid weather. Where turf is attacked only occasionally it is hardly worth while to attempt to control the disease. Ordinarily the disease will soon spend itself, after which the damaged spots can be repaired.

Dollarspot

Another fungus disease closely related to Brown Patch is known as Dollarspot. The most noticeable difference is in the size of the injured spots. In the case of Dollarspot these are usually limited to a diameter of two inches. The affected turf presents a moth-eaten appearance and the leaves are more bleached than after an attack of Brown Patch.

The Dollarspot fungus is active at lower temperatures than Brown Patch, and so appears earlier in the spring and later in the fall. It is more likely to attack roots and stems as well as leaves.

Dollarspot can be controlled with the same fungicides that are effective on Brown Patch.

Spotlight

Possibly the worst of the fungus diseases is Spotlight, sometimes called Pythium. It is most apt to appear in temperatures varying from 90 to 95 degrees accompanied by excessive moisture. The individual spots are small, from two to three inches in diameter, but they usually occur in groups which sometimes spread into streaks because of being distributed by the mower or running water.

It is very hard to distinguish Spotlight injury from that of Dollarspot or injuries from cutworms or sod web worms. The main difference is that grass attacked by Spotlight has a reddish appearance. So far, no satisfactory control method has been discovered. The chance of having a Spotlight attack can be lessened by avoiding over-watering during periods of excessive heat.

Preventing Summer Injury

In cases where lawns suffer regularly in the summer a check up is advisable to determine the causes of a susceptible turf. The soil condition should be analyzed both as to subsoil and surface soil. Possibly tile drainage is needed, or it may be that only the surface grade needs correcting. If the

topsoil is sticky when wet and bakes hard when dry it probably needs to be turned over and a quantity of sand and organic matter incorporated. Under certain circumstances an application of lime may be beneficial. If air drainage is poor, this may be corrected by thinning out shrubbery plantings or trimming low hanging tree branches.

The following issues of "Lawn Care" are suggested for reference in connection with summer problems. See August 1937, Soil; March 1937, Grubs; September 1935, Summer Injury; August 1935, Summer Injury; March 1935, The Shade Problem.

Another Lawn Pest Strikes New England

"Earwig" is the name of a new arrival in the realm of lawn terrors. It is an insect or bug, somewhat of a cross between the small honey-bee and the Jap beetle. This new visitor to our shores comes from Europe and appears to have made itself most conspicuous in the state of Rhode Island. Bait has been distributed in that state in order that the insects might be killed prior to the egg laying season, which ended about August 15th. The grubs of the earwig, which will make themselves known next summer from this year's egg deposits, will live on grass and other plant roots and also upon leaves, which they mutilate very much as does the caterpillar.

The press of Rhode Island has very speedily carried the news of this latest lawn threat to the citizens of that state and articles have appeared elsewhere in New England papers. Our first informant, however, was a Massachusetts customer, Miss Elizabeth V. Kenny of Fall River, to whom we express thanks. You may expect further data on the Earwig in a next spring issue of "Lawn Care," together with a full report of the most effective means of combat.

Antietam Battlefield Now Grass Covered

SEPTEMBER 17 marks the Seventy-fifth Anniversary of the climactic day of the Battle of Antietam. Fathers and grandfathers of many "Lawn Care" readers participated in this famous encounter, one of the Civil War's bloodiest.

This year a celebration commemorates the event on the battlefield site which is now a unit of the National Park Service. Descendants of Generals George B. McClellan and Robert E. Lee and a great-grandson of President Lincoln, together with a few surviving veterans of Antietam from North and South, will be guests of honor.

Scott's Seed was selected for a bit of re-turfing which seemed necessary for the occasion.

Don't Forget

that "Lawn Care" is published five times yearly, in the months of February, March, April, August and September. Someone frequently writes that a bulletin has been missed but usually it is because the months of issue have been forgotten.

This is Number 47. We keep a supply of all past issues on file. If you've never had the complete series be sure to ask for them. Additional sets in paper binding are furnished at 25c to defray mailing cost. A stiff-backed imitation leather binder with all bulletins, several other enclosures and with capacity for "Lawn Care" issues of the next five years is \$1 postage paid.

"I have just returned from Scotland where I had the privilege of witnessing a game of bowls and I should like to have more information about it. The game is very popular in Scotland and the bowling greens are marvellous examples of lawn building."—C. C. LARSON, Springfield Sanitary Dist., Springfield, Ill.