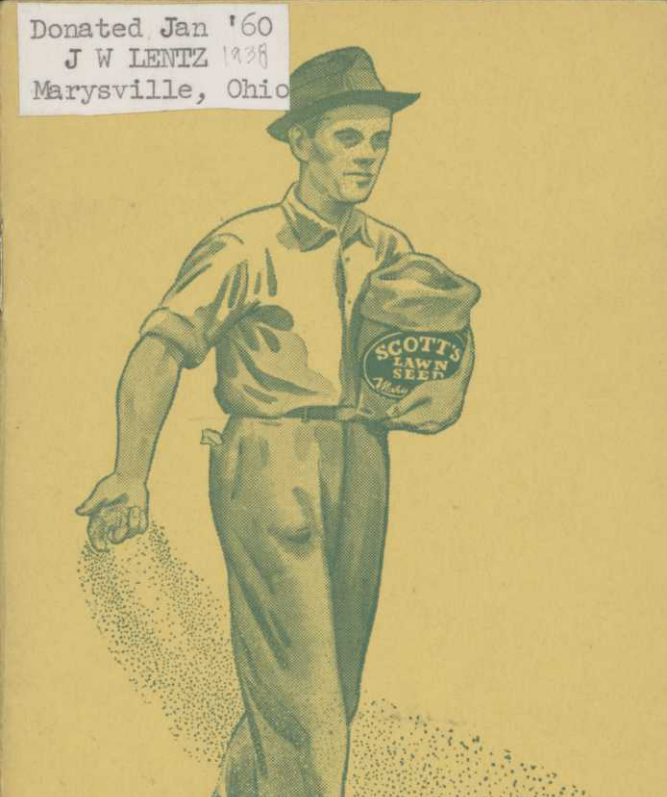

GOOD LAWNS

planting and maintaining

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A GUIDE TO THOSE WHO APPRECIATE THE ORDERLY BEAUTY OF A WELL KEPT LAWN

O. M. SCOTT and SONS COMPANY
MARYSVILLE, OHIO

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PREFACE

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 owner's dismay, are not quite successful. The reason is not always lack of interest or care. Sometimes a word from those experienced in turf growing may remove an unperceived handicap and cause two 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" which will be sent five times a year for the asking. A service is also offered in soil testing, weed and pest identification, and almost any other problem pertaining to lawns—all without charge.

Starting New Lawns Right

The 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 be slighted. Such matters as the saving of topsoil, the season of planting, the anticipation of the investment 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 of the preliminary preparation of a lawn.

Best Time for Seeding

Many new lawns do not turn out as well as hoped because they were seeded at the wrong time. The best time, 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 an autumn sown one. With sufficient water and hand pulling of weeds, lawns may be sown even into June with prospects of reasonable success.

If a lawn is ready for seeding in the 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 his subsoil and topsoil condition.

The subsoil is usually an inert material, lacking in necessary humus and plant nutrients. Unfortunately, many must try to grow a lawn in it because their good topsoil was buried in building operations. Theirs is a discouraging task.

The topsoil is the mother earth from which life springs. Its significant ingredient is humus, the decayed remains of plant and animal organisms. 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 to the lawn builder, 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 unsatisfactory method of buying topsoil. Reasonable care in conserving the original topsoil will be well rewarded. Before building operations are begun the good topsoil should

be scraped off and put into a pile in an out-of-the-way place to be later replaced.

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 six inches, or even four, may suffice, though eight inches is better. A greater depth of topsoil is needed where the subsoil condition is very poor.

GETTING A GOOD SOIL

It is the mechanical consistency of soil and not its richness that is of basic importance. If its texture is good, food may 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. These particles may be coarse, medium or fine. The coarser ones are gravel and sand; the finer ones are silt and clay. Individual particles of gravel and sand are easily distinguished by the eye; those of silt and clay are not.

Clay soils have the characteristic of being poorly drained, which causes them to dry out slowly and bake hard after drying. Clay is fine grained earth composed of particles from the decomposition of rock. 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 holds

moisture and plant food and improves soil structure.

