



THE GREEN MAGIC SYSTEM™

With MICRO-MUNCH

Decomposes undesirable Mat & Thatch and prevents it from re-developing

BEFORE



At time live soil bacterial spores were applied — note the accumulation of compacted Mat & Thatch at the surface. Heavy thatch sheds water, harbors insects and disease, and prevents deep root growth.

AFTER



15 weeks later — same lawn — note that the Mat & Thatch has almost completely disappeared, roots are deeper, and the soil is looser and in better physical condition due to bacterial decomposition.

INTRODUCTORY OFFER

Now, for the first time, a complete, natural product is available that contains natural organisms along with a completely balanced diet that will:

1. Naturally decompose mat & thatch up to $\frac{3}{4}$ " within 9 to 12 weeks
2. Create more ideal conditions for the natural soil organisms to grow and multiply so they can continue their decomposition of Organic Matter, and at the same time, build up the productive capacity of the soil.
3. Reduces the stress conditions that produce insects and diseases, and provides a complete, balanced diet for the natural growth of desirable turf.
4. Reduces the need for: Frequent fertilizing
Frequent watering
Frequent applications of pesticides (fungicides & insecticides)
5. Eliminates the need for: Power Raking
Frequent reseeding & resodding
Loosens, aerifies and builds more productive soil naturally, along with beautiful, healthy plants.

All you need to do is to mix the ingredient into your power spray rig, spray uniformly over your lawn — one application this season will decompose $\frac{1}{2}$ " to $\frac{3}{4}$ " of Mat & Thatch, when used as directed.

ONE TIME OFFER — EXPIRES JULY 30, 1979

or as soon as current supplies are exhausted

ORDER FORM

Please rush the following:

No. of Kits	Kit Size	Price Per Kit	Total Cost
_____	10,000 sq. ft. Green Magic w/MICRO-MUNCH	\$176.20	\$ _____
_____	110,000 sq. ft. Green Magic w/MICRO-MUNCH plus FREE SOIL TEST w/recommendations	\$1,610.54	\$ _____

TOTAL KITS _____ TOTAL ORDER \$ _____

_____ Check for \$ _____ enclosed — Freight will be paid by Agro Chem, Inc.

_____ Please charge to my (check one) _____ MASTER CHARGE, _____ VISA
(Freight prepaid by Agro Chem, Inc.)

_____ Please bill my company, P.O. attached.

Signed _____

Company Name _____

City _____ State _____ Zip _____

Phone _____ - _____

Lawn Size _____ Type of Business _____

1. 10,000 sq. ft. treating kit Cost = \$176.20

or

2. 110,000 sq. ft. treatment kit

List price = \$1894.75

Less introductory Disc. = 284.21

\$1610.54

Plus 1 Free Complete Soil Analysis

Value = \$250.00

Note: If you wish to continue growing your lawn naturally, healthfully and least expensively, it is essential that we test your soil to determine any problems or un-natural conditions that may kill the bacteria. The soil test comes with a complete report and recommendations.



Dealerships and
LARGE QUANTITY
Discounts Available

11150 W. ADDISON — FRANKLIN PARK, ILL. 60131
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ASTROTM MULCH GROW ON IT!

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hydro-seeding system

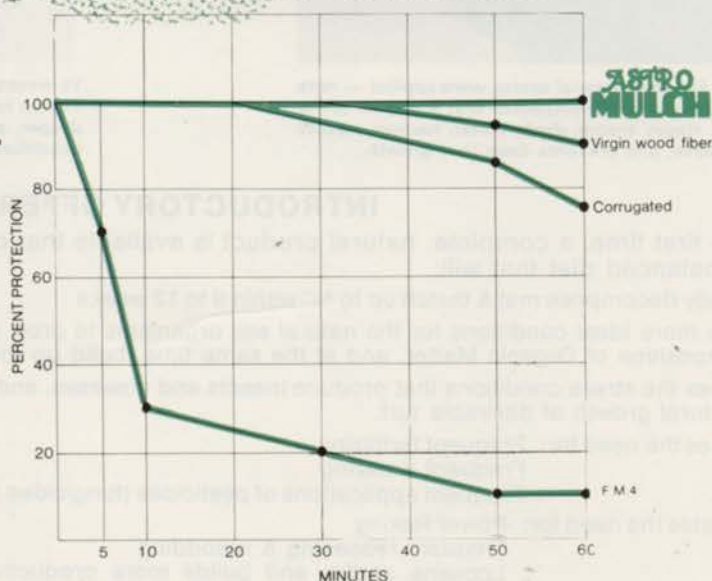


TEST BY A CERTIFIED
INDEPENDENT LABORATORY

SUPERIOR EROSION CONTROL

Only **ASTRO
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after 6 inches per
hour rain test

