HAROLD GOETZ

CIRCULAR H-244

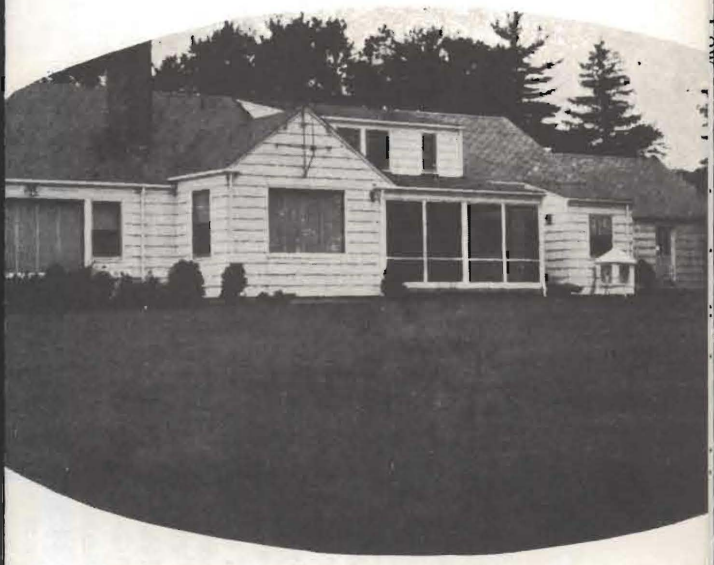
North Dakota State University

Cooperative Extension Service

Fargo, North Dakota

YOUR LAWN...

IT CAN BE BEAUTIFUL



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Time spent in preparing your lawn for seeding is time well spent. The amount of effort put forth before seeding will be reflected in the quality of your lawn for several years.

To have a lasting lawn of quality, good topsoil should cover the surface at least 6 inches thick. Carefully established the grade desired. Smooth the surface with a plank or garden rake. This is the time to fill small depressions and smooth out any irregularities. It will be more difficult to do this after the lawn is established.

Sodding Versus Seeding

Sodding is preferred to seeding when lawn turf is required immediately or where it is difficult to get seed to germinate, as on terraces or steep banks. Sodding is more expensive than seeding.

Good quality sod is not always available. Low quality native sod may contain undesirable grass species (quack or brome grass) and troublesome broadleaf weeds. Costly and disappointing errors, such as this, could have been avoided by seeding of desirable grasses.

Cultured sod is now being marketed in some metropolitan areas. This sod is grown under controlled cultural conditions, guaranteed free of weeds and undesirable grasses and, therefore, is of high quality but expensive.

Sodding may be done any time throughout the growing season if water is available.

Adequate soil preparation is often neglected before laying sod. A sodded lawn requires the same soil preparation as a seeded lawn. Lay sod on moistened soil. Stagger joints and fit the pieces as close together as possible. After laying sod, top-dress lightly with good soil and work top-dressing into joints. Water immediately and keep well watered until it is well rooted into the soil beneath. After establishment, treat the sodded lawn as any established lawn.

What to Seed

Kentucky bluegrass is the best grass for North Dakota lawns. Where bluegrass makes up more than half of the lawn grass mixture, it is meant to take over and dominate other grasses. Buy lawn seed that contains at least 50 per cent or more of Kentucky bluegrass. Creeping red fescue is a desirable grass in that it is more shade tolerant than bluegrass. Thus, both grasses should be included in a good mixture for the average lawn.

Seed mixtures containing more than 10 per cent of annual or short-lived perennial grasses should be avoided. Small percentages of these grasses are beneficial in establishing new lawns since they germinate rapidly and act as a nurse crop. Read the label on the container. Be suspicious of any lawn grass seed bargains. The price of lawn seed is based on the percentage of bluegrass in the mixture.

Native Kentucky bluegrass is known to be adapted to most areas of the state. Many strains of newer bluegrass are being sold locally. Among them are Park, Merion, Newport, Windsor and two of European origin, Fylking and Prato. Park orginated in Minnesota and has performed satisfactorily in North Dakota. Merion bluegrass has not proved outstanding enough to warrant special recommendation. The other above mentioned bluegrass strains have not been grown widely enough to determine their adaptation to all of North Dakota.

