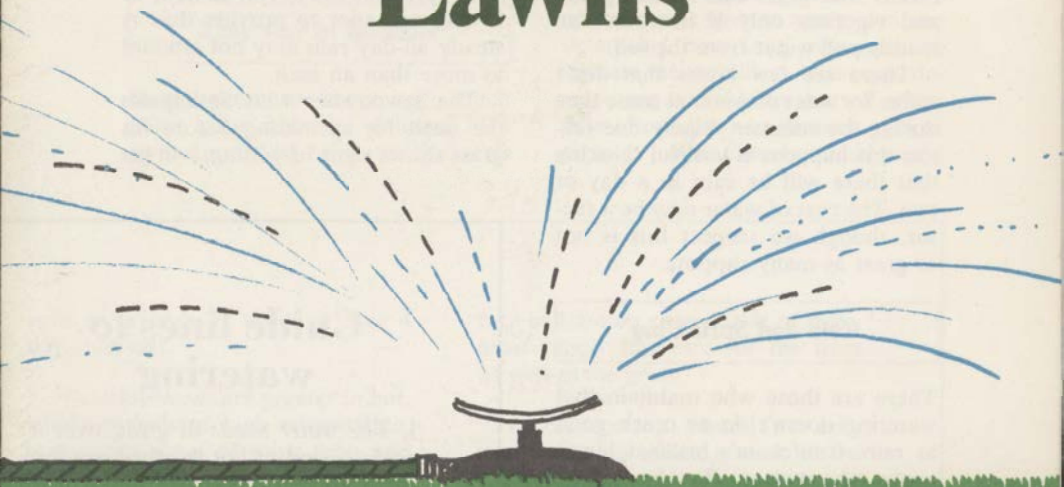


On Watering Lawns



Scotts, the grass people Marysville, Ohio 43040

On Watering Lawns

THE composition of a sturdy, green grass plant may be as much as 85% water, by weight. Furthermore, approximately 95% of the daily take-up of water from the soil is lost through transpiration. This means that grass can remain green and vigorous only if its roots can readily pull water from the soil.

There are few lawns that don't suffer for want of water at some time during the summer. Likely one reason this happens is wishful thinking that there will be rain in a day or two. The cost of water may be a factor, though we suspect this is not as great as many suppose.

Rain and Sprinkling

There are those who maintain that watering doesn't do as much good as rain. California's brilliant lawns prove otherwise. Gallon for gallon, there's little difference in effect between water from a tap and rain water. It's the total water received,



If you can water your lawn, it's better to do so before the soil dries severely. Use a trowel or other tool to cut out a sample to a depth of 2 or 3 inches. Unless the soil feels moist when rubbed between your fingers, it needs water.

and the timing, that makes the difference in grass growth.

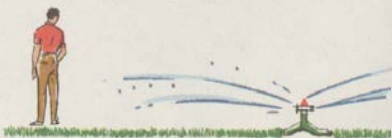
The total water needed to keep a lawn full-green in summer is, roughly, an inch per week. The typical lawn sprinkler has to run an hour or two in one spot to provide this. A steady all-day rain may not amount to more than an inch.

The lawnmower who anticipates the need for sprinkling before his grass shows signs of wilting, will get

Guide lines to watering

1. *The water needs* of grass, over a given period of hot weather, are the same whether it is growing on quickly drying, sandy soil or heavier soils which hold moisture longer. Basically, lawn grasses need the equivalent of 1 inch per week.

2. *To supply such needs*, in the absence of rain, a lawn on quickly drying soil ought to receive $\frac{1}{2}$ inch of water every 2nd or 3rd day. To put on more is wasteful since it will likely drain beyond reach of the roots. A good program for heavier





more for his money and effort.

Many lawns survive serious drouth without supplemental watering if the grass is well rooted prior to hot dry weather. However, it will likely go off color.

Easy way to measure

If you want to know how much water your sprinkler delivers in a given time, and how evenly, here's

a simple way to find out. Set 4 flat-bottomed, straight-sided cans at various distances from the sprinkler. Operate it for a planned length of time, say a half hour. Then measure the depth of the water in each can with a ruler. Relating to the amount of water you want to apply, you can determine how long you need to operate the sprinkler. Automatic devices are available to shut off water flow after lapse of a preset length of time. (Continued on next page.)

soils is $\frac{1}{2}$ inch of water at 3 or 4 day intervals.

3. *Watering needs* are greater in hot, windy periods of high evaporation, in the root zones of some trees and on slopes facing south or west.

4. *Contrary to the advice* frequently given, we urge watering in lesser amounts rather than not at all. To a plant suffering from thirst, no less than to an animal, a little moisture may mean the difference between survival and death.

