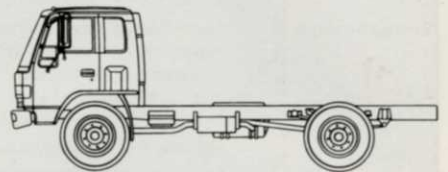


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 **FORWARD
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Circle No. 118 on Reader Inquiry Card

Cool-season insect control strategies

Pest	Spring April-May	Summer June-August	Fall-early winter Sept.-December
Chinch bugs	When summer damage expected, preventive application of liquid or granular Dursban (1 lb. ai/A); Triumph ¹ (1 lb. ai/A) may be used as soon as bugs are active. Complete applications of insecticides by first week in May.	Treat before severe injury with Dursban (1 lb. ai/A); diazinon ^{**} (2.5-5.5 lbs. ai/A); Crusade ² (3-4 lb. ai/A) or other labeled insecticides.	Treat if needed. Generally, infestation not high enough to warrant insecticides.
Billbugs	Same as for chinch bugs.	Treat at grub rates with Triumph ¹ , diazinon ^{**} , Turcam, Mocap or Sevimol. App. in mid-late June most effective. Irrigate following application.	Treatment usually not appropriate at this time.
Sod webworms	Overwintered larvae can cause damage in April or May. When necessary, apply diazinon ^{**} (5 lb. ai/A); Triumph ¹ (1 lb. ai/A); Dylox or Proxol (6-8 lb. ai/A). Crusade ² (3-4 lbs. ai/A) Use flush of water/liquid detergent to scout for infestation level.	Apply when damage is seen, or larvae are present. Use Dursban (1 lb. ai/A), Triumph ¹ (1 lb. ai/A) diazinon ^{**} (5 lbs. ai/A); Sevin-Sevimol (6-8 lbs. ai/A); Proxol-Dylox (6-8 lbs. ai/A); Crusade ² (3-4 lbs. ai/A) or other labeled products.	Larvae cause little damage at this time. Treat in Sept. to reduce spring population.
Cutworms	Use insecticides that are effective against sod webworms. Apply late in the afternoon. Do not irrigate after liquid applications. Irrigate granular applications.	Use Orthene (1-3 lbs. ai/A); Dursban (1 lb. ai/A); Triumph ¹ (1 lb. ai/A); Proxol-Dylox (8 lbs. ai/A); Crusade ² (3-4 lbs. ai/A) Do not irrigate after liquid applications. Irrigate granular applications.	Same as for summer.
Greenbug aphid	Aphid numbers too low to detect.	Orthene (1 lb. ai/A); Dursban (1 lb. ai/A); diazinon ^{**} (2.5 lbs. ai/A)	Severe infestations may occur as late as Dec. Use same insecticides as in summer.
Grain mites	If treatment is needed, use liquid diazinon ^{**} (2-3 lbs. ai/A) or Dursban (1 lb. ai/A). Avoid repeated use of Sevin-Sevimol.	If needed, use spring treatment.	If infestations develop in December, use summer treatment.
Grubs	If treatment of overwintered grubs is needed, apply when all grubs are in the first two inches of surface soil. General or spot treatment with Triumph ¹ (2 lbs. ai/A); Oftanol, Sevin-Sevimol or Mocap (5 lbs. ai/A) or Turcam (2-4 lbs. ai/A) may be used. Crusade ² (4 lbs. ai/A). Irrigate as soon as possible after application. Green June beetle larvae are difficult to control at this time. Sevimol (2-4 lbs. ai/A) may be effective.	Existing grubs found in July or August may be treated with Triumph ¹ , Dylox, Proxol, Turcam, Oftanol, Sevin-Sevimol or Mocap. Apply at label rates. Crusade ² 4 lbs. ai/A. If soil and/or thatch is dry, irrigate thoroughly before and as soon as possible after app. Treat green June beetle with Sevin (2-4 lbs. ai/A)	Treatment can be made as late as mid-late Sept. as long as grubs stay in first inch of surface soil. Triumph ¹ , Mocap, Dylox-Proxol at label rates may be effective
Black turfgrass ateniaus	Dursban (1-2 lbs. ai/A) applied to fairways in April for control of overwintered, egg-laying adults, reduces potential for summer larval infestations. Retreatment after two weeks will provide best control.	If preventive applications were not made, spot or generally treat with Triumph ¹ (2 lbs. ai/A); Proxol Dylox (8 lbs. ai/A); Turcam (2-4 lbs. ai/A); Crusade ² (4 lbs. ai/A); or Mocap (5 lbs. ai/A) as needed.	Undeveloped larvae die with development of ground frost.

¹ For use only by commercial lawn pest control personnel, and only on golf course tees, greens and aprons, and on sod farms. See soil restrictions.