Rate of Seeding

Sow plenty of seed. It is false economy to make careful preparations for the seed-bed and then to skimp on either quality or quantity of seed. For most lawn grass seed mixtures, 2 to 5 pounds per 1,000 square feet is adequate. Care in planting reduces the need for heavier applications.

For extremely dry locations, where adequate watering is difficult, a ratio of 2 pounds of Fairway crested wheatgrass to 1 pound of Kentucky bluegrass is suggested. Dry land lawns, where the Fairway crested wheat-bluegrass combination is used, will require at least 3 pounds of the mixture per 1,000 square feet. For you who prefer White Dutch clover in your lawn, 1 pound of clover to 5 pounds of grass seed is about the proper ratio. The use of White Dutch clover is a matter of individual taste.

When to Seed

Dryland lawns are perhaps best seeded in early spring, or just before a rain.

Where water is available, the best time to seed a lawn is when the daytime temperatures are above 70 degrees - usually between May 20 and September 15. In July and August, if daytime temperatures are a bit higher than desirable, more watering will be necessary.

Sow seed evenly on a quiet day. Mechanical seeders are usually available for loan from local firms selling lawn seed. Rake in the seed. Roll, if possible. Water thoroughly at once. If watering by hand, stand on the walk, drive, or around the edge of the lawn area. On warm, sunny days it is necessary to water newly seeded lawns two or three times a day for 15 to 20 minutes at a time. Never allow the seedbed to dry out once it has been watered. Water more heavily and less often as seedlings develop.

Good lawn seed, lightly covered in good topsoil, and with adequate moisture, should give you a green lawn in 10 days if daytime temperatures are 70 degrees or above. Lawn grass that germinates and comes quickly gets the jump on the weeds.

Mowing

For new lawns, wait until the grass is about 3 inches high before the first mowing, but do not let grass get long enough to topple over. Set the mower to cut at least 2 inches high for the first cutting. For established lawns, mow with the mower adjusted to about 2 inches and mow whenever the grass has grown 1 inch above mowing height. Lawns maintained at this length are better appearing than "scalped" lawns. Close clipping removes most of the green blades, exposes the yellowish stems, gives the lawn a parched and hungry appearance, and opens the door for weeds. Taller growth also provides shade, and so lessens direct evaporation of soil moisture. In drouth periods this may mean the difference between saving and losing the lawn.

Keep your mower sharp. A dull mower "chews" instead of cutting the grass. Dull blades, especially rotary blades, can do a lot of damage by tearing up roots and bruising stems.

Since rate of growth may vary so much in different lawns and different seasons, no definite mowing schedule can be given. Lawns in very good condition may have to be mowed every 5 days and some may go as long as 10 days. Let grass make a good growth early in the spring before mowing begins. To clip close and often at this time favors weeds at the expense of grass. In late summer and fall, leave grass longer to store up food for the winter. However, in late October lawns may be mowed very close to facilitate fall or spring raking of leaves. Cutting grass short in late fall also will help prevent damage from fungi and other diseases during the late winter and early spring. Take up clippings at this time.

Mow grass in shaded areas less frequently than the rest of the lawn. Mowing only a few times a season will permit grass to live on many areas where it would die if cut more frequently.

What About Clippings (Thatch)?

On lawns that are well watered and fertilized regularly, grass clippings may become so heavy that they cannot filter down between the blades, or tend to bunch. Remove them. Heavy accumulations of clippings (thatch) can lead to lawn diseases as well as being unsightly. It can choke your lawn by smothering new grass plants.

Light clippings should be left on the lawn (especially new lawns). Not only do they aid in conserving moisture, but also return some nutrients to the soil. Frequent mowing reduces the need for catching clippings. Clippings should remain on the average lawn in North Dakota. Annual spring raking will tend to reduce the total amount, or a light dressing of topsoil will speed the decay of old clippings.

