

drive, blade spindles with tapered roller bearings and stagger-mounted caster wheels. Eight low-pressure gauge wheels keep it from slipping on inclines. Contact Woods at 815/732-2141 or Circle No. 213

Independent suspension

Ferris' ProCut™ Z features the IS independent suspension system for increased comfort, extended machine life and greater productivity due to quick operations. The mower's dual-point pivoting front axle keeps all four wheels on the ground. A low



Ferris ProCut Z features new IS suspension

center of gravity is the result of a vertical shaft engine and two 4-gal. fuel tanks. Contact Ferris at 800/933-6175; www.ferrisindustries.com or Circle No. 214

Electronic fuel injection engine option

Walker's Model MT mower is now available with a Kohler 26-hp electronic fuel injection engine to give operators a fuel savings of 30% to 40%. Built-in, auto-type



Walker MT with electronic fuel injection

diagnostics for troubleshooting. Contact Walker at 970/221-5614. Circle No. 215

Rugged features, modern look

Bush Hog's new SQ-600 5-foot wide Squealer with rounded design and powder

coat paint has vertical masts that are 1/2-in. thick and 5-in. wide. Decks and sides are made of 11-gauge welded steel. Visit the Bush Hog Web site at www.bush-hog.com or Circle No. 216

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HOVERMOWER™

By Eastman Industries



Innovative engineering
for effortless mowing

• HM19S-2 - featuring a 19" cut and a 3.8 HP Suzuki 2-cycle engine for heavy mowing



Features:

- One year warranty.
- Rugged, innovative deck design.
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- Reversible steel safety blades for long life and clean, sharp cuts.
- Ergonomically designed 52" handles for long reach.

• HM16R-2 - featuring a 16" cut and a 2 HP Robin 2-cycle engine for light mowing

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87 Bell Street, Portland ME 04103-3457
207.878.5353 Fax 207.878.9109
www.HoverMower.com

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Circle 123

continued from page 51

Compact Viper package

Lesco's Viper midmount zero-turn mower is 78 in. long with a welded steel frame for strength and is powered by a 23-hp Kawasaki twin cylinder OHV engine. Articulating front axle, 54- or 60-in. antiscalping floating deck and twin 5-gal. gas tanks enhance it. Contact Lesco at



Lesco Viper features articulating front axle

800/321-5325 or Circle No. 217

Easy maneuvering

Scag Power Equipment's "Super Z" zero-turn rider maneuvers well as a result of a smooth pump/motor/axle system. An electric blade engagement clutch and tapered roller bearing spindles build productivity.



Scag Super Z with electric blade engagement

Contact Scag at 920/387-0100; visit www.scag.com or Circle No. 218

Convertible hydro walk

Rich Manufacturing's "Convertible" is a

hydro walk-behind that, by pulling a pin, converts to a zero-turn rider. It comes with either a Kawasaki or Kohler engine, and a 48-, 52- or 61-in. deck. Contact Rich at 765/436-2744 or Circle No. 219

Air-cooled models

Dixie Chopper's four new air-cooled mowers are powered by 19- or 23-hp Kawasaki engines for 42- through 60-in. decks. Contact Dixie Chopper at 800/233-7596 or Circle No. 220

Five floating decks

Progressive Turf Equipment's Pro-Flex 120 has five floating 28-in. decks to mow contours not suited for traditional mowers. Decks can be raised hydraulically and locked in place. Contact Progressive at 519/527-1080; www.progressiveturf-equip.com or Circle 221

Front mount mowers

Kubota's 2-wheel or 4-wheel drive F60-Series front-mount mowers are powered by E-TVCS diesels. Single-pedal operated hydrostatic transmission is standard. Top speed in forward is 16 mph, 5.6 mph in reverse. Features include a 4-wheel drive and 60- or 72-in. decks. Contact Kubota at 888/4KUBOTA, x900 or Circle No. 222

Dual drive gearbox system

Toro's new Z Master® Z350 mowers have a Dual Drive System triple gearbox to maximize power to both blades. Available with 20- or 25-hp Kohler engines, mowers go up to 9 mph. Dense Pak® bagging system condenses clippings for maximum capacity. Contact Toro at 800/476-9673; www.toro.com or Circle 223

Z-machines

Gravely's two new zero-turns use either a 20-hp Briggs and Stratton engine or a 20-hp Yanmar liquid-cooled diesel. The 50-, 60- or 72-in. deck; ergonomic design; and



adjustable suspension are featured. Contact Ariens at

920/756-2141;