EXCELLENT ...
**pumpability
stickability**



PLANT LOCATIONS

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- LEWISTON, MAINE 207-783-2029
2 Avon St., Lewiston ME 04240
- DALLAS/FT. WORTH, TEXAS 817/625-5371/640-1488
412 113th St., Arlington TX 76011
- LOS ANGELES, CALIFORNIA 213/232-3445
645 E. 60th St., Los Angeles, CA 90001
- KANSAS CITY, MISSOURI 816/781-1188
113 S. Marietta St., Excelsior Sp., MO 64024
- SAN FRANCISCO, CALIFORNIA 408/244-6615
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1000 Harris Street, Charlottesville, VA 22902
- SEATTLE, WASHINGTON 206/242-9990
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P.O. 1496/5900 7th Ave. N., Fargo, ND 58102

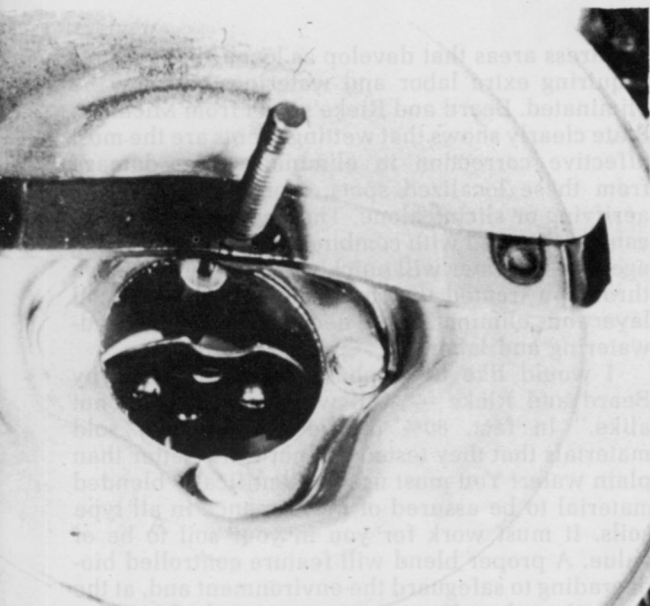
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MULCH**
GROW ON IT!

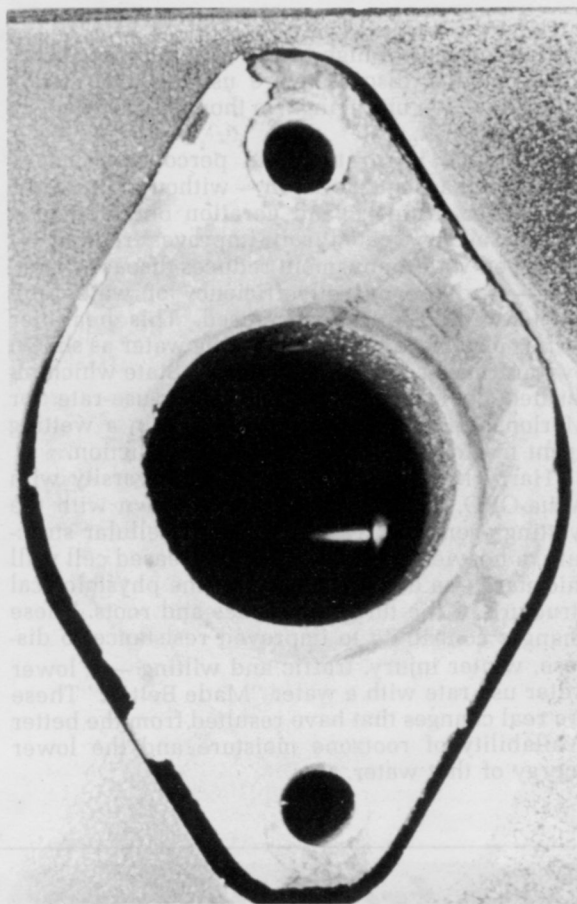
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1-800-252-0260
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1-800-421-5904

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Look down the throat of the carburetor (top, left) to check for dirt and debris getting past the air cleaner. After removing the carburetor, check the intake port for evidence of gasket damage, poor carburetor seating, and dirt. (top, right)



Engines from page 21

carbon build up inside and the type of build up. Hard and crusty carbon might indicate that the engine is overdue for its scheduled carbon cleanout or that for some reason the engine has been running excessively hot. A softer, sootier deposit would mean that you are experiencing excessive oil consumption or that you have too rich a fuel mixture.