Best Soil Type

The ideal lawn soil is a mixture of these various particles in such proportions as to produce a loam or silt 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 quantity of humus present and the color of the minerals from which it originated.

Soil color is often deceiving. 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. Some of the darkest soils are simply worn out muck and not suitable for lawns.

The mechanical nature of a soil can be determined by a simple experiment. Take a sample of the soil, wet it thoroughly and roll 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 3 feet. If it crumbles readily it can be considered of good mechanical consistency. If it remains intact there is too much clay in it. 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 possible to have good lawns on sandy soils if they are watered frequently during dry seasons, possibly every day. Frequent applications of fertilizer are also necessary because food elements are rapidly drained away.

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 type and quantity of weeds will soon become evident.

It takes 4 cubic yards of soil to add 1 inch on 1000 square feet.

Improving Soil Texture

In building a new lawn, the native soil must ordinarily be used. Often it is not desirable 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 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 permit a freer circulation 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 soybeans 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.

Farm manure is an excellent source of organic matter. It will greatly improve soils if applied

at the rate of 1 to 2 cubic yards to every 1000 square feet. Unless thoroughly rotted it is apt to contain many seeds of troublesome weeds.

Spent mushroom soil is a mixture of horse manure and soil which has been used in a mushroom bed for about a year. It has about the same value as ordinary farm manure, is usually free from weeds and has a good texture.

Peat is another source of humus. Imported peat is available in almost any section of the country. Some localities produce domestic peat, although not all of it is good for lawns.

Most 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 away from the seedlings.

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 to a desirable amount, 15% to 20% of peat by volume is required. In preparing the soil to a depth of 4 inches, a 1 inch layer of peat should be spread and mixed thoroughly into the soil. One bale of peat covers 300 square feet to a depth of 1 inch.

Muck is an advanced stage in the decay of domestic peat. Where available cheaply and free from toxic acids, it can be used in the same manner as recommended for peat.

When using organic matter it is important to get it thoroughly mixed with the soil and not placed in layers.

It is best to purchase organic materials by volume rather than by weight, otherwise the buyer may be paying an exorbitant price for water. The value of any such materials is largely in the amount of bulk supplied.

GRADE CAREFULLY

Certain 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 point often overlooked is the importance of subsoil grading. 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 levelling can be done without having to remove 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 line spirit level is accurate to distances up to 75 feet. It is best to use a level of some type wherever it is desired to have two points at the same level or at some predetermined fall. A slope of 1 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 mixing a little of the topsoil into 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 backfilling

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.

Benefits of 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 bottom of the trenches should be at a depth of 1½ to 2 feet including the depth of the topsoil, and the lines spaced not over 20 or 25 feet apart.

Since most water enters tile drains between the joints, the type of tile used makes little difference. To allow for entrance of water as well as for expansion, there should be at least one-fourth inch between the joints of porous tile and about one-half inch between the joints of vitrified or cement tile.

The minimum effective fall is 3 inches to 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. Three inch tile may be used for laterals up to 400 feet in length, and 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 must be 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

After 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 it bakes like cement in hot weather.

Lawn soils are greatly benefited by enriching them with a specific grass food. After the grass is up, this food can be applied only on the sur-

face, and, to an extent, washed into the soil The time to apply to greatest advantage is during the preparation of the seed bed, when it can be raked in and placed where it will encourage a deep, strong root growth.

The plant food requirements of grass are entirely different from those of flowers because in grass, green vegetative growth is wanted while in the latter it is blooms. 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 3 or 4 inches of soil. Some types are caustic so they must be put on several days in advance of seeding and watered in. With other special grass foods there is no danger of burning and seeding may follow right after the feeding.

Is Lime Needed?

Several weeks before seeding, the soil should be tested for lime requirements as suggested in the February 1938 issue of *Lawn Care*. Permanent turf grasses prefer a slightly acid soil, but excessive acidity must be neutralized with lime.

Grub Proofing

In sections where White Grubs or Japanese Beetle Grubs are prevalent, it is wise to grub-proof the soil before seeding to avoid later pos-

sibility of turf destruction by these pests. This can be done by working Arsenate of Lead into the upper 2 inches of soil. The required amount will vary from 10 to 40 pounds per 1000 square feet, as directed in *Lawn Care,* March 1937.