Watering

Proper watering is a major factor in lawn success. The best practice is to soak your lawn until water penetrates the soil 4 to 6 inches or more each watering, rather than to use frequent light sprinklings that merely wet the surface half-inch or inch of soil. Apply about 2 inches of water each time you water. Light sprinklings encourage shallow rooting. In dry weather, these surface roots dry out and die. With liberal watering, roots tend to develop more deeply and are better able to withstand drouth conditions.

MEASURE AMOUNT OF WATER APPLIED - Although you soon develop a practiced eye, do not guess how much water you apply. Set a coffee can out under a typical fall-out area under your sprinkler. Then check the amount of time that it takes to apply an inch of water to a given lawn area.

Despite the convenience of watering in the evening after working hours, it is best to apply water early in the day. Grass that stays wet through the night is more susceptible to diseases.

Well-fed lawns make better use of available water. Lawns cannot respond to fertilizers unless well supplied with water.

Fertilizers

Lawn fertilizer and fine-textured lawn grasses are partners in making a modern lawn. Nitrogen is the most important plant food nutrient for North Dakota lawns. Straight nitrogen fertilizers such as 20-0-0 (ammonium sulfate); or 33-0-0 (ammonium nitrate) are recommended.

Where straight nitrogen fertilizers are used, consider applying a complete fertilizer once every other year. A complete lawn fertilizer is one that contains the elements nitrogen, phosphorus and potassium. A 20-10-5 analysis, for example, contains 20% nitrogen, 10% phosphorus and 5% potassium, a good balance for bluegrass on most soils. Complete fertilizers high in nitrogen will benefit your lawn where deficiencies in phosphorus and potassium exist.

Good lawn fertilizers have analysis similar to the following:

Fertilizer Grades	lbs. per 1,000 square feet
33-0-0 ammonium nitrate	5-7
38-0-0 urea formaldehyde compounds (slow release of nitrogen)	7-10
*20-0-0 ammonium sulfate 27-14-0, *20-10-5, 24-20-0, 23-23-0, or any other mixed fertilizers containing 20 per cent or more of nitrogen	8-10
*10-6-4 or others containing less than 10 per cent nitrogen	20-25

**Note: available in small packages in retail outlets. Those not marked are available in 50 or 80 pound bags, usually from country elevators.*

Time to Apply

One application of fertilizer per year is satisfactory for the average North Dakota lawn. This single application should be made either late fall or early spring when the grass is dormant. Additional fertilizer applications may be desirable during the summer, but more care is required to avoid burning of the grass. Most desirable periods for summer applications are about mid-June and mid-August.

Application

Spread fertilizer with a lawn fertilizer spreader to obtain even distribution. Careful spreading by hand is satisfactory. However, to spread evenly by hand is difficult. Uneven spreading of fertilizer can result in "patchy-looking" lawns. Most fertilizers should not be applied to wet grasses. Apply fertilizer to dry grass and then water thoroughly. The fertilizer is then washed from leaf blades without burning.

High analysis fertilizers are usually less expensive than low analysis types, in that you are buying more available plant food per pound with high analysis fertilizers. The suggested rates show that it is necessary to apply about three times as much 10-6-4 as 24-20-0 to obtain similar results.

What About Aerators? (Compacted Soil)

Lawn areas subject to heavy foot traffic eventually become compacted (especially on heavy clay soils).

Aeration is opening the soil to allow more rapid penetration of water and nutrients, thus reaching the roots of grass plants. This, in turn, will enable the grass to develop the deep root system for which you will be thankful in hot weather, or extended periods of drouth.

If you use a mechanical aerator, use one that removes a plug of soil. Moist soil is necessary for satisfactory operation. However, an aerator should not be used when the soil is "muddy". Aeration is most necessary on heavy soils. Sandy soils may never need aerating.

Soil Additions and Rolling

Topsoil may be added to uneven areas of your lawn. One to two inches of soil can be raked into low areas annually until proper grade is restored without smothering the established grass.

Spring rolling of established lawns is not recommended on heavy clay soils. Compaction of soil can result. Limit rolling to leveling newly sodded lawns, preparing a firm seedbed for new lawns or smoothing established lawns on light soils.