When you pull the pan, check it closely for sludge and pieces of parts or foreign objects. Tracking down the source of such foreign objects will give you a real clue to the source of your engine troubles.

Next come the valves. Power loss, poor compression, difficult starting, and high fuel consumption are all signs of valve problems.

One of the most common of the valve failures is burning. A burned valve is most often the result of improper seating or leakage. If the entire surface of the valve face is damaged, you know that there was probably insufficient valve clearance. As the engine got hot, the entire valve was prevented from seating.

If the face has been burned only on one side, the burning was caused by a poor grind on the face or the seat, or the wrong valve was used. If the damage was caused by an improper grind, inspect the face and the seat. You may be able to regrind the valve, but often you are better off to replace it.

Sticking valves, another common valve ailment, is most often caused by gum, combustion deposits,

and carbon on the valve stem. An engine that dies after 20 or 30 minutes of running and is then hard to start is displaying typical symptoms of sticking valves.

The deposits are often caused by running the engine excessively hot. If you notice that the engine was dirty or that the air intake was restricted, you may have found some of the contributing factors to the valve sticking problem since dirt and restricted air flow would cause the engine to run hot. The cure for stick valves is to ream the guides and replace or clean the valves.

Condensation inside the engine or running with too lean a fuel mixture can cause valve erosion which shows up at the top of the stem and the underside of the valve head.

At this point, what have you learned by carefully examining the appearance and condition of the engine components? You may know that your maintenance schedule should call for closer examination of the air cleaner, a cleaning of the engine surface and cooling fins, or a close watch on the oil. You might have learned that you are allowing dirt and grit to get into the engine or are running too lean a gas mixture. What you are seeing may be a series of seemingly small things that have contributed to poor engine performance.

In the next installment, I'll discuss pistons, rings, connecting rods, and what you can learn from analyzing them during an engine teardown. **WTT**

tration in areas of high traffic — high compaction. The remedies discussed are usually aerification soil renovation or paving. No thought is ever given to the WATER.

Improved infiltration and percolation means better drainage and aeration — without rebuilding! The better drainage and aeration obtained in a wetting agent treated soil improves rooting — improved water movement reduces disease potential — and the overall efficiency of water and nutrient utilization is increased. This healthier turf, is also more efficient in using water as shown by Kauffman's data from Michigan State which indicated a significantly lower water-use-rate for Merion Kentucky bluegrass growing in a wetting agent treated soil — an 11 to 14% reduction.

Harry Muesel's work at Yale University with Aqua-GRO, showed that the turf grown with the wetting agent had a more compact cellular structure, a heavier cutin layer, and increased cell wall thickness — a definite change in the physiological structure of the turfgrass blades and roots. These changes contribute to improved resistance to disease, winter injury, traffic and wilting — a lower water use rate with a water "Made Better." These are real changes that have resulted from the better availability of rootzone moisture and the lower energy of that water.

Stress areas that develop as localized dry spots requiring extra labor and waterings can now be eliminated. Beard and Rieke's data from Michigan State clearly shows that wetting agents are the most effective correction in eliminating the damage from these localized spots; more effective than aerifying or slicing alone. The best overall results can be obtained with combined coring and wetting agents use. Water will quickly and uniformly move through a treated thatch and water repellent soil layer thus eliminating the necessity for extra hand-watering and labor.

I would like to emphasize a point made by Beard and Rieke — "All wetting agents are not alike." In fact, 80% of the commercially sold materials that they tested did not work better than plain water! You must use a scientifically blended material to be assured of performance in all type soils. It must work for you in your soil to be of value. A proper blend will feature controlled biodegrading to safeguard the environment and, at the same time, be effective over a period of months. Some materials are lost after only two or three waterings. Your use of wetting agents should be on a repeating basis in order to compensate for this controlled biodegradation.

WTT

Free from Hypro

Sprayer Pump Handbook



8 pages of helpful information to help you select and use your pumps better. Hookup diagrams for piston, roller and centrifugal pumps. Graphs of pump outputs, flow through spray nozzles. Data on pump and sprayer component selection plus much more. Send for your free copy now.

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HI-RANGER Aerial Towers meet the "American National Standard for Vehicle-Mounted Elevating and Rotating Work Platforms ANSI A92.2-1969," as required by the Williams-Steiger Occupational Safety and Health Act of 1970, Part 1910, Occupational Safety and Health Standards: Section 1910.67; Part 1926, Safety and Health Regulations for Construction: Sections 1926.451 (f), 1926.556, 1926.952 (b), and 1926.955 (e), as applicable.