Gravely zero-turn

www.corporate.ariens.com or Circle 224

Removable fuel tank

Encore's Premier walk-behind mower has a removable fuel tank to reduce spills and refueling downtime, as well as a front-to-back deck stabilizing bar. They come with 32-, 36-, 48- and 52-in. decks. Contact En-



Encore Premier has removable fuel tank

core at 402/228-4255 or Circle No. 225

30+ front-mounted attachments

Power Trac's PT-1430 mower with a 30-hp diesel articulates 45 degrees and oscillates 12 degrees in each direction. Quick-change pins and couplers change more than 30 attachments easily. Contact Power Trac at 800/843-9273 or Circle No. 226

Lots of moves

Grasshopper's 700 Series mowers with Quik-D-Tatch™ decks convert from side discharge to mulching to vacuuming. Hydrostatic direct-drives, 18- to 25-hp engines and front-mounted intakes are features. Call Grasshopper at 316/345-8621; www.grasshoppermower.com or Circle No. 227

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We built our new midmount, zero-turn mower to be best-of-class. The Viper combines a gutsy 25-hp Kawasaki engine with twin unitized hydraulic pump motors and oversized tires. So it runs hard and fast, with terrific hill-climbing ability.

The compact, 78" length and midmount deck means it is maneuverable and easily fits on your trailer. Viper's built on a welded, tubular steel frame that makes it as strong as it is durable. And a floating 54" or 60" deck

lets you finish fast and still provide the manicured look customers demand.

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Circle No. 124 on Reader Inquiry Card



What's new with hydroseeding?

Will this method improve your operations? New technology is making this process more useful

BY AL SCHRAND

The most surprising thing about hydroseeding may be that, while the technology has been widely recognized as the most efficient means of applying seed and mulch for lawn establishment, a 1999 industry survey reveals that only 15% of landscape contractors offer the service.

An industry insider recently commented, "Most landscape contractors still don't understand hydroseeding." One reason may be that hydroseeding seems too complex, too mysterious. Truth is, hydroseeding is basically common sense. And, for those who add the service, it can be extremely profitable.

Hydroseeding 101

The profitability of hydroseeding is based on efficiency, especially attractive in

today's labor-starved market. The primary appeal of hydroseeding for lawn and turf establishment is that it is a single-step, one- or two-man process. Hydroseeding offers distinct advantages when circumstances require minimum labor, uniform growth with high survival rates, rapid erosion control, fast green-up, precise application in tight areas or quick regeneration of difficult areas such as slopes, ditches or berms.

Profit is not the least consideration. Hydroseeding provides the contractor with generous margins depending on applications in residential, commercial or public sectors. It's this profit that has many contractors buying their own equipment and promoting the service, as opposed to subcontracting to hydroseeding specialists when job specifications leave them no other option.

In recent years, a new generation of low-cost equipment has become available, encouraging rapid growth in hydroseeding for landscape applications. Depending on who you talk to, the new equipment can be a double-edged sword. Entry-level equipment costs less to buy, but if results don't live up to expectations, some contractors sour on the technique.

Others work hard at perfecting their performance so that they are soon buying larger equipment to meet demand for hydroseeding. What makes the difference?

While there's no substitute for experience, an understanding of the basics can go a long way toward achieving a substantial profit stream.

What is that green stuff?

Hydroseeding is something like spraying a "stew" on prepared soil. Water is the carrier and fiber mulch is the primary vehicle for delivering seed, fertilizer, tackifier (to help hold fibers together) and other ingredients

directly onto the soil surface. The result is a temporary micro-environment ideal for seed germination and establishment. While mulch fibers come in a range of types, there are two primary kinds: wood fiber and paper fiber. Fiber manufacturers offer various mixtures of the two basic fiber types, sometimes mixed with tackifier.

Selecting equipment

The introduction of lower cost equipment has helped increase the popularity of hydroseeding. One of the key considerations for equipment selection is the type of agitation inside the unit. A consistent slurry is critical to hydroseeding success. Left standing, the suspension of water, seed, fiber mulch and other ingredients will separate into solid and liquid.

There are two primary ways to maintain a consistent slurry in the tank: jet agitation and mechanical agitation. Jet agitation works like the ports in a hot tub.

Mechanical agitation involves paddles rotating inside the tank.

Units with jet agitation are not designed to handle today's thicker, heavier bonded wood fiber matrix mulches often used for erosion control. For these units, cellulose fibers are preferred because they are easier to keep consistently mixed inside the tank. On the plus side, units with jet agitation systems can cost significantly less to purchase and often make good entry-level machines for contractors wanting to test the hydroseeding market with minimum investment.

