



*Good*  
**LAWNS**

*Planting and Maintaining*



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## P R E F A C E

*There is no substitute for the pleasing effect produced by a sweep of velvety lawn. Even the modest plot of grass extending from sidewalk to front door, if it is smooth, thick and green, conveys a sense of orderliness and gives a touch of natural beauty.*

*Many lawns, to the owners' dismay, are not successful. The reason is not always lack of interest or care. Perhaps just a word from those experienced in turf growing may remove an unperceived handicap and cause many blades to grow where but one could grow before.*

*This little booklet is prepared particularly to help those who are building new lawns. A bulletin service on maintenance problems is provided in **LAWN CARE** for the asking.*

**O. M. Scott & Sons Co.**

## Starting New Lawns Right



**T**HE building of a home is a matter of joy, despite all the incidental trials. Arrangement of rooms, architectural design and pleasing appearance become matters of justifiable pride.

Certainly, the setting of the house, its lawn, shrubbery and trees, ought not to be slighted. Such matters as the saving of topsoil, the season of planting, the investment that will be involved are worth advance consideration.

The outlay necessary for the building of a lawn should be foreseen. One cannot afford to pinch on the final operations. There will be some expense in soil preparation. Fertilizer will be needed to give the seedlings a good start. It is very important that a high quality seed be used. The use of inferior seed containing chaff, weeds and coarse grasses can easily nullify all the preliminary preparation of a lawn.

## Best Time for Seeding

Many new lawns do not turn out as well as expected because they were seeded at the wrong time. The best season, except in the extreme north, is early fall. A safe general rule is to sow lawn seed in the autumn after the heavy evening dews begin, which is usually soon after August 15. The cool, moist weather normally experienced then is excellent for the germination of grass seeds and for the development of sturdy seedlings. The fall planting season extends through September and October.

In spite of the fact that the best time is early autumn, most grass seed is planted in the spring. A good lawn can be produced by early spring sowing, but it takes more attention than one sown in autumn. With a good soil, proper watering and mowing, lawns may be started even in summertime with reasonable success.

If a lawn is ready for seeding in late spring, it might be well to consider sowing a temporary lawn or even a cover crop with the intention of building the permanent lawn in early fall.

## Save the Topsoil

Before actually starting work, the careful lawn builder will examine the nature of both his subsoil and topsoil.

The subsoil lies beneath a darker surface layer of topsoil. It is the material thrown out of basement and sewer excavations. Subsoil usually has a lighter color but heavier texture. It is lacking in necessary humus and plant nutrients.

Unfortunately, many must try to grow a lawn on it because their good topsoil was buried in building operations.

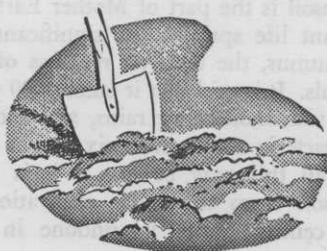
The topsoil is the part of Mother Earth from which plant life springs. Its significant ingredient is humus, the decayed remains of plants and animals. It is said that it takes 5000 years of warming sun, moistening rains, and activity of friendly bacteria to produce six inches of topsoil. Yet all this may be lost if it is covered with subsoil from the cellar excavation. The work of centuries may be undone in a few hours.

Such loss can be made good only through the expensive and frequently unsatisfactory method of buying topsoil. Reasonable care in conserving the original topsoil will be well rewarded. Before building operations are begun it should be scraped off and put into a pile out of the way to be replaced later.

The topsoil will be the home of the grass plants. In it their roots are anchored and their food obtained. If the topsoil is shallow, poor in humus and faulty in texture, the time to change it is before the seed is sown. A depth of at least four inches should be provided.

People often lose sight of the fact that a lawn is made up of millions of small living grass plants. These plants cannot thrive in a heavy, compact soil any more than can flowers. It is not uncommon to find a depth of one or two feet of loamy, rich soil provided in flower beds, while an effort is made to grow grass plants on an adjacent area of inert subsoil.

## GETTING GOOD SOIL



**I**T IS the mechanical consistency of soil and not its richness that is of basic importance. If its texture is good, fertility can be easily supplied through the use of the right grass food.

The texture of a soil is determined by the size of the particles which dominate it. The coarser ones are of gravel and sand; the finer ones silt and clay.