5. *As to the time of day*, water your grass whenever convenient—morning, noon or night. Daytime watering neither “scalds” the grass nor causes an appreciable loss of water because of evaporation.

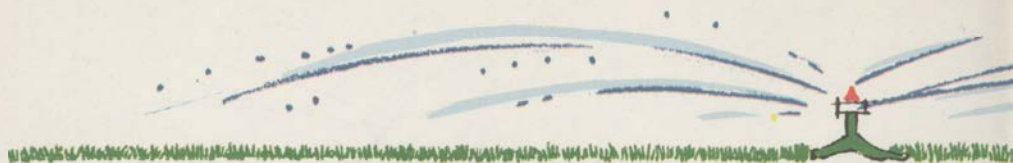
6. *Areas which are shaded* lose less water by evaporation. But the sur-

face soil, under some kinds of trees, must supply moisture for the trees as well as the grass.

7. *In late spring*, your lawn may need watering within a week of the onset of a hot spell to prevent early season wilting. Likely you will need to apply only a moderate amount of water, regardless of soil type.

8. *Watering costs.* Assuming your general home use of water covers the minimum charge and thereafter your water rate is 50¢ per 1,000 gallons, then your cost for 1 inch of water delivered on 1,000 square feet (25 x 40 ft) will be about 32¢.

In a typical May through September season, rainfall will likely take care of half of your lawn's needs for the year. On that basis, your total year's cost for sprinkling would be about \$3 per 1,000 square feet.



Wilting in heat

If part of your lawn wilts quickly when subjected to high temperatures, the cause is likely shallow roots. You may find that there is so little anchorage for the grass that you can readily separate pieces of sod from the soil.

This may happen where a waterlogged condition exists in late winter and spring resulting in loss of deeper roots for want of oxygen. New roots cannot develop until the excess water drains away or evaporates. In this situation a few days of hot sun will cause serious wilting of the shallow-rooted grass.

The solution to wilting, due to inadequate moisture, is frequent light watering to keep the surface moist so the plant can push its roots more deeply into the soil.

As grass roots and evaporation exhaust moisture, only water deliv-

ered at the surface can restore the lawn. No significant amount of moisture moves upward in the soil to reach the grass roots.

Watering and summer problems

During hot weather, insect activity (grubs, sod webworms, chinchbugs) may severely damage lawn areas. Often such injury is mistakenly considered to be due to moisture deficiency. While the damage *may* be less if a good watering program is maintained, water of itself is not the cure. Watering lightly every day may help the grass in its struggle with the attacking enemy.

Similar attention to watering is suggested in connection with fading out of poa annua in hot weather or browning of matted patches of bentgrass.

At times, an older lawn will develop a thatch-like mat of clippings and dead surface stems so it sheds water like a thatched roof. Pouring on more water may help temporarily. The thatch situation can be alleviated in cooler weather by mowing the lawn as close as feasible, raking out the surface debris, applying fertilizer and watering generously.



If you use a travelling-type sprinkler, check the soil to see whether one pass over the area wets the soil deeply enough. If not, repeat the run until the desired wetness is achieved.

Special attention

Missed areas. Even with an underground watering system, perimeter and other areas may be missed because the outer reaches of sprinklers drop little water. Because grass is



Avoid waste when watering slopes. A part-circle, impulse-type sprinkler, as shown here, provides slower delivery and gives better penetration. The flat, plastic, hose-type sprinkler is also good for this purpose, when fed with a reduced flow of water.

weakened, dandelions and similar weeds may have a heyday.

Wind needs to be taken into consideration in setting portable sprinklers and in the need to make use of such sprinklers to supplement underground systems. The placement of sprinkler heads may not adequately compensate for prevailing winds, particularly in daytime use.

New seedlings. The problem in establishing new seedlings is not to get the seed to grow but to keep the tender seedling sprouts alive. The illustrations on the following pages show what happens when these sprouts are permitted to dry. If possible, the surface soil should be kept constantly moist until the grass is

well rooted. On warm, drying days this may mean watering mid-morning, noontime and late afternoon.

Tree-shaded areas. Soil in a partially or fully shaded area may stay moist longer than adjacent areas in full sun. (Except for those shaded by trees with heavy foliage, such as Norway maples, which have an umbrella effect that limits the amount of moisture reaching the ground under the tree.) This is true for most of the year where trees provide the shade. In late summer and early fall, however, grass under trees may be the first to show watering needs. Presumably this is due to the fact that tree roots exert a greater pull on moisture as leaf-fall time approaches.

