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Sod Production and Topsoil Loss

The present day concern over topsoil loss to erosion has expanded in some areas to a concern over soil depletion by sod production. If fact, some sod producers claimed soil depletion allowances in 1978 before the American Sod Producers Association convinced Congress that such allowances did not fit the practice of harvesting sod. Had ASPA not obtained this exemption for sod producers, they would have been forced to implement an inventory system of accounting for tax purposes.

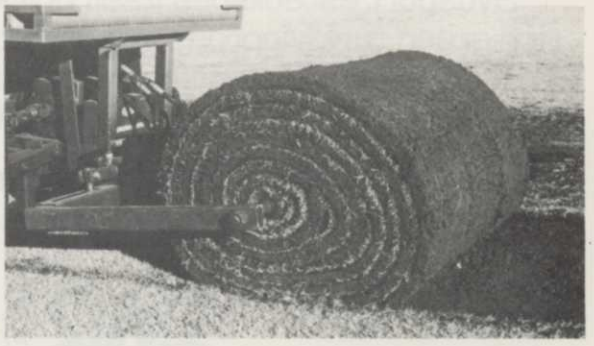
Great strides have been made in reducing sod thickness over the last 20 years. Researchers and sod growers have proven the benefits of thinner sod. Thinner sod roots more rapidly and cuts transportation and handling costs. Sod thickness is today primarily a function of sod strength. Knives are set just low enough to prevent scalping on uneven spots in the fields.

Research by Skogley and Hesseltine at the University of Rhode Island has identified harvesting method and the age of a stand as the main factors in sod thickness. Three-year-old sod could be cut at slightly thinner thicknesses than two-year-old sod. The machinery's ability to handle uneven fields can reduce the thickness further.

Actual blade adjustment may seem minute, but a 1/16-in. higher setting could save six tons of soil loss per acre.

Production of sod, as compared to other agronomic crops, actually improves the organic matter content of the soil by two percent per harvest. This is due to the fact that most of the turfgrass roots remain in the soil after harvesting and decompose.

Skogley and Hesseltine found that sod production removed less topsoil than many other crops. Wind and water erosion are greatly reduced by grass cover as opposed to open crops such as corn, soybeans, and cotton. Planting winter wheat often provides farmers with reduced winter topsoil loss.



Topsoil removed *during sod harvesting is less than many conventional agricultural crops.*

When this low-growing, Swedish lawn beauty first stepped into the turf world it revolutionized the lawn industry.

Now another step! Fylking Kentucky bluegrass costs less than most other elite bluegrasses!

Fylking establishes fast, develops a greater density of rhizomes and root system. Fine-textured, velvety green, Fylking performs well when cut low (even low as one-half inch), and may need less mowing. Amazingly tough, Fylking Kentucky bluegrass has improved disease resistance to leaf spot, stripe smut, stem rust and leaf rust, as rated in tests by many major universities and institutions. Physically pure, genetically true seed, Fylking contains no annual bluegrass (Poa annua), bent grass or short-awned foxtail.

Take a giant step ahead by using Fylking as the backbone bargain of your next lawn turf mix. Ask for the Swedish beauty, Fylking Kentucky bluegrass at your local wholesale seed or sod distributor.

FYLKING KENTUCKY BLUEGRASS U.S. Plant Patent 2887

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ECLIPSE Kentucky bluegrass covers the roof and is destined to be a leader. It germinates fast and performs well in sun or shade. Shade test trials proved ECLIPSE better than many varieties on both East and West Coasts. Developed at Rutgers, ECLIPSE has excellent stem rust resistance, improved resistance to the Fusarium blight and the dollarspot disease. Dark green, medium-textured ECLIPSE is a good base for sod blends and turf seed mixtures.

ECLIPSE Kentucky bluegrass seed available exclusively from:

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850 N. Old 23, Brighton, MI 48116

GARFIELD-WILLIAMSON
1072 W. Side Ave., Jersey City, NJ 07306

JACKLIN SEED COMPANY
W. 17300 Jacklin Ave., Post Falls, ID 83854

NUNES TURFGRASS, INC.
2006 Loquot Ave., Patterson, CA 95363

TWIN CITY SEED COMPANY
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P.O. Box 511, Lindsay, Ontario K9V 4S5

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soil if soil tests indicate a need. It is also a good time to mix in potassium and minor elements. Nitrogen need not be added at this time.