Clay is composed of extremely small particles. It is hard when dry, and plastic or sticky when wet. Subjected to great heat it becomes like stone. Sandy soils are just the opposite, permitting rapid drainage, drying out very quickly and remaining loose.

Another component of better soils is partially decayed organic matter called humus. This improves soil texture and acts as a reservoir for moisture and plant nutrients.



## Best Soil Type

The ideal lawn soil is a mixture of these various particles and humus in such proportions as to produce a loam, silt loam, or sandy loam soil. Such a soil is friable and works readily even when wet. It is usually dark brown to black in color, depending on the color of the minerals from which it originated and the quantity of humus it contains.

However, soil color is often deceiving. Some of the darkest soils are simply worn out muck and not suitable for lawns. Many soils that are light brown or red when dry have the appearance of a dark, rich soil when wet. It is not a good idea to judge a soil by its color when it is moist.

The mechanical nature of a soil can be determined by a simple experiment. Take a sample of the soil, wet it thoroughly and roll it into a ball, exerting as little pressure as possible. Allow it to dry a couple of days under normal room conditions. Then drop the ball to a hard surface from a height of three feet. If it crumbles readily it can be considered of good mechanical consistency. If it remains intact there is too much clay. If it goes all to pieces or crumbles in the hand there is too much sand.

Soils of heavier texture than a loam will produce a good lawn if the subsoil is not too clayey or poorly drained. Such soils must not be worked when wet or they will pack and be worse than before. For the same reason clay soils will be damaged if rolled with a heavy roller.

It is also possible to have good lawns on sandy soils (except blow sand or beach sand) if they are watered frequently during dry seasons, possibly every day. Frequently applications of fertilizer are also necessary because food elements are rapidly washed through the soil.

Provide enough topsoil to make a seedbed 4 inches deep. It takes three cubic yards of soil to add one inch on 1000 square feet.

## Securing Weedfree Soils



If it is necessary to purchase topsoil an inspection should be made of the source of supply. A garden area that has been cultivated for years is usually quite free from weeds while an area covered with all kinds of wild growth should be eyed with suspicion. Whenever there is any doubt, obtain a sample of the soil sufficiently in advance to make a test for weed growth. By keeping the soil moist and warm for a few weeks the number of weeds will soon become evident.

## Improving Soil Texture

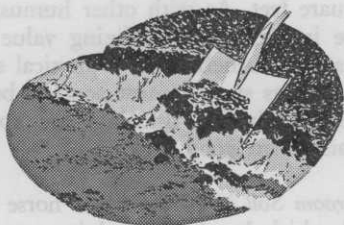
In building a new lawn, the native soil must ordinarily be used. Often this is not too de-

sirable but it may be made more suitable. Any soil of poor texture can be improved by mixing with it sufficient quantities of soil of opposite texture.

For example, 15% to 20% by bulk of clay added to a sandy soil and thoroughly mixed with it will produce a more compact soil with greater moisture holding capacity. It should be spread evenly to a depth of about 1 inch and thoroughly mixed with the upper 4 or 5 inches of soil.

Because of the difference in size of soil particles a given volume of clay has a much greater modifying effect on sand than the same amount of sand has on clay. To make any appreciable change on a heavy clay soil requires 40% to 50% by bulk of coarse, sharp sand. As much as 1½ or 2 inches of sand must be mixed with 3 or 4 inches of clay to effect any real change.

## Adding Organic Matter



Even though a soil has proper texture it needs organic matter to support a good lawn. It is the lack of humus that makes subsoil undesirable.

Humus tends to lighten heavy soils and permits a freer movement of air and moisture. It also improves sandy soils by tying the sand particles together, thereby increasing their water holding capacity. Under these ideal conditions plant food undergoes the chemical change that makes it available to the grass.

There are several good sources of organic matter. Some of the best are the green manuring crops such as a fall sowing of field rye at 3 pounds per 1000 square feet. This should be turned under in April when green and succulent. Soybeans sown in late spring at the same rate will add a substantial amount of humus. The crop should be turned under about the first of August and the area placed in cultivation for about a month to allow for decomposition and settling of the seed bed before fall sowing.

*Stable Manure* is an excellent source of organic matter. It will improve soil texture if applied at the rate of 1 or 2 cubic yards to every 1000 square feet. As with other humus materials there is very little fertilizing value in manure. Its main benefit is as a physical soil conditioner and as such it must actually be mixed into the soil. Surface dressings are apt to do more harm than good.