SINCE 1950

HI-RANGER



MOBILE AERIAL TOWERS, INC./Dept. N/2314 BOWSER AVE./FORT WAYNE, IND. 46803

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PRODUCTS

Garlon 3A liquid amine herbicide controls woody plants and broad-leaf weeds on rights-of-way and industrial sites. It is also useful in preparing forest sites, according to Dow Chemical U.S.A.

The herbicide handles more than 10 species of common annual and perennial broadleaf weeds and is active against more than 35 woody species, including ash and oaks.

Used at recommended rates, Garlon is non-injurious to grasses and helps prevent soil erosion in brush control programs. It has a short residual in the soil and relatively low toxicity levels to fish, mammalian wildlife, and non-target plants.

For woody plant control, 2 to 3 gal. of Garlon should be applied in 20 to 100 gal. of water an acre. For broadleaf weed control, $\frac{1}{3}$ to $1\frac{1}{2}$ gal. of Garlon is suggested for 20 to 100 gal. of water an acre.

Circle 701 on free information card



Pennfine perennial ryegrass and Roundup herbicide from Monsanto have combined capabilities to provide an effective program for renewing or renovating existing turf areas.

Roundup destroys a variety of annual and perennial grasses and broadleaf weeds. Because Roundup leaves no residual soil activity, Pennfine can be spread over the treated area in about seven days after the herbicide application. It germinates quickly and grows into a dense, full stand of grass.

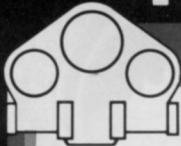
A test kit contains instructions and enough Roundup and Pennfine to renew approximately 200 sq. ft. of turf.

Circle 702 on free information card



Two all-terrain forklifts with Massey-Ferguson industrial tractor power units have been introduced by Harlo Products Corp. The 4,000-lb. capacity

HECKENDORF's Economical 72" Riding Mower has increased cutting power



Modifications include:

- Even greater cutting power—bigger engine w/electric start, more horsepower and torque;
- Larger spindles;
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- Comfort, shock mounted seat.

PLUS **HECKENDORN**
standard features;

- Zero turn radius;
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- Rugged construction;
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Economically priced,
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[illegible]

Circle **137** on free information card

H-30 forklift and the 5,000 and 6,000-lb.-capacity H-50 are powered by 45-hp. and 62-hp. Perkins diesel engines, respectively.

Both models feature heat-treated forks, instant reverse transmissions with torque converters, hydraulic side shifters, and deluxe operator seats.

The machines also provide differential locks for additional traction, planetary drive axles to reduce wear on drive components, wet disc brakes, complete hydraulic operation, and FOPS. Both forklifts are counterweighted and completely tested.

Masts come in 10½, 14, and 21½ ft. lift heights for the H-30. The H-50 provides 21½ and 28 ft. lift heights with 5,000-lb.-capacity. On the 6,000-lb.-capacity H-50 lift heights of 12 and 14 ft. are standard.

Circle 703 on free information card

Landglas from Owens-Corning Fiberglas contains eroding highway embankments, shoulders, and ditches. It helps beautify construction sites, eliminates unsafe adja-

cent areas, and greatly reduces the run-off silt and surface debris that contributes to pollution of water resources. No need for repetitive treatment with expensive materials.

The strand is applied most effectively with a special gun or else a standard straw mulcher unit. It comes in 1-ft.-high packages, weighing 35 to 40 lbs.

Circle 704 on free information card



For efficient load hauling, Trailevators from Magline Inc. lower to ground level for fast loading and hydraulically elevate the load to towing position in seconds. Eliminate need to lift heavy loads; simplify loading of large, bulky items; improve on-the-job safety; and reduce handling and hauling costs.

The trailers hold either 2,000 or 3,000 lbs. and come in bed sizes from 60 in. wide by 8 ft. long to 70 in. wide by 10 ft. long. Surge hydraulic brakes are standard on 3,000-lb. models; manual, double-acting 5,000-p.s.i. hydraulic pump is on all models. Optional equipment includes electric brakes, 3-in. forged lunette eye couplers, cargo restraints, and electric hydraulic pumps.

Circle 705 on free information card



Field Boss tractors from White Farm Equipment Co. are powered by 3-cylinder diesel engines. Model 2-30, rated at 27 PTO hp., utilizes a 91-cu.-in. displacement diesel; Model 2-35, 31 PTO hp., has 108-cu.-in. displacement.