CHOOSING THE SEED

The selection of seed for an initial sowing is a matter of greatest importance. Presumably, the selection 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, the sowing of a poor lawn seed mixture will inevitably result in disappointment.

Cheap mixtures are likely to contain coarse grasses that have no place in a lawn, grasses that grow luxuriantly for a time but fail to make permanent turf, and weeds that will give endless trouble.

In sowing a mixture containing only 1% weeds, 100 to 125 weed seeds are planted on each square foot of ground. It is common to find cheap mixtures containing 2% or 3% of weeds.

High grade mixtures are the most economical because they can be sown at a lower rate. Moreover, buying weeds is an expensive proposition at any price.

Creeping Bent

In selecting permanent turf-making varieties for the lawn, Creeping Bent may well receive consideration. This has become familiar to many

because of its extensive use on the putting greens of practically all of the fine northern golf courses.

Creeping Bent 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 Bent lawn must be topdressed at least once a year.

For further information about Creeping Bent grass send for *Bent 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 or north of buildings. For such spots, a special mixture of shade loving grasses must be provided. These are available and while they are more expensive than other grasses, they will thrive in the absence of sunlight.

A complete treatment of the shade problem is given in *Lawn Care,* March 1935.

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 it 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.

It is a legume, and tends to enrich the soil with nitrogen. 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 the early spring.

SOW SEED EVENLY

The 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, seed 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 coverage will not be obtained because some areas will get no seed and other spots too much. An inexperienced person may divide the seed into four equal bulks and sow each over the entire area from a different angle.

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 a poor, weedy turf. The percentage of permanent grass

seeds in such a mixture is small, and in order to get enough permanent grass plants, the seed must be sown thickly.

Cover Seed Lightly

After the seed has been sown evenly it is necessary that it be covered very lightly, just enough to keep it from blowing away. If seed is buried too deeply it will not germinate.

If there is an available supply of finely screened weedfree topsoil, the seed may be covered very lightly with it. The practice of using a layer of straw is not advised except for protecting slopes. A layer of peat or manure should never be used to cover new seedlings.

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

Unless a prolonged drouth follows seeding it is best not to start sprinkling. Once started, watering must be repeated often enough to keep the surface from drying out and forming a crust which the seedlings cannot penetrate.

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

EARLY CARE

During the first month of growth, seedling plants must be watered at shorter intervals and more lightly than established turf. The root system is limited and cannot reach the deeper mois-

ure. As the turf becomes older less frequent and more intensive watering will encourage deep rooting. When seeding is done in the fall, natural climatic conditions usually take care of the moisture problem until spring.

Young turf is not benefited and may be harmed by protection from cold, so no winter covering is recommended.

The First Mowing

Seedlings should first be mown when the grass is about 3 inches tall. The cutting may be done with a scythe or with a very sharp mower set to cut 2 or 3 inches high. Dull blades pull the plant and break many of the tender hair-like roots. The first clippings may be left. If the grass is 3 or 4 inches long during the winter it will start off better the next spring. New grass should not be cut after danger of heavy frost.

Reseeding the Bare Spots

Except under very favorable circumstances there are apt to be some bare spots in a new lawn. The causes are many. Some seed may have been covered too much or too little, other may have been washed or blown away. Some seedling plants are drowned because of water standing in low spots, while grass in other spots may die for want of needed moisture.

One of the main causes for bare spots in new grass is a fungus disease called "damping off." This is especially troublesome in wet seasons. There is no preventive except that the grass in well prepared seed beds seems more resistant.

Lawn Renovation

Whether to attempt renovation of an unsatisfactory lawn or to rebuild it is often a real question. If the grading is faulty, if the soil is poor, if repeated attempts to establish a permanent thick turf have failed, rebuilding is indicated. The causes of previous failure, however, should be known and avoided.

If it appears that failure is due to lack of proper maintenance and care, perhaps over a period of years, then renovation may be expected to correct the condition.

The best time to renovate a run-down lawn is in early spring or late summer, when competition from weeds is at a minimum and cooler weather is favorable to the development of turf.