² For use in professional turf areas such as golf courses and commercial sod.

^{**} Diazinon may not be used on golf courses of sod farms.

Source: Dr. Niemczyk

NEW FROM TURF-SEED!

MOW-LESS

Brand Tall Fescue Blend



Dark blue-green MowLess blend stands out against a Southern California background. Drought and heat tolerant Mow-Less offers year-around color in areas not before considered possible.

MOW-LESS SAVES YOU MORE

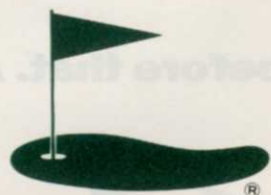
- Lower vertical growth means less clipping removal!
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- Natural insect and disease resistance reduces chemical tools.
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Mow-Less is a blend of the latest generation of dwarf tall fescues. Today, Mow-Less is composed of Silverado, Tomahawk (5DX), Monarch and Eldorado. As newer varieties are developed, like 5PM and 59D, they will be included in Mow-Less.

The components of Mow-Less all contribute dark blue-green color, heat, drought, shade and insect tolerance ... naturally. Mow-Less has made inroads into areas that tall fescue has not traditionally been adapted. Is this the start of something big? We think it's the start of something small ... with a big savings in mowing.



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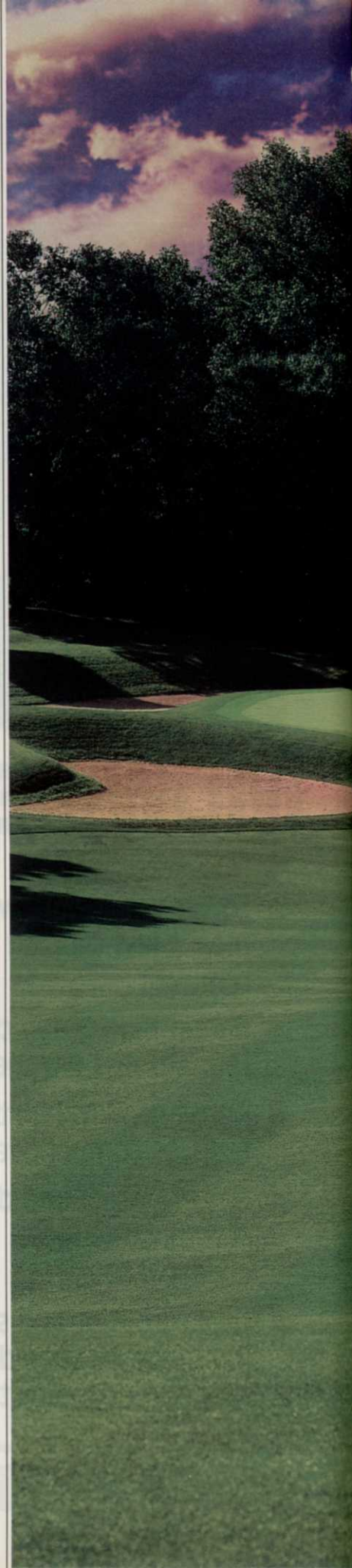
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As if that weren't enough, consider the fact that BAYLETON is systemic. Which translates into longer control.



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It may be the most consistently rewarding choice you make.



Sodding vs. seeding: what's the best bet?

by Ronald C. Smith, Ph.D.

■ A healthy stand of turfgrass controls soil erosion, reduced dust, controls soil temperature, recharges groundwater, and reduces noise levels. In addition, it simply looks great, setting off a well-designed and installed landscape planting.

The four ways in which turfgrass is established are: seeding, sprigging, stolozing and sodding. But no matter how you intend to establish turfgrass, proper soil preparation goes a long way to assuring success (see sidebar).

Seeding—To establish by seeding, here are some helpful hints:

● **Buy quality seed.** Purchase seed based on purity (the percentage of pure seed of the species being planted) and germination (the percentage of that species that can be expected to germinate). The higher these percentages are, the better; and the lower the "inert matter," "weed seed" and "other crop" that shows up on the label, the better. This is not the place to cut corners.

● **Apply the seed at the proper rate** for the species: Kentucky bluegrass at 1 lb./1000 sq.ft.; tall fescue or perennial ryegrass at 7 lbs./1000 sq.ft.; fine fescues at

3.5 lbs./1000sq.ft. In the contracting business, the tendency is to go heavier when in doubt, pushing the seed count to 25 to 30 seeds per square inch. This results in an excellent flush of dense growth, but creates problems with maturation of the stand, leading to possible die-out from diseases.

The methods of seed application vary widely—from a simple drop spreader, to a cultipacker, or to a hydroseeder (see chart).

Sodding—All four types of sod—mineral or upland grown sod, peat sod, washed sod, and biosod—result in an "instant lawn" which provides immediate soil stabilization.

