Lawn Care
REG. U.S. PAT. OFF.

PUBLISHED IN FEBRUARY, MARCH, APRIL, AUGUST AND SEPTEMBER BY
O. M. SCOTT & SONS CO., MARYSVILLE, OHIO

April 1940 THIRTEENTH YEAR Number 60

WATERING LAWNS

EVERYBODY talks about the weather but nobody does anything about it, said Mark Twain many years ago. Little did Mark realize that in this day and age every home owner would have a lawn sprinkler for making rain whenever it was wanted.

The weather of the past decade has been so abnormally warm and dry that watering the lawn has become a regular part of the home routine. According to Weather Bureau officials, such warm, dry cycles are just a phase of normal climate. Some time, they say, the trend will be reversed to cooler, wetter weather. Even then lawn sprinkling will be important, but not quite such an ever-present problem as now.

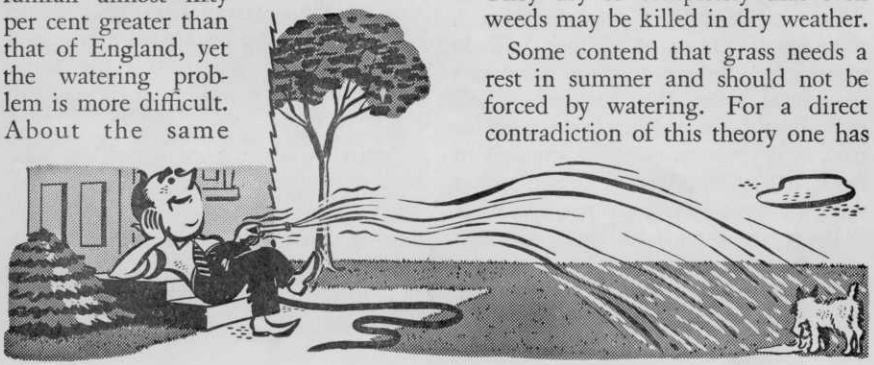
The brilliant green lawns of the British Isles owe their beauty, not to any closely guarded secrets, but mainly to ideal moisture conditions. Gentle rains fall so frequently and atmospheric conditions are so favorable that there is no critical drying.

In the United States most sections east of the Rockies have an annual rainfall almost fifty per cent greater than that of England, yet the watering problem is more difficult. About the same amount of moisture falls each month throughout the year. Surprising as it may seem, June, July and August even have a slight edge over the other months. Unfortunately, evaporation during the summer is highest and many of the rains come as heavy, dashing storms. They do the grass little good because much of the water runs off the surface before it can be absorbed. There may be many such heavy rains during the summer with severe drouths in between. To offset this fluctuation and provide a more even moisture supply, a careful watering program is needed.

How Necessary Is Watering?

It is seldom necessary to water mature grass just for the sake of keeping it alive, but a carefully watered lawn does hold its spring color throughout the summer. On loam and clay soils a good turf can withstand severe and protracted drouth. It may turn quite brown, but unless cut too short it will be revived by the slow, drizzling rains of fall. This is not true of sandy soils. They dry so completely that even weeds may be killed in dry weather.

Some contend that grass needs a rest in summer and should not be forced by watering. For a direct contradiction of this theory one has



only to look at golf course putting greens which are forced all through the summer and present a beautiful appearance year after year. If grass is fed regularly there is no reason for giving it a vacation just when a green lawn is most enjoyed.

Factors Affecting Water Needs

The amount and frequency of watering should be determined by the type of soil, height of cut, exposure of the lawn, temperature and rainfall.

As explained in the March 1940 Lawn Care, some soils have a greater moisture retaining capacity than others. If there is an abundance of organic matter this acts as a sponge to retain moisture and release it to the grass as needed. Because of their finer particles, loam and clay soils hold more water than sandy and gravelly ones.