*Mushroom Soil* is a mixture of horse manure and soil which has been used in a mushroom bed for about a year. It has a similar value to ordinary farm manure but is usually freer from weeds and has a better texture.

*Cultivated Humus* is sold under various trade names mainly along the eastern seaboard. It is produced by growing leafy crops on muck or peat land and plowing them under. Then the surface is taken off, pulverized and screened.

*Peat* is another source of humus. Many localities have a supply of native peat available. These vary in quality and price depending on the bog and hauling distance.

Most baled peat is delivered in a very dry condition. If used that way and the lawn seeded immediately there may be trouble because the peat will draw moisture from the soil and deprive the seedlings of it.

If time permits, peat should be mixed into the lawn soil about a month before seeding. If this is not possible, it should be spread out in a shallow pile and exposed to the weather for several weeks, or it may be soaked with a fine spray from the hose until it is thoroughly moist. This takes several hours for each bale.

To bring the humus content of soil to a desirable amount, 15% to 20% of peat by volume is required. In preparing the soil to a depth of 4 inches, about an inch of peat should be spread and then spaded or raked thoroughly into the soil. One bale of peat covers 300 square feet to a depth of one inch.

*Muck* is peat which is almost completely decomposed. It is always black in color but this is no indication of richness. Although sold as "rich soil," its use has frequently been detri-

mental to turf. Some mucks are no better than worn out soils and contain so much clay and silt that they form a hard surface crust in dry weather. Others become powdery like talc. Muck should not be used alone but only as part of a soil mixture.

*Sewage Sludge* is the residue of city sewage disposal plants and is usually available for little more than the cost of hauling. Some object to using it because of the odor that comes from it in damp weather. It should be used only where it can be immediately mixed into the soil.

When using organic matter it is important to get it thoroughly mixed with the soil. If this is not done the layers of organic material will interfere with the natural movement of moisture in the soil and will discourage deep penetration of the roots. On heavy, hard soils organic matter may have to be spaded in and then further mixed by raking. A hand cultivator or wheel type cultivator is quicker on some soils. If the ground has been finely pulverized before applying organic matter, or if it is sandy or crumbly, then a rake or hoe can be used for mixing. Some contractors and nurserymen have special cultivating machinery which does the mixing better and cheaper than can be done by hand.

It is better to buy organic materials on the basis of volume, such as bales or cubic yards. If purchased on the basis of weight the buyer pays an exorbitant price for the moisture contained. Further data on organic materials is given in **LAWN CARE.**

## GRADE CAREFULLY



**C**ERTAIN points must govern the grading, including the elevation of the house, sidewalk or curb and trees. The grade between these fixed points should be pleasing to the eye and sloped sufficiently to permit adequate surface drainage. Depressions in which water will stand and ice form should be avoided, as either condition is injurious to grass.

One step often overlooked is the grading of the subsoil. This grade ought to be parallel with the desired final lawn surface but at a sufficiently lower elevation to take care of the depth of topsoil to be added later. Only then will uniform soil and drainage conditions prevail.

When the final elevation is to be lower or higher than the original surface, the change should be made in the subsoil grade after first removing the topsoil.

Except on very small lawns it is advisable to set a few grade stakes at the house foundation line and at opposite known grade points such as the curb or sidewalk. If the grade is to be uniform, stretch a strong cord between these

stakes at a height of 3 or 4 inches above what is to be the final grade so raking and leveling can be done without removing the cords.

When conditions will allow for a sloping or rolling grade set stakes 20 to 30 feet apart at various points. Then connect these stakes with cord and view the line thus formed from some distance. Adjust the cords until a pleasing effect is presented by the network of cords.

On large lawns it is well to employ surveying equipment to establish grade lines. For medium size lawns an inexpensive type of spirit level is accurate for distances up to 75 feet. It is best to use a level of some type whenever it is desired to have two points at the same level or at some predetermined fall. A slope of one foot in 100 feet is considered ideal for pleasing appearance and good surface drainage.

Depressions should be filled only with soil. Spots filled with stones or rubbish may cause trouble for years by uneven settling and interference with water supply and drainage.

It will be clear that the desired depth of topsoil must have been previously determined. Since the topsoil will settle it should be an inch or two higher than the desired final grade. For best results there should be a gradual change from subsoil to topsoil. This can be accomplished by blending the topsoil to the subsoil so there is no definite line between the two.