Hydroseeding units with mechanical agitation systems have a higher initial cost because of the more complex machinery involved. These machines are capable of applying the thickest slurry mixtures, which can result in better erosion and runoff resistance, better germination and survival and faster green-up. These are all key factors that can lead to customer satisfaction.

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Hydroseeding basics

Hydroseeding slurry containing seed, mulch fiber, tacking agents, fertilizer and other ingredients is applied to prepared soil. With reasonable temperatures and adequate watering, turf can be fully established in two to four weeks at about 1/3 the cost of sod, and without weeds.

The distinctive green color is produced by a biodegradable dye. The color is intentionally different than that of natural grass so that operators can tell where they have applied material. The green color fades to tan or light brown within a few days as grass blades emerge and mulch decomposes.



Top, the two-acre landscape at this new suburban Ohio home was barren before hydroseeding.

Left, two weeks later the lawn was lush and green.

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faction, good word of mouth advertising and a growing, profitable hydroseeding business.

Another important consideration in selecting equipment is size. What kind of jobs will you be doing? Units with 300- to 500-gal. capacity can hydroseed an average 4,000-sq.ft. lawn in one load. Many contractors find that smaller units, while less expensive to buy, may hinder productivity. Units in the 600- to 900-gal. range, are ideal for 1/4-acre lots. Units in the 1,000-gal. and larger size allow contractors to do multiple small jobs with one load and to work on larger sites such as sports fields, commercial construction and some small erosion control applications.

When it comes to making an equipment decision, doing your homework pays off. Professional associations can provide a membership directory of noncompeting contractors who you can call with your questions. Your equipment decision will be based on what's most important to you:

initial cost, reputation of the manufacturer, service after sale and advice and support.

Soil preparation

This is one of the best ways to guarantee a satisfied customer. The work pays off handsomely, making it well worth the effort. While every site has its own set of problems, here are some basic considerations.

New construction sites are notorious for leaving little good soil for landscape crews to work with. Adding as much as 2 to 4 in. of topsoil to a tough clay subsoil surface may be required for best results.

Renovation work can also require extensive preparation. The ideal soil will have good drainage, a pH between 6.0 and 6.5, at least 5% organic matter (by volume) and be relatively free of rocks and large stones.

Perennial weeds should be destroyed with an herbicide such as Roundup® or Finale®. A pH level of 6.0 to 6.5 is important for the grass plant to get the most out of soil nutrients. A pH level that is less than 6.0 indicates that there is too much acid in

the soil, and lime should be applied to neutralize it. A pH level greater than 7.0 indicates alkalinity, and sulfur should be used to make the soil more acidic.

Test when uncertain

Soil may also be lacking in certain nutrients. A test provided by a local extension service or soil testing lab will help you determine exactly which fertilizers your hungry soil is craving. Based on test results, your fertilizer dealer can help you choose the right formulation. If needed, organic amendments such as compost, peat or well-rotted manure should be tilled into the soil 4 to 6 in. deep.

For new construction, best results are usually achieved when the rough grade is finished with a landscape tiller or similar tractor-powered unit. These soil preparation tools make short work of rocks, clumps and uneven terrain and provide a smooth, loose soil surface ready for hydroseeding.

Look on the 'Net

New mulch types are constantly being made available from a large number of suppliers. An internet search under "hydro mulch," "mulch fiber," and "hydroseeding mulch" will provide links to most of them. Mixtures of 100% wood fiber, 100% paper fiber and many blends of various ratios in between are available. Some come with various amounts of tacking agent included. A reputable local mulch dealer is the best person to recommend what kind will give you the best results in your area.

One significant advance in hydroseeding technology is the development of a simplified system of hydroseeding additives that takes the guesswork out of slurry mixtures. In addition to water, seed and mulch fiber, there are many potential ingredients in the "stew."

Finn Corp., which originated the hydroseeding technique in 1953, has researchers who sought to create the optimum combination of ingredients from "the seed's point of view." This combination would stimulate germination and optimize erosion and runoff protection during growth. The culmination is what the company calls the HydroSeeder® additive system.

Early results have been encouraging. Research at Southern Illinois University, headed by Dr. She Kong Chong, Professor of Soil Physics and Hydrology, Department of Plant and Soil Science, showed the new combination of additives stimulated uniform germination of fescue seeds in four days. Similar results were seen on slopes of varying degrees with enhanced root development and rapid soil stabilization.