If there is a delay between rough grading and seeding, weeds will have emerged. Although the process of fine grading will kill most of the weeds, persistent grassy weeds can cause problems later. Most herbicides take two weeks or longer to dissipate after application. Roundup can be used on problem weeds if necessary and will dissipate within three days. Soil fumigants can be used for control of weeds, nematodes and insects if desired. Seed can usually be planted two or three days after fumigation. An advantage of fall seeding for cool-season grasses is the aggressiveness of the turfgrass in relation to broadleaf weeds during cooler, sunny days. Spring seedings face a strong challenge from broadleaf weeds during summer. Spring is often the preferred time for warm season grass seeding.

Just prior to seeding a complete fertilizer should be applied. Approximately one pound of nitrogen per 1,000 square feet can be soluble in form, with the remainder in slow-release form. Enough slow-release nitrogen should be applied to delay a second fertilizer application for six to eight weeks. The starter fertilizer should contain adequate levels of phosphorus and potassium since the seed is close to the surface. The turfgrass won't take advantage of the phosphorus mixed into the topsoil beforehand until it roots. Phosphorus will not leach or move to the surface.

Seeding

Two overlooked factors in seeding are the number of seeds per pound and the difference between spreading and bunch type grasses. One misconception in seeding is the idea that if one rate is good, a higher rate is better. This is related to the idea that seed is cheap in comparison to proper soil preparation.

A good lawn is constructed like a good house, from the foundation up and with good materials. Short cuts in the beginning cannot be overcome later. Constant repair could keep the lawn alive but can easily exceed site alterations or soil amendment in cost.

Assuming the seedbed was properly constructed, the seed rate should be determined by seed count. Seed count varies according to species and cultivar. (see table). Beard in his textbook TURFGRASS SCIENCE AND CULTURE specifies the number of seeds per square inch for North American species. If that number is applied to the total area of the seedbed and divided by the number of seeds per pound, a seed rate in pounds per acre can be determined. Each component of a mixture can be figured by seed count to derive an appropriate rate for a mixture. Lower rates for spreading grasses can be used. Sod producers often use lower rates for Kentucky bluegrass than a landscape contractor would.

For bunch type turfgrasses, such as tall fescue and perennial ryegrass, seed count, adjusted by germination percentage, should be slightly higher than the number of shoots present in a mature stand. This would mean roughly 15 seeds per square inch for tall fescue and perennial ryegrass, which works out to be about eight pounds per 1,000 square feet. Ken-

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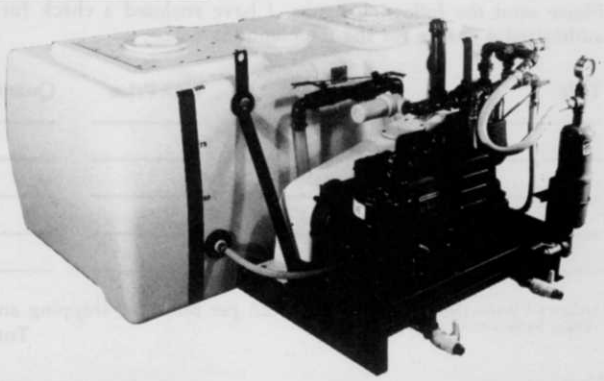

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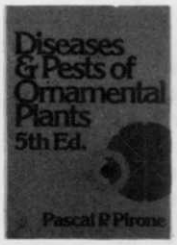

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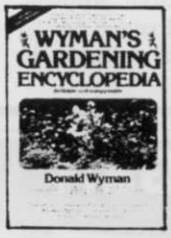

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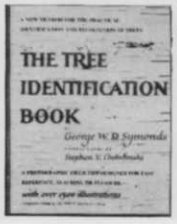

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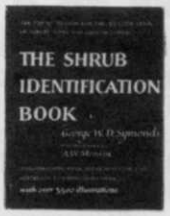

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tucky and rough bluegrass can establish satisfactorily at one pound per 1,000 square feet. Bentgrass will succeed at one half pound per 1,000 square feet.

Higher seeding rates can actually cause the turfgrass to crowd itself and to compete for light and nutrients. Weakened seedlings are more prone to disease and insects than seedlings from correct seed rates. The hurry to establish a turf cover may not be worth the weakened turf caused by higher seed rates.

High seed rates are not insurance. The recommended rate is also the cheapest rate. Excessive amounts of seed discourage the use of improved cultivars due to cost. The cost of tall fescue is not a great deal cheaper when the seed rate is multiplied by the cost per pound.

If erosion by rain or wind is a concern with the seed rate, the correction should be in the method of seeding or in the use of mulch rather than the increase in seeding rate. If slopes are extreme, netting or sod should be considered over standard seeding.