During grading operations is a good time to see about the installation of underground utility conduits as well as drainage and sanitary sewers. See that valuable topsoil is not lost in backfill-



ing the trenches or that sticky clay subsoil is not mixed with good loam, as so often happens.

If necessary to change the grade under trees some provision must be made to protect their roots. This is a job for an experienced tree man.

## Tile Drainage

If the soil is very heavy or clayey, it may be desirable to install a tile drainage system. This should be done after the subsoil is graded but before the topsoil is replaced. The soil should be fairly dry at the time, as a wet clay soil may become puddled around the tile. The depth of the trenches should be  $1\frac{1}{2}$  to 2 feet including the topsoil, and the lines spaced 20 to 25 feet apart.

Ordinary porous farm tile should be employed in lawn drainage and not the vitrified or sewer tile. There should be at least one-fourth inch between the joints of porous tile to allow for entrance of water as well as for expansion.

The minimum effective fall is 3 inches to each 100 feet. This grade must be set with a leveling device, as the eye cannot be trusted.

Laterals must enter the main line at an angle of 45 degrees or less, and with the fall of the water. Use three inch tile for laterals up to 400 feet in length, 4 inch for laterals up to 1000 feet. An outlet is usually available in a city storm sewer system. If not, dry wells may be used.

Tile lines are better if covered with gravel, cracked stones or cinders to a depth of 6 or 8 inches before filling in the trench, otherwise they will soon fill up with silt and mud.

## PREPARING THE SEED BED



**A**FTER the installation of tile lines, completion of subsoil grading and other preliminary steps, the lawn builder should again turn his attention to the topsoil.

The care exercised in preparing soil to receive the seed will have an important effect on the final result. It may determine whether the growth is spotty or even and whether the lawn is rough or smooth.

Except on very large areas, the final preparation is best accomplished with hand tools, particularly rakes and heavy hoes. All sticks, stones and other debris should be removed. A finely pulverized and smooth surface can be obtained by the alternate use of the rake, hoe and medium weight lawn roller. Rolling is especially important as it will reveal high and low spots which can be readily adjusted.

The upper inch of soil is where the tiny grass seedling must get its start. It should be as fine as possible and just slightly moist. A good seed bed can never be obtained on a heavy soil when

it is wet. Rolling of wet soils is especially damaging because it compacts the soil so that in dry weather it bakes as hard as cement.

## SUPPLYING GRASS FOOD



**L**AWN soils are greatly benefited by enriching them with a special grass food. After the grass is up, this food can be applied only on the surface, and, to an extent, washed into the soil. During preparation of the seed bed, it can be raked in and placed where it will be of greatest advantage in encouraging a deep, strong system of roots.

The plant food requirements of grass are entirely different from those of flowers because in grass, green vegetative growth is wanted, not blossoms. The best food for grass contains primarily elements that produce a generous leaf growth in the right ratio with those elements that are responsible for a vigorous root growth. Moreover these nutrients should be in such form as to furnish a long lasting as well as a quick supply of food.

The fertilizer selected should be distributed evenly and thoroughly raked into the upper 2 or 3 inches of soil. Some types are caustic so they must be put on several days in advance of seeding and then watered in. With other special grass food there is no danger of burning and seeding may follow right after the feeding.

## Lime Acid Soils

Several weeks before seeding, the soil should be tested for lime requirements as suggested in **LAWN CARE**. Permanent turf grasses prefer a slightly acid soil, but excessive acidity must be neutralized with lime.

Only a laboratory test will accurately determine soil acidity. It is impossible to tell whether or not a soil is sour just by its appearance. The presence of Moss or Sorrel are both commonly thought to indicate a need for lime but this is not necessarily true since either one will grow on alkaline soil. Applying lime when it is not needed may encourage weed growth.

Lime is a corrective of soil acidity. It should not be considered a substitute for fertilizer.

## Grub Proofing

In sections where White Grubs or Japanese Beetle Grubs are prevalent, it is wise to grub-proof the soil before seeding, as directed in **LAWN CARE**, to avoid later possibility of turf destruction by these pests. This can be done by working Pest Control into the upper inch of soil.