"Inch-a-week" results

A recent application of this new system helped a Cincinnati homeowner save nearly \$10,000 compared to sod installation for a new two-acre lawn. Two weeks after hydroseeding, the grass was two inches high with even coverage, an indica-

tion of uniform germination. The grass blades exhibited an unusual degree of turgidity; that is, after stepping on the grass it springs back upright rapidly. Roots were four inches deep after four weeks and the grass had been mowed lightly two times. Lighter, more frequent mowing reduces stress on new growth, and the clippings add organic matter to the soil.

Homeowners Ken and Jennifer Klekamp commented, "We were surprised to see our new lawn grow in so fast and thick. We could have laid sod for a lot more money, but waiting a couple of weeks was not only worth the savings but worth the time because the results are better."

The new system makes the best use of the single-application benefits unique to hydroseeding. Applied in one step, the "cocktail" ingredients include germination enhancers, soil amendments for nutrient and moisture retention, soluble fertilizers designed for emerging seeds, liquid lime to help adjust soil pH if required and beneficial bacteria to encourage proper nutrient exchange in newly worked soils.

New spray options

A new equipment development helps make hydroseeding equipment more productive. Small units can now be ordered with an attachment that allows spray application of material normally applied in dry form, such as dolomitic lime, fertilizers, pesticides and other dry materials. The idea is to create a liquid suspension or solution with the dry materials to make application faster and combine soil and foliar applications into a one-step operation.

Such an attachment would take advantage of a hydroseeder's combination mechanical agitation and liquid recirculation system to keep mixtures in suspension with no material settling. One nozzle produces a 30-ft. wide "flood" spray that is consistent from edge to edge. Other nozzles are available to fit different needs. The

advantage is that different materials can be thoroughly mixed in a single tank, then applied in one step. A hose attachment is available for treating areas such as residential lawns.

These new mix and spray capabilities allow a customized, one-step spray application for routine turf care. For contractors, it's a labor saving option that makes additional use of the hydroseeding equipment.

Expanding opportunities

Hydroseeding contractors may soon find municipalities much more receptive to their service. A recent change in U.S. Environmental Protection Agency storm water runoff regulations have made it necessary for municipalities to treat bare soil in any area greater than one acre as a means to help control runoff pollution in waterways. This is a change from prior regulations exempting sites under five acres from revegetation treatment.

Because hydroseeding is a fast and economical solution for controlling runoff and erosion, this change may be a source of additional income for aggressive contractors in high-growth areas where municipalities are involved with construction and renovation activities, from roads to parks and recreation, green spaces and other construction projects.

The future of hydroseeding appears strong because it is proven to reduce labor, increase customer satisfaction and provide new options for savvy contractors. **LM**

The author has been a turf consultant since 1988 and is Product Manager for Finn Corporation, Fairfield, OH.

Size Really Does Matter

Check the best new trenchers and mini-excavators

BY CURT HARLER/CONTRIBUTING EDITOR

Did you hear the joke about the landscaper who was so desperate to downsize the openings cut by his trenching equipment that he took the system to a shrink?

Whoever said "size matters" would find general agreement among the irrigation-installation and trenching crowd. In this case, however, the emphasis would be on keeping things small.

Some machines are compact in size, allowing them access to backyards and tight spaces. Others produce a compact trench, doing less damage to the turf and making it easier to repair the scar left behind. Be sure to define what it is you're looking for when you talk to the dealer.

Lastly, consider the overall weight of the machine. Homeowners can get grumpy when the digger leaves behind cleat marks. In fact, they may complain more about that than they do the opening. Make an effort to minimize travel on the grass and make a clean getaway when you're done.

BOBCAT

701/241-8742

infocenter@bobcat.com

Designed for backyard digging and irrigation system installation, the Bobcat 322 from Melroe Co., Fargo, ND, features an expandable

undercarriage that retracts to allow access to small excavation sites and expands to improve lifting and digging capabilities from the side of the machine.

When pulled in, it measures just 39 in. wide; on the job, it expands to 53 in. It offers a 12'5" maximum reach and a digging depth of 7'2". Also available is the 334 (photo) with 59" arm length, dump height of 10'9" and digging depth of 11'. All units can be fitted with a range of job-matched attachments.

Circle No. 271



Gehl Model GE502

Before you buy, do your homework:

- ▶ Look for a self-propelled model.
- ▶ Make sure the machine's size will fit in tight spots on the property.
- ▶ Work with a reliable dealer.