For best germination seed should be covered with one quarter to one half inch of soil. Surface seeding is not as effective. Soil retains moisture better than most mulches and supplies the seedling with water following germination. If a mixture of seed is used, a centifugal seeder will not provide even distribution of all seed types. Drop spreaders or a cultipacker are preferred. The seedbed can be rolled after seeding to improve soil/seed contract.

Many types of mulches are available for water retention and erosion control. Rates vary with the product. Straw and an asphalt binder can be used. Clean straw must be used to avoid contamination by forage grasses.

Fall is the preferred time to seed. Rainfall, temperature and other factors cause this to be the best time. Seeding at other times will require backup irrigation, greater weed competition, and higher seedling mortality. Sod may be a better choice for late spring and early summer lawn installation.

Sod Transplant Rooting Characteristics of Several Kentucky Bluegrass Cultivars/(Transplant Rooting Measurements Were Made 21 Days After Sod Placement)

High	Intermediate	Low
Merion	Baron	S. Dakota
Touchdown	Majestic	Newport
Adelphi	Fylking	Cougar
Victa	Park	Delta
Glade	A-34	Galaxy

(Study conducted at the University of Nebraska, R.C. Shearman)

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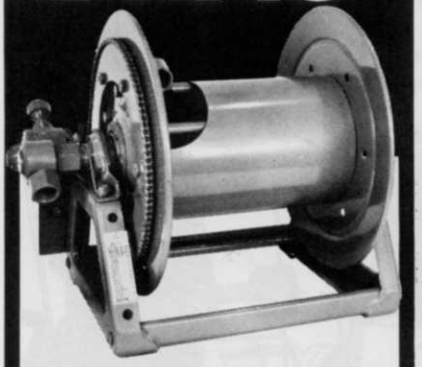

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Sod Installation

Sod, the instant lawn, is the fastest method of lawn establishment available. It is also the most expensive.

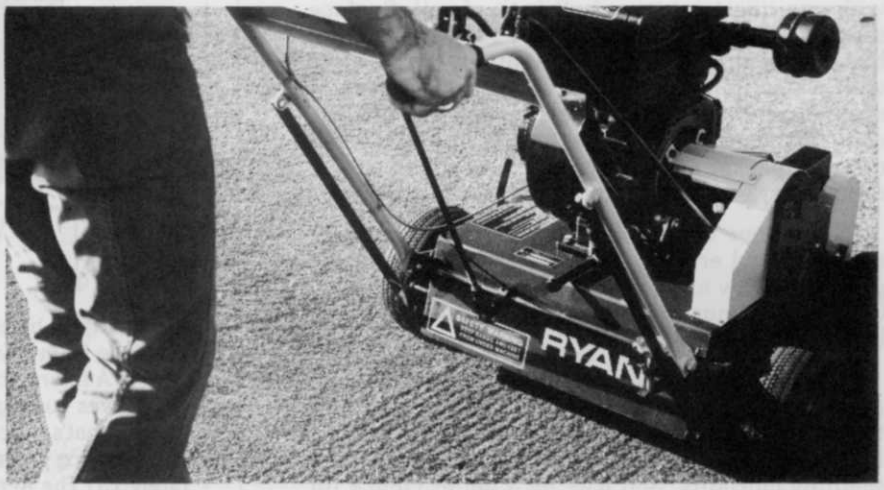
Soil preparation is the same as for seed. Sod must be handled quickly and kept moist. The best sod for a site is one that was grown on soil of the same texture. The soil should be sprayed lightly just prior to laying the sod. After the sod is down and trimmed, it should be rolled and perhaps topdressed at edges and joints if necessary. The sod should be soaked thoroughly two or three times per week for at least four weeks. Some turfgrass sods knit more rapidly than others. These sods should be specified for areas where use is anticipated soon after installation, such as athletic fields or greens.