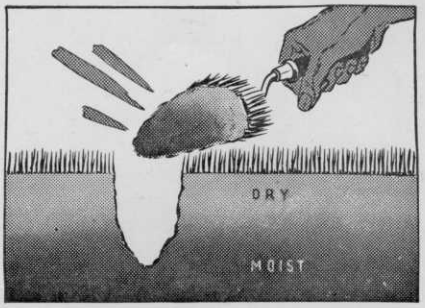
Evaporation is reduced by cutting the grass 1½ to 2 inches high, because the longer growth shades the ground. Furthermore, as pointed out in the March 1939 Lawn Care, high cutting promotes deeper rooting so grass can reach to a greater depth for moisture.

Steep slopes receive less benefit from rainfall and watering because there is more surface runoff. Those facing toward the south are subject to greater loss of moisture by evaporation.

When to Water

The amount and type of natural rainfall are the main factors affecting the timing of the watering program. A slow, soaking rain of ½ inch will do more good than a driving downpour of several times that amount. When rains have been missing for a week or two, it is time to examine the soil to see if it is getting too dry. Sometimes this condition develops much earlier in the spring than is realized. A bright sun and brisk wind can evaporate a lot of soil moisture within a few days, even in April. Therefore, the important thing is to start watering early enough in the season. Do not wait for the grass to show signs of withering. Once the soil gets too dry it is difficult to bring the moisture up to optimum again, especially if it is a heavy clay which bakes hard and cracks open.

A good lawn watering program cannot be scheduled by the calendar. The need for water is best determined by occasional examination of the soil. A



The sure way to determine need for water is to examine the soil

good plan is to cut a small plug 2 or 3 inches deep with a knife or trowel. If the upper inch or so reveals any sign of dryness it is time to water. It is easy to replace moisture to that depth but if the soil is dry much deeper the task is more than proportionately greater.

Selecting the Sprinkler

Manufacturers of irrigation equipment have long since outmoded the old method of "sprinkling" a lawn by sitting on the step and flicking a stream of water over the lawn with a hose and nozzle. There was something fascinating about the job but it didn't help the lawn much.

Many excellent grass sprinklers have been developed during the past few years. The better types rotate or oscillate to deliver water in a manner resembling rain. A fine mist is not desirable because it is easily blown by the wind. On the other hand, a coarse

stream is harmful because it washes the soil and puts the water on too fast. A sprinkler that provides the effect of a slow, easy rain is best because it allows the water to soak in as it falls and not flood the ground or run off the slopes.

In selecting sprinkling equipment the home owner should consider the size of his lawn and try to get a sprinkler which will water an area large enough so it won't have to be moved frequently. Some types cover a circular pattern, others a rectangular one. It is important to get a sprinkler that will operate satisfactorily on the pressure and volume available at the time of day when watering is done. The local water company should be able to give a close estimate as to the pressure available.

A convenient method of lawn irrigation is provided in the automatic underground sprinkler systems. These save time and labor and will do the job nicely if properly designed and installed by capable engineers.

Sometimes these systems are misused. It is so easy to turn on the water and leave it on, that there is a tendency to over-water. Some installations are automatically turned on and off by a clock. Favorable results presuppose that the moisture need is the same over any given interval. That presumption is usually wrong and too much water is applied. This may not do much harm in a light sandy soil but it will be injurious on heavier soil. Over-watering drowns grass roots.

Quantity of Water

As the soil dries out it should be necessary to replace only as much water as was lost during the interval by evaporation from it and transpiration from grass leaves. From an average loam soil this loss on a warm summer day would be about 50 gallons per 1000 square feet. In 6 days that would be 300 gallons or the equivalent of about ½ inch of rain. The length of time needed to replace that would depend upon the sprinkler and water pressure. A good type at 20 pounds pressure would need to run 2 or 3 hours.

In the case of a sandy soil, the moisture loss should be replaced long before it amounts to as much as a half inch of rain. Even though such soils absorb water quickly they actually hold less moisture and lose it more readily. They need to be watered more frequently, but in smaller quantities.