## Good Lawn Foundation

Many lawns are torn up and rebuilt every few years. If construction is thorough at the start this will not be necessary. Before sowing seed, therefore, be certain that these essentials for a good lawn have been provided:

1. Careful subsoil grade conforming to the desired final contour of the lawn.
2. Tile drainage in heavy and poorly drained subsoil.
3. A gradual blend from subsoil to topsoil, with no distinct layers of different materials.
4. At least 4 inches of topsoil having good texture and abundant organic matter.
5. Application of lime if the soil tests extremely acid.
6. A generous application of special grass food capable of lasting as well as immediate stimulation.

## CHOOSING THE SEED



THE selection of seed for an initial sowing is a matter of greatest importance. Presumably, the choice will have been made long before

the time for sowing arrives. It is a disastrous blunder to buy seed in a hasty or thoughtless manner. No matter how favorable the other factors may be, sowing of poor lawn seed dooms any lawn to failure.

### **Bent Grass**

In selecting permanent turf-making varieties for the lawn, Bentgrass may well receive consideration. This has become familiar to many because of its extensive use on putting greens and its increasing use on lawns.

The pure Bentgrass makes a turf of fine texture. It has a rich, almost brilliant color, and grows so quickly that weeds are crowded out. It makes a solid carpet-like lawn which can be mown closely, but is somewhat more subject to disease attacks. To bring out its full beauty, a Bentgrass lawn must be topdressed at least once a year.

For further information send for free booklet **SCOTTS BENTGRASS LAWNS**.

### **Grass for the Shady Lawn**

Grass varieties which do best in full sunshine make a poor showing under the shade of trees or shrubbery and north of buildings. For such spots, a special mixture of shade tolerant grasses must be provided. These are more expensive than other grasses, but they must be used to produce successful turf where there is less than half a day of sunshine.

A complete treatment of the shade problem is given in **LAWN CARE**.

## The Question of Clover

The use of White Clover is a matter of personal preference. Clover is not a grass and some feel that it has no place in a lawn. It grows in patches, breaking the continuity of an even textured turf, and often winter kills badly.

On the other hand, Clover will grow on poor soil where the average lawn grass fails, thus occupying space that otherwise might become infested with weeds. It looks green after mowing, because it grows so close to the ground.

If it is desired it is better sown by itself rather than as part of a lawn seed mixture. In that way it is possible to get a more even distribution. It is best planted in early spring.

### SOW SEED EVENLY



**T**HE ideal time to sow seed is on a calm day, when the topsoil is moist and the surface is just beginning to dry out.

If wind comes up during the seeding operation, sow with the wind and not against it. If

the area is large, the use of a mechanical seeder is better than hand sowing.

Whether the hand method or the mechanical seeder is used, it is well to divide the seed and sow one-half in one direction, then the other half at right angles to the first. Otherwise, a uniform lawn will not result because some areas will get no seed and other spots too much.

The rate of seeding will vary with the sort of mixture used. A high quality mixture will go twice as far as one of poor quality. Four to 6 pounds of such a mixture per 1000 square feet will be quite sufficient. A poor mixture, on the other hand, must be sown at a much heavier rate, and, even then, the result will be poor, weedy turf.

### Cover Seed Lightly

After the seed has been sown evenly it is essential that it be covered about  $\frac{1}{8}$  inch, just enough to keep it from blowing away. If seed is buried too deeply the grass will not emerge. Small areas may be lightly covered with screened soil.

Otherwise cover the seed by raking carefully. The practice of using a layer of straw is not advised except for protecting slopes and possibly for summer plantings. A layer of peat or manure should never be used.

It is advisable to roll newly seeded lawns with a light roller. This firms the soil and brings it into direct contact with the seed which can then get moisture for germination.



## EARLY CARE

**W**HILE prolonged drouth does not harm seed, its germination can be hastened by regular watering, to take advantage of otherwise good growing weather. Once the seed has started to sprout, the supply of moisture needs to be constant or the plants may perish. Two or three waterings with a fine spray may be required on bright days until the grass gets a good start. It is not necessary to soak the ground because the first roots are short ones. Only the surface of the ground needs to be kept moist at all times. As the grass matures, watering can be less frequent but heavier.

If a heavy rainstorm seems in the offing sprinkle the area immediately. By thus firming and binding the surface soil, washout and erosion losses may be considerably lessened.

Young turf is not benefited and may be harmed by protection from cold so no winter covering is recommended. Spreading straw or manure introduces more weed seeds into your lawn and often smothers the grass underneath.

### The First Mowing

New grass should be cut when it is about 2 or 3 inches tall, with a very sharp mower set to cut  $1\frac{1}{2}$  or 2 inches high. Dull blades pull the plant and break many of the tender hair-like roots.