Preparation

Rake the lawn and mow it in the opposite direction with the mower set to cut as low as possible. Such close mowing is not ordinarily a sound practice. Rake and mow again, changing the direction of each operation. The purpose is to remove the tops of prostrate creeping weeds and grass blades that have toppled over, thus exposing the soil and revealing thin spots. Loosen any bare ground with the rake.

It is advisable, at this time, to pull or dig out as many weeds as possible. Dead Crabgrass plants should be raked out. In spots where weeds are very prevalent it may be necessary to eradicate them by one of the methods suggested in *Lawn Care.*

Spade up bare spaces to a depth of three or four inches, being careful not to cover the topsoil with subsoil. If the soil of these areas is poor, it should be improved as suggested on page 10. or replaced with good topsoil.

Frequently, grass around trees, shrubs and hedges is thin because of competition for food and moisture. It may be advisable to carefully prune the roots by forcing a sharp-edged spade about eight inches into the soil.

If practical, topdressing the poorest parts of the lawn with one-fourth to one-half inch of good, loamy, weedfree topsoil will provide a suitable seed bed for the new sowing. In addition such topdressing may be used to build up low spots and thus correct faulty drainage and improve the grade of the lawn.

Enriching the Soil

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. Bare spots should receive about twice this amount. Rake the seed lightly into the loosened soil or, better, cover it with one-fourth 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.

Lawn Maintenance

The best built lawn does not maintain itself. Under the fostering hand of man, luxuriant turf may last indefinitely. Neglected, it is likely to 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

The 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 full of holes, a honeycombed effect produced by alternate freezing and thawing. Seed sown in such ground need not be covered, as it is gradually worked into the soil by action of the weather. Cold will not hurt the seed. Many grass seeds germinate better if they have been subjected to freezing temperature. 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 a chance to become established before hot weather.

One good practice often overlooked by home owners is the feeding of turf in late winter or early spring while grass is in a dormant condition. The work is out of the way before the rush of other spring gardening. As the ground thaws the plant food elements settle into the soil where the roots can make use of them.

If the right type of fertilizer is selected for this early treatment there will be no loss of the valuable food elements. In contrast, much of a straight mineral fertilizer is apt to be washed out before the grass can make use of it.

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

The right grass food is derived from both inorganic (mineral) and organic sources. Inorganic fertilizers are stimulants. They urge the grass to a quick and better growth but are effective only over a short period.

Organic fertilizers are tonics. Under conditions of warmth and moisture they are slowly released and supply plant food for a long period.

A fertilizer containing both organic and inorganic elements will supply a quickly available source of food and by the time this is exhausted, the organic portion will become active and provide a lasting source of food.

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 reseeding of thin areas has not been done earlier, it should follow the fertilizer application. Rake the seed in lightly or cover it with a one-fourth 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 100 to 125 pounds per foot of width.

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

Many weeds are easily hand pulled in early spring. Others, such as dandelions, are in their weakest stage just as they come into bloom so that is a good time to apply sprays.

SUMMER MAINTENANCE

The important features of summer maintenance are mowing, watering and weed control.

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 would benefit from the feeding. A good, clean, weedfree 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 months. The height of cut

as measured by the distance from the bed knife to the ground should be 1½ 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.

A better turf can be obtained by raising the height of cut without sacrificing appearance, so long as the grass is cut regularly. A newly mowed lawn looks better because it is even rather than because it is closely clipped.

It is necessary to avoid close mowing, especially 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.

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.

Poorly adjusted or dull lawn mowers do much damage to grass by bruising the tips of the leaves, thus giving the lawn a brownish cast.

It is best to mow a lawn sufficiently often so the clippings can be left without injuring the appearance or growth of the grass. There is some benefit from these clippings in that they provide a mulch which reduces evaporation. They also return a certain amount of plant food to the soil. If the clippings are long or extremely heavy a grass catcher should be used or the lawn raked after the clippings have dried.

Correct Watering

Artificial watering during the summer months should be considered only as a supplement to a deficiency in the normal rainfall. An excess of water causes damage. Clay soils become puddled. Grass grows spindly and is more susceptible to disease. Acidity of the soil is increased, nitrogen and other nutrients leach out, and more fertilizer is necessary.

