

MSU Extension Publication Archive

Archive copy of publication, do not use for current recommendations. Up-to-date information about many topics can be obtained from your local Extension office.

Site Preparation for Lawn Establishment

Michigan State University

Cooperative Extension Service

Thomas M. Smith, Department of Crop and Soil Sciences

Paul E. Rieke, Department of Crop and Soil Sciences

John E. Kaufmann, Department of Crop and Soil Sciences

Kenyon T. Payne, Department of Crop and Soil Sciences

June 1980

2 pages

The PDF file was provided courtesy of the Michigan State University Library

Scroll down to view the publication.



Turf Tips

for the homeowner

Extension Bulletin E-1401

File 29.22

June 1980

Site Preparation for Lawn Establishment

By Thomas M. Smith, Paul E. Rieke, John E. Kaufmann, and Kenyon T. Payne
Department of Crop and Soil Sciences

Proper establishment is a critical factor in developing a dense, healthy lawn. One of the most important steps in establishing a new lawn is correct preparation of the site. However, many lawns are established on inadequately prepared, highly compacted topsoils or subsoils. The following sequence is recommended when preparing the site for seeding or sodding.

1. Soil Sampling

Collect soil samples to a depth of 2-3 inches from 20 locations at the establishment site. Use clean equipment when sampling. Mix the 20 subsamples well. Air dry about one-half pint of soil, package securely, and send it to your local County Cooperative Extension Service or a reputable laboratory for testing. The test report will indicate the soil acidity level, and the phosphorous and potassium content. Sample again after the topsoil is modified in any way. Further information on soil sampling can be found in Extension Bulletin E-498, "Sampling Soils."

2. Kill Perennial Weeds

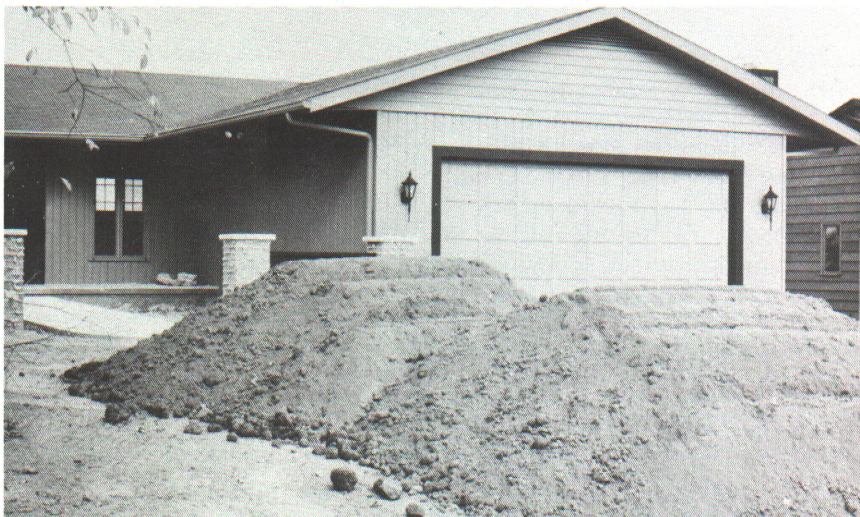
It is important to kill perennial grassy and broadleaf weeds with a recommended non-selective herbicide prior to disturbing the soil (See Extension Bulletin E-643, "Lawn Weed Control.") A subsequent application of the herbicide may be necessary prior to establishment if additional weeds have germinated. Tilling the area to control perennial grasses is usually not effective.

3. Remove Debris

Remove all debris on and below



Problems arise when buried debris is not removed prior to establishment.



Removal of the topsoil is recommended prior to any excavation or extensive grading.

the surface, including rocks, roots, stumps, piles of sand and gravel, buried wood, shingles and other construction materials.

4. Grading

The topsoil, if of desirable texture and adequate quantity, should be removed and stockpiled nearby

prior to building construction or any other procedure requiring excavation or extensive grading. The slope away from buildings should be more than 1%, but normally should not exceed 25%. Contours can be added on the site, but avoid areas where standing water may collect. Areas immediately surrounding established trees should be

left at the original grade. Be careful not to damage the existing root systems.

5. Deep Cultivation

On many sites severe compaction has occurred due to the heavy equipment required in construction. This will often lead to serious maintenance problems such as diseases, poor rooting, and proneness to wilt. If the topsoil has been removed, cultivate the site to a depth of 4-8 inches to lessen compaction and to mix different layers of soil.

6. Subsurface Drainage

In addition to grading for adequate surface drainage, it may be necessary to install subsurface drainage in poorly drained soils or where impermeable soil layers are present. Subsurface drainage should normally be installed by a contractor.

7. Spread Topsoil

If the topsoil is a clay loam, loam, sandy loam or loamy sand texture, no soil modification should be necessary. (If subsoils or textures other than the above are present, consult "Soil Modification for Lawn Establishment.") Spread the stockpiled topsoil back onto the site to a depth of 6 inches or more. Tilling a portion of the topsoil into the upper 2-3 inches of subsoil will help avoid the formation of distinct soil layers which may interfere with water movement.

8. Soil Settling

After the topsoil is spread back on the site, allow the area to settle for a period of time prior to establishing the final grade. Any underground installation (irrigation, special lighting, etc.) can be done at this time, but avoid mixing subsoil from the trenches with the topsoil.

9. Nutrients & Lime

Follow recommendations based on soil tests for lime, phosphate and



Final soil preparation requires repeated raking and leveling.



Improper grading causes water to collect on the site.

potash needs. The amount of nitrogen to be applied will depend on the type of establishment. For seeded areas, apply 1½-2 pounds of actual nitrogen per 1000 square feet. For areas to be sodded, this amount should be reduced to ½ pound of actual nitrogen per 1000 square feet. If no soil test was obtained, a general recommendation is to apply 15 to 20 pounds per 1000 square feet of 1-1-1 ratio fertilizer (such as 10-10-10) when seeding lawns. When sodding, use a fertilizer low in nitrogen and high in phosphorous and potassium (such as 5-20-20) at 10 pounds per 1000 square feet. Incorporate the nutrients and lime into the upper 3-4 inches of topsoil.

10. Final Grade and Soil Preparation

Establish the final grade one inch below adjacent sidewalks and drive-

ways. The seedbed should be firm enough to prevent a human from sinking more than ½ inch. Several irrigations or rainfalls will aid in settling the soil. Repeated raking and leveling are necessary to avoid depressions which may allow water to pond. Make sure water drains away from any buildings. Rake the area in order to obtain ½ inch of loose granular soil. This can best be achieved when the soil is moist but not saturated.

Conclusion

Many future problems will be avoided if lawn establishment is done properly. Shortcuts save time now, but may ultimately lead to costly maintenance problems or an unsatisfactory lawn. All of the procedures listed are necessary in order to obtain the best lawn possible. Do it right the first time!

MSU is an Affirmative Action/Equal Opportunity Institution

Cooperative Extension Service Programs are open to all without regard to race, color, national origin, or sex. Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Gordon E. Guyer, Director, Cooperative Extension Service, Michigan State University, E. Lansing, MI 48824.

1P-10M-6:80-UP, Price 15 cents. Single copy free to Michigan residents.

Michigan State University Printing