## Reseeding the Bare Spots



There are apt to be some bare spots in a new lawn. The causes are many. Some seed may be covered too much and its growth either prevented or greatly retarded. Other seed may be covered too little. Some may be washed or blown away. In low spots seedling plants are sometimes drowned because of standing water, while other grass may die for want of needed moisture.

One of the main causes of bare spots in new lawns is a fungus disease called "damping off." Sometimes it 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 started. 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. Unfortunately, there is no practical preventive.

Just as soon as it can be determined with certainty that new grass is not going to catch in some places, these spots should be reseeded.

The question sometimes arises, especially in the case of a late seeded lawn, whether it is better to reseed bare spots in mid-summer or wait until the fall season.

While fall is recognized as the best time to start new grass, bare spots should be touched up as soon as they appear, regardless of the season.

If a covering of grass is not provided quickly, these spots are vulnerable and weeds may soon get a foothold. This is especially true in spring and summer because weeds are most active and vigorous then. From such a start they spread and infest the entire lawn.

## Lawn Renovation

SOMETIMES it is difficult to decide just what to do with a poor lawn. Should it be spaded up and rebuilt from the very beginning? Or can it be nurtured back to good health and beauty by surface treatments?

If repeated attempts to establish a permanent, thick turf have failed, then there must be something fundamentally wrong with its original construction. In such a case, spading and rebuilding the lawn is essential. However, the causes of previous failure should first be determined and corrected.

Spade under the weedy vegetation along with the soil for it will add valuable humus. As it decays the soil will settle. Therefore, it is best to spade the ground several weeks in advance of seeding so there will be ample time for settling

to take place. These low spots should then be filled up with good soil before sowing the seed.

The depth of the topsoil will determine how deep to spade. It is not desirable to turn subsoil up to the surface and bury the good topsoil. While weed seeds, formerly at the surface, may be turned under and put out of the way, other weed seeds may be brought to the top from the lower depths. After being given an opportunity to sprout this new weed crop may be deleted with an application of Scotts 4-X Weed Control.

If it appears that failure of the old lawn was due to lack of proper maintenance over a period of years, then renovating by surface treatments may be expected to show improvement. The best time to renovate a run-down lawn is in the early spring or late summer when competition from weeds is at a minimum, and cooler weather is favorable to the development of turf.

### Preparation

Wherever lawn weeds are most prevalent it is well to eliminate them at this time with a treatment of Scotts 4-X. Several days following application, when the weeds start showing the effects of the selective chemical, new grass seed should be scattered in the spots which will otherwise be left barren by the disappearance of the weeds.

Close mowing is not ordinarily a sound practice for it weakens turf. However, in renovation it is necessary. Rake the lawn and mow it in the opposite direction with the mower set to cut as

low as possible. Rake and mow again, changing the direction of each operation. The purpose is to remove the prostrate grass blades, thus exposing the soil and revealing thin spots. Scarify the surface of the ground with a rake.

Some parts of a lawn may become compact because of frequent trampling. Such places should be loosened by forcing a spading fork or similar tool into the soil to a depth of six or eight inches. If the perforations are made fairly large, and sharp sand or compost brushed into them, opportunity will be given for penetration of air, moisture and plant food which will encourage deeper rooting and insure a better stand of grass.

If practical, topdressing the poorest parts of the lawn with one-fourth to one-half inch of good, loamy, weedfree topsoil will provide a better seed bed for the new sowing. In addition such topdressing may be used to build up low spots; thus correct faulty drainage and improve the lawn grade. One cubic yard of good soil is enough to topdress about 1,000 square feet.

The easiest way to topdress a lawn is to dump the material in small piles over the area to be treated and then spread it out with the back of a garden rake. Dragging with a flexible steel door mat helps to work topdressing down into the turf and to level the low spots.

## Providing Food

Feeding plays an important part in the lawn renovating program. An even application of a special grass food will encourage the existing

turf to tiller out as well as promote a vigorous growth of the new grass. The quantity required depends entirely upon the brand used. A low price may be misleading. The more concentrated fertilizers cost more per pound but less per lawn since they will go three to four times as far. Furthermore, some fertilizers are caustic and very apt to burn. As in the building of a new lawn, it is important to use a specific grass fertilizer. This will prove the most economical as well as the most effective.