Sodded turfs, like those that are being established from seed, need irrigation for successful establishment. With mature, properly harvested and handled sod, less overall water is needed than the seeded sites. This requires controller adjustments on the part of the contractor, or educational efforts directed at the property owner, to reduce watering frequency once the sod has rooted in.

Sod that is originally weed-free is a commonplace expectation from quality sod growers, thanks to good management practices and intelligent use of herbicides

Smith: Buy seed based on purity, germination



on their part. This virtual elimination of weeds for at least a year, if not indefinitely, is in stark contrast to the landowner needing repeat applications of herbicides for anywhere from one to three years before satisfactory control is achieved.

The professional sod grower has the seeding rate down to a science, resulting in a quickly matured sod that efficiently uses fertilizer and water, competitively crowds out many weeds, and has essentially no disease problems.

Modern sod harvesting equipment carefully cuts at a uniform thickness—as thin as possible to allow for quicker establishment—so the end user has a smooth, finished surface, even before rooting takes place.

Growers like Harley's Sod of North Branch, Minn., track results from turfgrass researchers at regional universities. This allows them to continually improve their seed blends and mixes, selecting grass cultivars that have proven to have the most enduring qualities for their

Preparing the seedbed

■ Since the landscape contractor often inherits a property where construction rubble is buried a couple of inches below the soil surface, here are the proper steps in soil preparation:

1) Deep till any compacted soil or, if the soil is too heavy, use a chisel plow. Follow this with a rough disking or harrowing, leaving the surface rough to allow for a more gradual transition between the topsoil and subsoil. This rough grading establishes the surface drainage patterns for the turf's final grade.

2) Uniformly spread topsoil over the subsoil at a depth of four to six inches—the deeper the better.

To figure out how much topsoil is needed for an area, calculate it on the basis of about 3.5 cu.yds. needed for every 1000 sq.ft. and 1 inch of depth. For example, a 10,000 sq.ft. area, requiring topsoil six inches deep would need about 210 cu.yds. of soil ($3.5 \times 10 \times 6 = 210$).

3) Check the topsoil for pH, phosphorus, potassium and organic matter content. If organic matter is not 3 percent or more, add some in the form of peat or humus, to bring it to between 3 and 5 percent.

4) Remove any rhizomes that may be visible as the topsoil is being graded. These could be the residue of quackgrass

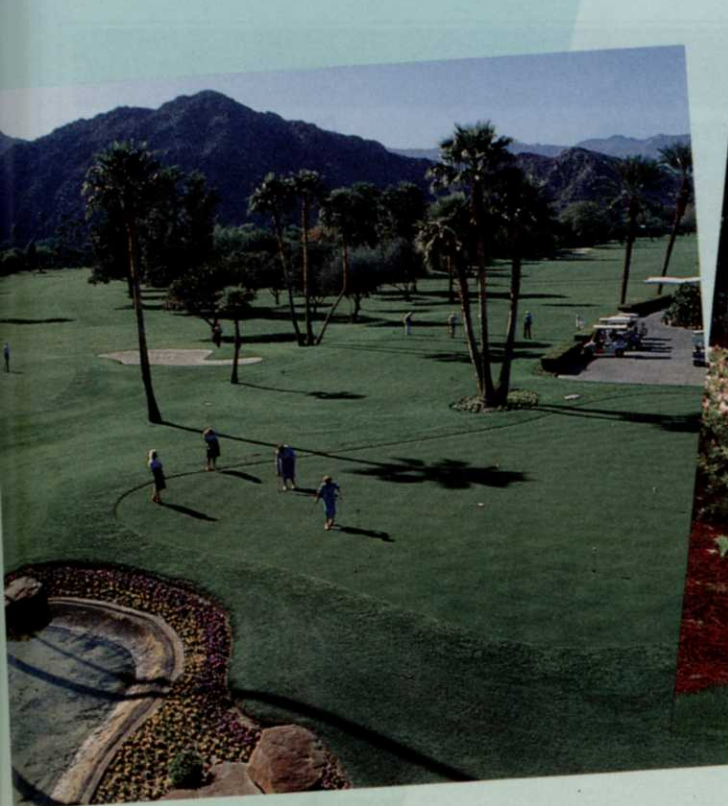
or Canadian thistle and could cause a considerable problem in trying to get a quality turf established. Certainly, any rock or debris should be removed as well. The final surface should be firm, granular and slightly moist to assure good contact between the applied seed or sod.

5) Work in any necessary fertilizer materials, based on soil test results.

It has all too often been noted that this phase of turf establishment is an effort to save money or to win the bid. Suffice it to say that cutting corners here will simply result in compounded problems later.

—R.C.S.