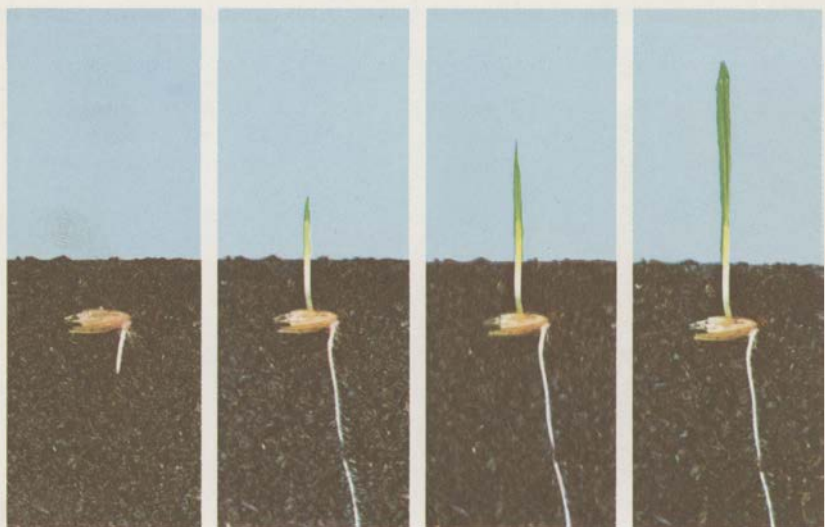
Satisfaction in the development of trees and lawns depends on the fundamentals of life—food and water. It's unlikely you'll be satisfied with your lawn unless these basic needs of grass are supplied generously.



Technical bulletin available

A scientific paper on *The Role of Water in the Physiology of Plants* by Paul J. Kramer, Professor of Botany, Duke University, is available for the asking. Write Scotts, Marysville, Ohio 43040, for a copy.

How to succeed with seed



This seed lived. *It was able to start a vigorous plant because moisture was supplied when needed. Note how the root and sprout emerged from the seed, almost simultaneously, then how the sprout broke through the ground to become a sturdy seedling. It's off to a good start, though still vulnerable to serious surface drying.*

THERE are three very good reasons why those who plant seed should do everything in their power to assure success. The first is to satisfy their desire to cover the ground with sturdy grass plants. The second is to justify the time and effort that went into the project. A third reason is the cost of the seed and fertilizer, even though Scotts fully underwrites this investment in the event that the weather doesn't cooperate or something else goes wrong.

"The seed never came up"

Unfortunately, all who plant Scotts seed do not achieve success. The most common complaint is that the seed did not grow. Obviously, no company could stay in business if it sold seed that was not viable.

The photographs directly above show what happens when the tiny root hairs of a tender young plant have access to moisture. The sprout breaks ground and continues its development.

In contrast, the photographs on the opposite page show what happens if moisture is not continuously available to the young plant after germination. As with most seeding failures, the sprout succumbed for want of moisture. Good seed can lie dormant in cold or dry soil for months or years without harm. Once it breaks the seed coat, however, a severe drying is fatal.

If rainfall is the only way a seedling will get moisture, the sower just has to take his chance with nature. In fact, it is probably better to rely

... the problem is not to get the seed to grow — but to keep the tender seedlings alive. Laboratory photos tell the story.



This seed didn't make it. Although warmth and moisture triggered germination, not enough moisture was supplied to sustain growth. In a lawn, this birth and death of a seedling would have gone unnoticed. In fact, at this critical time, a casual observer would have concluded that the seed "never came up."

on nature all the way unless the seeded area can be watered at least 2 or 3 times a day on warm, drying days. But if water can be provided, the soil should be kept constantly moist to a depth of a couple of inches.

A fluffy soil adds to the moisture problem of a new seeding because it dries so much faster than well-tilled, settled soil. In seeding, only the upper inch or so needs to be "loose."

"All I have is weeds"

During the course of a season we get many angry or sorrowful letters from lawnmowers who insist that all they got from seeding was weeds. Some charitably suggest they must be victims of a "bad batch of seed." This cannot happen with Scotts seed because of rigorous quality control

starting in the seed fields and going all the way through to sealed packaging.

The truth is that most soils contain millions of buried weed seeds that can remain dormant for years until brought to the surface—as in cultivation — where sunshine, air and moisture promote germination.

When this happens, lawnmowers ask, "Should we dig it up and start over?" The answer is a definite "no." Further cultivation of the soil would just bring more weeds to the surface. Instead, they should mow as soon as there is anything to cut. This will get rid of many weeds and prevent smothering of the young grass. Later on, most of the remaining weeds can be cleared out with weed controls, as described in our seeding directions.

Scotts® ...the grass people

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