## Sowing the Seed



Follow feeding by seeding. The amount of seed to be sown depends upon the condition of the turf and upon the quality of the seed. Two or three pounds per 1000 square feet should be ample, if clean, high germinating seed is used. Rake the seed lightly into loosened soil or cover it with one-eighth inch of good topdressing. Follow this by a light rolling to bring the seed and soil into close contact.

If this renovation is carried out in cool weather the grass should be cut frequently and closely so the old grass will not offer too much competition to the seedling plants. In such cases it is well to catch the clippings and also to keep leaves cleaned off the lawn.

## Improving Shaded Lawns

The grass under or near trees and shrubs is frequently thin and weak due to the competition for food and moisture. In such a case the renovation problem involves the trees and shrubs as well as the grass.

At times it may be advisable to prune the lateral surface roots at the edge of a shrubbery bed or hedge. Most important is provision for an independent food supply for these roots. A good grass food is quite suitable for this feeding job. This can be easily worked into the mulch of the shrubbery bed. The feeding of a tree is a bit more difficult but this is very important for the health of the tree as well as the grass. If both grass and trees are competing for the surface supply of plant food both will suffer from lack of nourishment.

After the food requirements of the trees have been taken care of, a surface application should be made for the benefit of the grass.

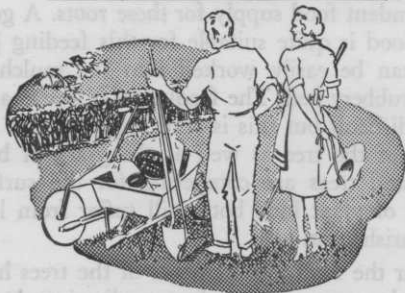
If the lawn gets less than a half day of sunshine it is necessary to use special grasses that are adapted to growth in shaded conditions. Ordinary seed mixtures will not survive.

The best time to improve a shaded lawn is in early fall. Although this may require extra

care in keeping leaves removed so they won't smother the tender plants there is a distinct advantage in seeding at this season. The grass has extra time in which to become established before leaves shut out sunlight the following spring. Spring seeded lawns, while often successful, are subjected to the harmful effects of shade from trees before they can develop much root growth. Consequently their chances of survival are lessened.

Further details about feeding trees and improving shaded lawns may be found in **LAWN CARE.**

## Lawn Maintenance



**E**VEN the best built lawn does not maintain itself. Under the fostering hand of man, luxuriant turf may last indefinitely. Neglected, it will deteriorate and become poor and weedy.

Methods of mowing and watering are important. Excess soil acidity must be corrected. Food materials must be provided to replace those that are exhausted or washed out in drainage water.



## SPRING LAWN TREATMENT

**T**HE spring maintenance program may begin in late February or early March and seed scattered where the turf is thin. At that time the soil will be somewhat open, a honeycombed effect produced by alternate freezing and thawing. Seed sown in such ground need not be covered, it is gradually worked into the soil by action of weather. Cold will not hurt seed.

Scattering seed on the snow is an easy way to do a good job on a level lawn. As the snow melts, the seed settles into the ground. Germination takes place as soon as the soil becomes warm, and the grass plants have time to become established before hot weather.

One good practice often overlooked by home owners is the feeding of turf in late winter while grass is dormant. The work is then out of the way before the rush of spring gardening. As the ground thaws the plant food elements settle into the soil. Grass makes an earlier, faster growth and has more advantage over weeds.

Of all things that can be done to help build a better lawn there is nothing so important as regular feeding every spring.

If feeding and seeding is not done while the soil is still frozen, then as soon as the ground has thawed, rake the lawn thoroughly with an iron-toothed rake. This scarifies the surface and removes leaves, dead grass and other debris accumulated over winter. This is suggested only for well established lawns and not those started the previous fall.

If the reseedling of thin areas has not been done earlier, it should follow the fertilizer application. Rake the seed in lightly or cover it with one-eighth inch of topdressing.

### Roll Lightly



It is important that the lawn be rolled as soon as frost is out of the ground in the spring. This firms the surface soil and pushes the frost heaved crowns of grass back into the soil. A water or sand roller is the best type and should not weigh over 125 pounds per foot of width.

It is a mistake to roll lawn soils when they are very wet. This compacts the surface soil so it bakes into a cement-like condition in the summer. Usually there are only a few days in the spring when soil is just right for rolling. This ordinarily comes before grass starts growing but after the time deep freezes may be expected.