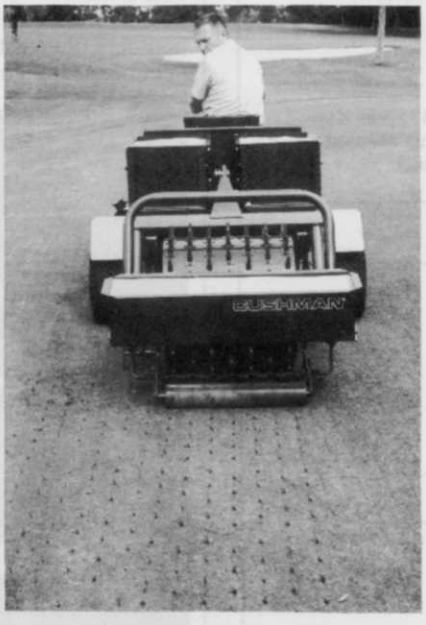
Sod should be irrigated regularly throughout its first season. It has received high levels of maintenance at the sod farm and has adjusted to frequent water and feeding. Sod producers select aggressive cultivars for fast knitting and growth. Like any fine lawn, sod represents a commitment to maintenance and must receive it to remain healthy. Sod in shady areas will take longer to knit than in full sun. Sod for shaded areas should contain shade tolerant cultivars.

Sod can be staked to slopes where erosion and seeding failure are more likely. Ditches designed to carry infrequent runoff may also be sodded.

Vegetative Planting

Vegetative plantings can produce a mature turf stand more rapidly than seeding. They too cost more than seeding, but less than sodding.





Verticutting *(above) is an essential step in lawn renovation to obtain satisfactory seed/soil contact and to avoid seed germination in the thatch layer.*

Aerification *(bottom) improves drainage and air penetration and reduces the chance of compaction by traffic. One extra step is to sand topdress into holes.*

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Labor needs are greater than seeding.

Once again, site preparation is the same as for seeding. Sprigs are planted in 8 to 12 inch rows in three-inch deep slits. Two to four bushels of sprigs are needed for each 1,000 sqaure feet. Stolonizing involves broadcasting stolon segments onto the prepared seedbed. The stolons are then topdressed with fine soil of the same origin as the seedbed. Broadcast planting takes five to ten bushels of stolons per 1,000 square feet.

Plugging is a third alternative. Like sod, best results are obtained if the soil in the plugs is similar to the seedbed. Rows 12 to 16 inches apart are planted.

Shade, lack of moisture, and inadequate fertilization will slow the spread of the vegetative material. Warm-season grasses have the advantage of remaining aggressive in comparison to many weeds during warm months. Vegetative plantings are monostands. Stolons of other grasses can infest a planting, especially in broadcast planting. Nurseries are certified by many states to assure that vegetative material is only of the desired type for the particular job.

Renovation

Renovation is becoming more popular as a method to improve existing turf stands. Roundup has shortened the process with its near lack of residual activity.

It is done either by seeding or sprigging into existing turf stands that have been treated. Soil improvement is limited to aerification and topdressing if done. Thatch should be removed with a thatcher or verticutter. Cores should be broken up and a starter fertilizer applied. Seed is applied and brushed or rolled to assure surface contact. If preferred, the seed could be lightly topdressed.

The area should be watered just as a normal seedbed following seeding. The existing vegetation provides some protection against erosion but does restrict full light from reaching the seedlings. Shaded areas may not respond to renovation. Soil is not appreciably better than before renovation either. It is a partial solution and may not reduce maintenance levels or correct basic soil deficiencies.

Overseeding

Overseeding for winter transition or turf improvement is perhaps the fastest growing use of turfgrass seed. It is renovation without killing the existing turfgrass.

Cool-season turfgrasses are overseeded into warm season grasses as they go dormant in the winter. Turf texture and color are retained throughout the winter months. Upon return of warm weather, the warm season grasses come out of dormancy and dominate the cool season turfgrass.

Overseeding with similar turfgrasses is also feasible. Thin stands of Kentucky bluegrass can be verticut, closely mowed, and seeded with improved varieties. This is a less expensive way of adding disease or shade tolerant cultivars to older bluegrass stands.

High rates of seed are used in overseeding. Mortality is higher for seedlings in overseeding. Seeding rates double that for regular seed establishment are common. Seed can be lightly topdressed. Traffic should be restricted in the area if possible. In some cases fungicides are applied soon after overseeding to improve germination and survival.

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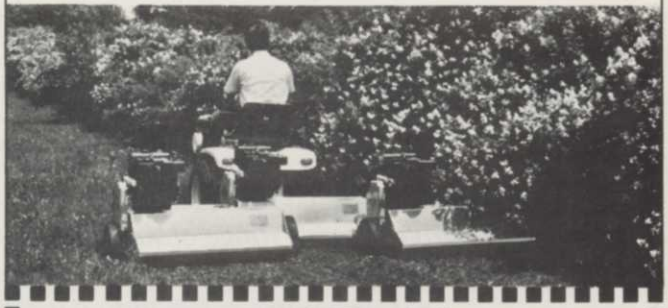

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