Incorrect watering has a cumulative effect which may become more apparent after three or four years. Daily light sprinklings are harmful except on sandy soils that drain very fast. Continued light waterings of heavier soils produce a growth of roots near the surface, where they may be injured by the drying sun and wind.

The purpose of artificial watering is to produce a storage of water in the soil. Hence, it should be deep and thorough, rather than light and frequent. In the absence of rain, a thorough soaking once in six or eight days, to moisten soil to a depth of four to six inches, is advised.

It is a mistake to water lawns on a definite schedule. Some need water every day or two, others at weekly intervals. Soil type and exposure vary so much that no rules can be established. Whatever water is applied should be in a light spray so the ground can absorb it as it falls.

Weeds

Weeds come into lawns from various sources. Many weed seeds are in the soil when the lawn is planted. Many are sown when a low grade

seed mixture is used. Manures and topdressing soils may contain them in large numbers. Some seeds, as those of the dandelion, are carried by the wind from adjoining infested areas.

The appearance of weeds in increasing number indicates that conditions are becoming less favorable for the growth of turf. The soil may be too acid, too wet, too compacted, or poor in available nutrients. The best methd of controlling weeds is that of maintaining a healthy turf by sowing clean seed, by proper fertilization, and sound cultural practices.

Hand pulling of weeds where they occur singly or in small patches is a good method of elimination. In the case of taprooted weeds, it is necessary to get at least two-thirds of the root. An asparagus knife is a good tool for this purpose. If the weeds are of a creeping variety, the lawn should be dug up at least two inches beyond the visible weed area. It is wise to scatter a little lawn seed on bare spots after weeding.

Detailed control methods for practically all lawn weeds are described in the *Lawn Care* bulletins listed on page 32.

Pest and Disease Control

With few exceptions there are effective means of controlling practically all insect and animal pests and fungus diseases that damage grass either directly or indirectly. These are described at length in *Lawn Care.*

FALL LAWN TREATMENT

With the advent of the cooler weather of late August or early September comes the best grass

growing season of the year. Warm days, cool nights and abundant rainfall make this an ideal time to remedy the damage of the summer's heat and drouth and to lay the ground work for a better lawn the next summer.

The fall season is the best time to build a deep, strong root system. This can be accomplished with a grass food that contains root feeding elements derived from organic sources.

After feeding, Crabgrass and other weeds should be removed by digging or raking and the surface loosened slightly to receive the seed. It is useless to sow cheap grasses in the fall. They will succumb every winter so the seeding will have to be done all over in the spring.

Leaves must be removed regularly or they will injure the grass by smothering. A light topdressing with compost will be very beneficial as will a rolling to press the seed into the soil.

It is well to mow the lawn rather closely so the young grass will not be shaded too much. This cutting should cease sufficiently early so the grass will go into the winter with a growth of 2 or 3 inches. When growth begins to slow down set the mower at 2 inches so there will be no damage from a sudden heavy frost.

The question is often raised about the value of a winter mulch with such materials as leaves, straw and manures. The evidence is much against their use. They are apt to do more harm than good. The only protection a lawn needs for the winter is against trespassers. If grass is walked on while frozen the footprints are apt to show for months to come.

FREE LAWN CARE BULLETINS

Any of these bulletins pertaining to your lawn problems will be sent without cost on request:

Subject	Issue	Subject	Issue
Ants	Sept. 1930	Moles	June 1931
Buckhorn	Sept. 1929	Moss	Mar. 1929
Chickweed	Aug. 1929	Mowing	Aug. 1932
Chinch Bugs	Sept. 1933	Plantain	Aug. 1928
Compost	Feb. 1929	Rolling	Feb. 1935
Crabgrass	Apr. 1935	Shade	Mar. 1935
Dandelions	Mar. 1938	Webworms	June 1929
Earthworms	June 1930	Soils	Aug. 1937
Grubs	Mar. 1937	Terraces	May 1933
Honeycomb Soil	Feb. 1937	Topdressing	Feb. 1929
Lime	Feb. 1938	Watering	Aug. 1934

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