### SUMMER MAINTENANCE

**T**HE important features of summer lawn maintenance are mowing, watering and weed control which is discussed in **LAWN CARE.**

In some cases it has been found that a light feeding in June gives grass a better color through the summer months. This is not recommended when Crabgrass or other summer weeds are dominant in the lawn because they likewise benefit from the feeding. A good, clean, weed-free lawn may be aided by an application of grass food at about half the usual rate but a poor, weedy lawn will not be benefited.

### Cut High



It is common practice to cut grass too closely during the summer. The height of cut measured by the distance from the stationary mower blade to the ground should be  $1\frac{1}{2}$  or 2 inches.

Higher cutting means a stronger turf because the longer blades encourage deeper rooting. This sturdier grass can better withstand the competition of weeds, heat and drouth, insect and animal pests, and the wear and tear of traffic.

It is especially necessary to avoid close mowing during hot weather. At that time the longer

grass protects the roots and stems from the direct burning rays of the sun and conserves moisture by reducing surface evaporation.

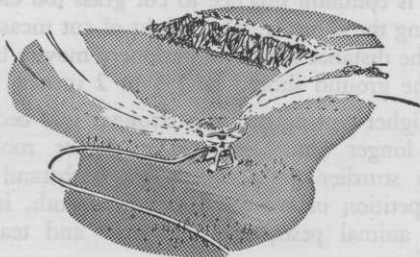
On areas subjected to considerable traffic, high cutting gives added protection to the grass crowns, making them more wear-resistant.

### Adjusting the Mower

The height of cut of hand mowers is determined by the adjustment of the wooden roller. Where these cannot be adjusted to the desired height of cut, they can be adapted by means of special brackets or larger rollers.

Remove the grass clippings in wet weather and whenever they are long enough to mat, otherwise they may be left without injuring the appearance or growth of the grass. There may be a slight benefit from these clippings in that they provide a mulch which reduces evaporation, but they do not supply the grass with readily available plant food.

### Correct Watering



It is seldom necessary to water mature grass just for the sake of keeping it alive, but a care-

fully 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.

The amount and type of natural rainfall are the main factors affecting the timing of the watering program. A slow, soaking rain of  $\frac{1}{2}$  inch will do more good than a driving down-pour 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 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.

## FALL LAWN TREATMENT

WITH the advent of cooler weather in late August or early September comes the best grass growing season of the year. Warm days, cool nights and abundant soft rains make this an ideal time to remedy summer's damage. Germination is quick because the seed lodges in soil that has been thoroughly warmed by the sun all summer long. Vigorous roots develop as a natural preparation for the winter season ahead.

Should early fall seeding be delayed, then even winter seeding merits a trial. In practically all experiments such plantings have compared very favorably with those made earlier in the season. Although the seed lies dormant until spring, it gets an earlier start than spring seeded lawns.

In making the fall lawn treatment Crabgrass and other weedy grasses such as foxtail, which are not affected by selective weed chemicals, should be removed. Mow the Crabgrass closely and start the renovation before it produces seed. After destroying the weed growth, a feeding and seeding program should be followed similar to that outlined for spring.

Rake the surface to loosen the soil slightly before applying fertilizer and sowing the seed. Sow the seed uniformly, then use a light weight roller to press it into the soil.

Remove falling leaves regularly so they will not mat and smother the new planting. There is little danger of pulling up the tender grass if

a flexible leaf rake is carefully used. By keeping the lawn closely mowed the young grass will not be shaded too much by the old grass, but when growth begins to slow down raise the mower to cut 2 inches high. This will prevent serious damage from a heavy frost.

The question is often raised about the value of a winter mulch such as leaves, straw, or manure. The evidence is against their use, because any advantage they afford is more than offset by the danger of smothering the grass and the risk of introducing weed seeds. The only protection a lawn needs for the winter is against trespassers. If grass is walked on while frozen the footprints may show for months to come.

## PLAN YOUR LAWN

**I**F ANY one conclusion can be drawn from an abundant experience with fine turf, it is that good lawns are rarely accidental. They are planned.

With a little simple planning a beautiful lawn is within anybody's reach. Behind the preparation of this booklet lies a sincere desire to bring you intelligent counsel concerning the building and care of one of nature's most beautiful gifts—a good lawn. May yours be a source of joy and a contribution to your contentment.

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