Weed Control

The best weed control is a healthy turf. However, selective weed killers (herbicides) are often necessary to control certain troublesome weeds. Read labels carefully and follow the manufacturer's directions. Use only amine or oil soluble amine forms of 2,4-D herbicides. Protect broadleaf cultivated plants growing nearby. Tomatoes are especially sensitive to fumes of 2,4-D. Hand pull occasional large weeds rather than using herbicides unnecessarily. The information below is brief. For additional information, see Circular A-432 "Weed Control in Lawns".

WEED CONTROL IN THE LAWN

Weed	Remarks	Treatment
Dandelion, plantain and many other broad leaved weeds	Applied during growing season. Spraying temperature 65° F - 85° F.; lower temperatures less effective. High temperatures more danger of damage to susceptible plants.	2,4-D amines or oil soluble amines.
Chickweed, ground ivy, knotweeds	Use same precautions as with 2,4-D	Silvex (2,4,5-TP)
Crabgrass	Applied late fall or early spring before seed germination.	Tupersan, Dacthal, Betasan
	Arsenicals are applied in spring on crabgrass seedlings in one to three leaf stage of growth.	Organic arsenate compounds (DSMA or AMA)

Insects

Lawn insects are not generally a serious problem in North Dakota. Occasionally ants, earthworms (nightcrawlers) and white grubs do create minor problems. All three pests can be controlled by the same chemical compounds:

INSECT CONTROL

Chemical	Rate per 100 sq. ft.	Comments
Chlordane 10% dust or granules	1/4 lb.	Dusts and granules can be mixed with lawn fertilizer and applied with a fertilizer spreader. Premixed commercial fertilizer-insecticide products are presently available to the homeowner. Whichever method is used, water lawn thoroughly after application of chemicals or fertilizers.
Chlordane 50% wettable powder	3 tbls./gal. water	
Chlordane 45% emulsifiable concentrate	5 tsps./gal. water	
Diazinon (Spectracide) 25% emulsifiable conc.	5 tbls./gal. water	

Caution: Follow directions on the container.

Lawn Diseases

Occasionally some lawns in North Dakota are affected by various diseases. The following information is brief; for more information, see the following publications:

1. Lawn Diseases in the Midwest, North Central Regional Extension Publication No. 12, 1961.

TURF DISEASES AND CONTROL

Disease	Symptoms	Treatment
Snow mold	Dead areas in early spring. Pink or gray mold often present while snow is melting.	Cadmium-containing fungicides. Apply in late fall just before snow cover.
Bluegrass leafspot	Brown spots on leaves.	Most turf fungicides will control this disease.
Melting out	Irregular dead or dying patches.	Most turf fungicides will control this disease.
Brown patch	Circular brown patches, water soaked leaves which dry and wither.	Acti-dione RZ.
Dollar spot	Often as dead areas a few inches in diameter, but can be larger.	Acti-dione RZ, Dyrene, and cadmium-containing fungicides.
Rust	Reddish brown rusty spots on leaves, especially on Merion bluegrass.	Promote rapid growth with fertilizer and water. Sulfur and Acti-dione RZ will control.
Powdery mildew	Silvery white growth on leaves. Most common in shady locations.	Sulfur or Karathane.
Fairy Rings	Rings of darker green turf in which mushrooms appear. Dying or dead grass follows.	Early detection and eradication using fumigation is best.

Renovating Old Lawns

Whatever is causing a lawn to fail should be determined and corrected. Reseeding alone may not greatly improve an old lawn, for the new plants will do no better than the old ones. It is necessary to improve conditions that will give vigor to both old and new grass plants.

Poor growth of lawns is not necessarily due to lack of fertility. Other conditions that commonly cause poor growth are: poor varieties, soil compaction, insect or disease damage, dogs, too much shade from trees and buildings, over-watering, not enough water, or use of saltry water. The topsoil and subsoil maybe too sandy, too gravelly, too salty, contain building material wastes or be poorly drained. Improper mowing and watering are comon faults.

Aerating, dressing with topsoil, fertilizing, removal of shallow tree roots, treating for diseases and insects are the usual remedies.

Where soil conditions cannot be remedied by the above recommendations, removal of existing soil followed by the preparation of a good seedbed and establishment of a new lawn may be the only solution.

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