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DIG-IT 800/723-9496

The Towable Backhoe line from Dig-It, a division of Yazoo Power Equipment, Jackson, MS, lets a contractor get into and out of job sites fast and effectively. All can be towed with a half-ton pickup at highway speed, so no trailer is needed.

The Model 148 features retractable drive and caster wheels, trimming width to 35 in. for easy access to yards. Models 148 and 158 both have a digging depth of 8'6" and a digging force of 2,400 lbs. Commercial 18-hp V-twin engines or diesel engines are available.

Circle No. 272

EZ-TRENCH 843/756-6444

The EZ8000 is a versatile trencher/bedder. The EZ8000 from EZ-Trench can be used for standard trenching, burying line while you trench and creating or defining curved landscape beds.

The landscaping blade uses a design that allows the EZ8000 to cut harder soils, pulverize the cuttings and bevel the bed edge to the plantings, while cutting a clean, well-defined border. The trencher is adjustable to depths of 1 in. to 8 in., with widths of 3/4 in. to 2 in. The EZ8000 is powered by either a 5.5hp Honda or a 6.0hp Briggs & Stratton Vanguard engine.

Circle No. 273

GEHL 414/334-9461 www.gehl.com

Contractors looking for a versatile product will appreciate the wheeled Model GE502 from Gehl, West Bend, WI. It is powered by a Yanmar 4-cylinder water-cooled 134-cu. in. Yanmar and 19.7-in. bucket with a 4.6-cu. ft. capacity.

The wheeled Model 652 has a

31hp diesel and is just 64 in. wide and 95 in. high. It also has a 19.7-in. bucket and 4.6-cu. ft. capacity. The dozer blade is 63 in. wide and 17 in. high. The unit weighs 6,845 lbs. with canopy and 7,010 lbs. with a cab. Boom reaches 139 in. and digging depth is 122 in.

Circle No. 274

HINOWA/MERTZ 800/654-6433

www.mertzok.com

Hinowa/Mertz says its new line of mini-excavators can reach places other excavators can't because of its narrow track system. The DM8 model is small enough to fit through a normal door and light enough to haul in a pickup truck. Minimum ground pressure means less damage to yards. All units are powered by water-cooled Perkins diesel engines ranging from 9hp to 43hp, with digging depths from 5' 5" to 10', 6".

Circle No. 275

JCB 410/335-2800 www.jcbna.com

The JCB 210 line of 4x4x4's is a turf-friendly line of compact tool carriers, including a backhoe with plenty of power. Made by JCB,



JCB offers a turf-friendly line of compact tool carriers.

Inc., White Marsh, MD, the line consists of the 210-S backhoe tool carrier, 210-SL loading shovel, and 210-SU utility tool carrier. The line features 4-wheel drive, 4-wheel steer, and four equal-size tires. The backhoe offers 9'9" to 12' digging depth and 4,850 lbs. of lift. The loader has a 0.8-cu. yd. capacity. The utility tractor also has a 0.8 yd. capacity and offers an optional 3-pt. hitch.

Circle No. 276

JOHN DEERE www.deere.com

John Deere, Davenport, IA, offers two backhoe choices for compact utility tractors. The 47 Backhoe for the 4200, 4300 and 4400; and the 48 Backhoe for 4300, 4400, 4500, and 4600 feature an exclusive new mounting system that speeds up and simplifies the hooking of the backhoe to the tractor.

Both offer two-bar linkage on the bucket with 180° rotation for square-cornering trenches. The 47 has a 9-in. standard bucket with 12-, 16-, 20-, 24- and 36-in. options. The 48 comes with a 12-in. bucket and has 18-, 24- and 36-in. options. Height is 5'10" and digging depth is 7'6".

Circle No. 277

LEON'S MFG. CO. 800/667-1581

www.leonsmfg.com

The 944T Quadmaster Plus from Leon's Mfg. Co., Saskatchewan, Canada, is a 900-lb. mini-excavator with 1,820 lbs. of capacity and



Leon Quadmaster Plus

a lift height of 65 in. Powered by a 23hp gas engine, it comes with 4WD, singlehand steering and two hydraulic pumps. The unit claims the highest torque in the industry, making it a good machine for trenching slopes or uneven ground. It features a solenoid "combiner" valve which boosts speed and versatility. Unit handles 25 attachments including trencher, rotary hoe/tiller, backhoe and high-reach bucket.

Circle No. 278

IHI 270/737-1447

The IHI 7-J, with 31-in. width, easily passes through a standard yard



IHI 7-J has full 360° swing

gate. Made by Ishikawajima Construction Machinery, represented by Compact Excavator Sales, Eliza-