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Search the world over and you'll not find another variety with all the qualities of Oregon-grown Ryegrass.

It's the turf grass that will normally germinate in 7-10 days, show excellent disease-resistance, stand up to heavy hard use, respond rapidly to fertilization and mow beautifully at heights ranging from $\frac{3}{16}$ to $1\frac{1}{2}$ inches.

Ryegrass is available at lawn & garden stores, nurseries and seed dealers as either a utility grass or one that will produce "show quality" turf.

Thoroughbreds of the Ryegrass family are the dark green, fine-bladed turf-type perennials which are marketed under a variety of names. They often form the turf at golf courses and other areas where premium turf is a must.

If you prefer less "showy" turf, the choice may well be Linn Perennial Ryegrass. By comparison with the turf-type Ryegrasses, it exhibits bright green color and has a slightly broader blade.

However, it too will usually germinate in a week or more, is disease-resistant, durable and will quickly develop an extensive root system.

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Slit-seeding results in minimum soil disturbance, greatly reducing potential for off-site pollution and weed problems.

after installation, the watering frequency should be reduced to match the weather conditions and site exposure. This generally

means that most sodded turf areas can

look pretty good on about 1 to 1-1/2 inches of water per week. On a 10,000 sq.ft. lawn, this amounts to between 6,000 and 9,000 gallons of water per week.

● **Shallow perched water tables** where sod is to be laid on heavy clay soil can be avoided by developing a "transition zone." Work about 1/2-inch of peat moss into the top inch or two of soil so that the change between soil types is not so abrupt.

Conclusion—The choice of turf establishment is often a budget-driven process. Seeding may cost one-fifth to one-eighth that of sodding, but I have never known a client who was unhappy with a proper sod job. Neither have I known anyone who

region. Most growers use certified seed which assures genetic purity of the cultivars. Many northern growers use such dependable cultivars as Touchdown, Adelphi, Glade, Rugby, Trenton, Ram I and many others.

Some sodding failures are a possibility, most stemming from poor seedbed preparation (see sidebar). Other problems:

● **Bad edges** that are not firmed enough to make good contact with the soil, resulting in edge drying and weed invasion. This is eliminated by light rolling as the sod is laid.

● **Over-applying water.** Ten to 14 days

look pretty good on about 1 to 1-1/2 inches

Table 1. Methods of seeding

Method	Advantages	Disadvantages
spreaders	lowest initial investment best for homeowner situations	wind can carry seed seed needs dragging and mulching
cultipacker	excellent seed-to-soil contact best in commercial, flat areas leaves neat finished seedbed	seed needs mulching
hydroseeder	fastest method best in difficult-to-reach areas	leaves seed on top of soil

Source: the author



Some tools require a lot of time and manpower ...

Table 2. Preferred methods of establishment

Situation	Seed, spread	Seed, hydro	Seed, cultipacker	Sod
urban construction site				●
shaded construction site		●		
athletic fields	●	●	●	●
mixed-use parks	●	●	●	●
home lawn renovation	● (shaded)			● (open)
highway, right-of-way		●		● (edging)

Source: the author

wanted to withhold final payment until full turf coverage was complete. Payment

decisions are often based on emotional judgment: a positive one results in faster payment than a negative one. Sod usually wins out in this circumstance.

Sod growers are able to produce weed-free sod in a short time, then harvest it efficiently with modern machinery.



Logically, where water is not readily available for establishment, then seeding would work well. Many a site has been hydroseeded initially, then watered until emergence with that hydroseeder—yielding a good stand of

grass for the purpose of that site.

—The author is an extension horticulturist and turfgrass specialist with North Dakota State University, Fargo.

Correction

- The chart accompanying our February spring fertilization article incorrectly listed O.M. Scott & Sons' Poly-S fertilizer as containing methylene urea. Poly-S does not contain methylene urea. It is a polymer encapsulated urea, SCU.

Roundup® herbicide is the ideal management tool when budgets are tight or manpower is limited.

You can cover more ground in the same amount of time it would take using mechanical methods or pulling weeds by hand.

Better yet, Roundup gives you long-lasting control. So crews don't have to keep coming back. You'll be able to allot more manpower to other jobs and save wear and tear on equipment—getting the most out of your budget.

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..... **Some don't.**

You might think using less insecticide means you'll have to put up with more insects. But that's not necessarily the case. Because *how* you use your insecticide is as important as *how much* you use. With

the right tactics, you can use a lot less and still get excellent results.

Here's a good example. By mixing insecticide with insecticidal soap, you can reduce the amount of insecticide you need on your

ornamentals by about fifty percent. Insecticidal soap controls most soft-bodied insects and mites. By adding insecticide, you'll also take care of tougher insects, like scales and worms. University studies



A few ways to balance with your love for the env