It is easy to check the delivery of a sprinkler over any given time by placing coffee cans under the spray and measuring the depth of water collected. To be sure of complete coverage it is necessary to overlap the borders of the area covered by the sprinkler.

It isn't necessary for the home owner to become involved in calculus to efficiently water his lawn. He needs only to moisten the soil as deep as dryness has occurred, be that one inch or four. By examining a plug of soil occasionally during watering, the length of time to operate the sprinkler can readily be determined. Similarly a few observations will soon enable one to decide in how many days his soil dries to a depth of an inch or so, at which time watering should be resumed.

Water Not Cure-All

The fact that a lawn is brown does not necessarily mean that heavy watering will bring back its beauty. Perhaps the browning was caused by a fungus disease, Grubs of the Japanese Beetle, or injury from a dull and poorly adjusted lawn mower. Here again the soil is the key. If it is moist and the grass is still brown, then watering is not the remedy for the trouble.

Common Fallacies

Many people inquire if chlorine and other chemicals used in purifying city water are harmful to grass. If water is suitable for human consumption or even for laundry purposes, it is not

likely to hurt grass. It is doubtful if enough such water would ever be put on a turf to cause any appreciable concentration of chemicals. The lime in some water may tend to alkalinize soils but never harmfully so.

Some folks seem to think that grass plants absorb water through their blades and stems. This is possibly due to the fact that grass looks so much fresher right after watering. Actually grass can make use of moisture only by taking it up from the soil through the root system. Merely wetting the grass and soil surface does no good. The water must be put into the ground where it becomes available to the roots.

There is widespread belief that to water during the heat of the day may result in "scalding" the grass. In fact the water has a tendency to cool rather than burn. Those who say that water drops act as millions of small lenses magnifying the heat of the sun, forget that the drops evaporate before any such burning could result. If damage to the lawn occurs after watering, look to some other cause. The important thing is to put on the right amount of water and this may be done at any convenient time of the day.

Careful tests have shown that cold well water, or warm tank water will not harm grass. Even ice water or boiling water would be close to air temperature by the time it passed through a few feet of hose onto the lawn.

The common pest, Crabgrass, is called watergrass by many because they associate it with watering and think "sprinkling" brings it on. Actually, Crabgrass will grow in drier soils than will desirable grasses but like most plants it also enjoys abundant moisture. People don't notice it until well into summer, probably soon after they start watering, hence the association. Excess watering may encourage Crabgrass by drowning the lawn grasses, thus removing competition.

The control of Crabgrass is a separate problem and is discussed in LAWN CARE for April 1935.

Special Problems

New Seedings. While prolonged drouth does not harm seed, germination can be hastened by regular watering. This may be advisable in order to take advantage of otherwise good growing weather. Once the seed has started to sprout, the supply of moisture needs to be constant else the plant may perish. Then, too, heavier soils may crust over so the seedlings can't push through. In either case three or four waterings with a fine spray may be required on bright days until the grass gets a good start. As the grass matures watering can be less frequent.

Shallow Roots. It is not uncommon for turf on heavy soils to suffer because of too much water, particularly following a very wet spring. In such cases the soil becomes waterlogged and the deeper grass roots die for want of air. The grass must then depend upon the surface soil for its entire water and food supply. The surface dries rapidly so unless moisture is provided at frequent intervals the grass suffers even though there is saturation within an inch or so of the surface. The only way to overcome the damage is to nurse the grass along by daily watering with a fine spray. As the excess water drains from the soil, the grass roots will go down and watering can be less frequent.

A similar program may be necessary for grass suffering from an attack of Grubs, Chinch Bugs or other insects. Such grass will have a weakened root structure which needs to be nursed back to health.

Tree Shaded Lawns. Tree shaded lawns lose less moisture from the surface by evaporation because of protection from the sun. The under soil, however, may dry rapidly for great quantities of moisture are taken up by the tree roots and transpired through the leaves. A medium size tree may remove as much as 75 gallons of water in one day. In such cases the water should be replaced by slow, penetrating surface applications or by using a subsoil irrigator.