Compact size of both tractors suits running augers and generators,

WIRE & PIPE LOCATOR 'TRACKER II' by PEI

MODELS 500 LP & 500 HP

Locates -

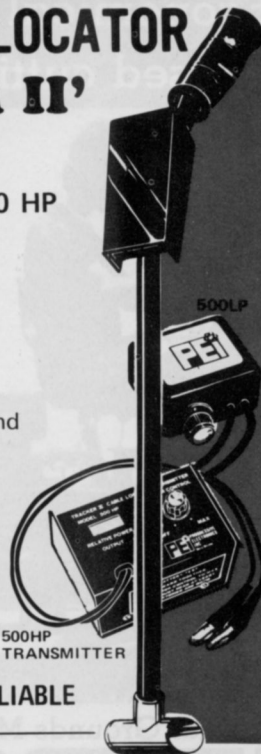
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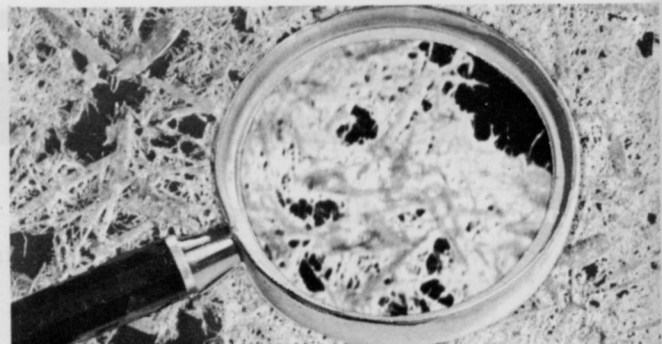


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Circle 121 on free information card



Macrophoto of "J-tac" soil stabilizing film.

J-tac™

Soil and mulch tackifier

For Better Revegetation

J-tac provides a means of interlocking surface soil particles with seed, mulch and other additives used in revegetation projects. Helps resist erosion (wind, or rain) and movement of seed during critical establishment period.



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A Step Ahead. **FYLKING.**



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 Ken-

tucky 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

Another fine, quality-controlled product of Jacklin Seed Company.

mowing roadsides and headlands. Four forward gears and one reverse work in harmony with a Hi/Lo range selector to produce eight forward and two reverse speed ranges. With Model 1010 loader, each tractor maneuvers easily to clear feedlot areas or alleyways and remove snow and landscape.

Standard features include complete gauge indicator lights; adjustable, padded seat; differential lock; and working headlamps, rear safety lamps, and flashing warning lamps. There is also a live 540-r.p.m. PTO, two-stage clutch control; power steering; Category I three-point hitch; adjustable four-position rear wheels; and five-position front axle.

Circle 706 on free information card

An asphalt replacement tackifier, the Terra Tack AR, substitutes for asphalt emulsion as a straw tackifier. Clean-up and maintenance of the Grass Growers, Inc. product takes a simple rinse with water.

Circle 707 on free information card



Vermeer Manufacturing Co. has introduced Model LM-20 compact riding plow-trencher.

As a lawn plow, it installs pipe and wire of 1/4 in. dia. to 15 in. deep with little surface disturbance. It may also be equipped with a 15-in. wide front-mounted reel carrier.

The trencher attachment digs 24 in. deep and 6 in. wide. Dual augers place the soil to both sides of the trench for easy restoration and a 42-in. front-mounted backfill blade fills in the dirt.

The 19.5-hp. unit is powered by an Onan NHB-MS gas engine coupled to a Sundstrand hydrostatic

drive and reaches ground speeds of 0 to 255 f.p.m., forward or reverse. It weighs 1,600 lbs. and is less than 36 in. wide with a wheelbase of 45 1/2.

Circle 708 on free information card



SK58 sinker from Stanley Hydraulic Tools uses air or water to clear holes from 1 to 3 in. dia. and up to 20 ft. deep, easily penetrating rock or concrete.

Direct drive rotation adjusts from 0 to 300 r.p.m. and is independent from its impact rate of 2,500 blows per minute. A feathering valve makes for easy starting. Comes with an integral hydraulic motor and is available in both open and closed center models. It weighs 65 lbs. and accepts standard steel bits.

Circle 709 on free information card

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**REDUCED WATERING • FASTER RESPONSE TO
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The new standard of excellence in bluegrass has arrived.

Enmundi displays the rich, dark color, low growth habit, healthy appearance and exceptional uniformity that are synonymous with turf quality. Quality that stands up to the disease and management problems that plague many existing bluegrass varieties. The ultimate achievement of excellence in Kentucky bluegrass is now here. In a word: Enmundi.

Pronounced "In-Monday."



Circle 141 on free information card

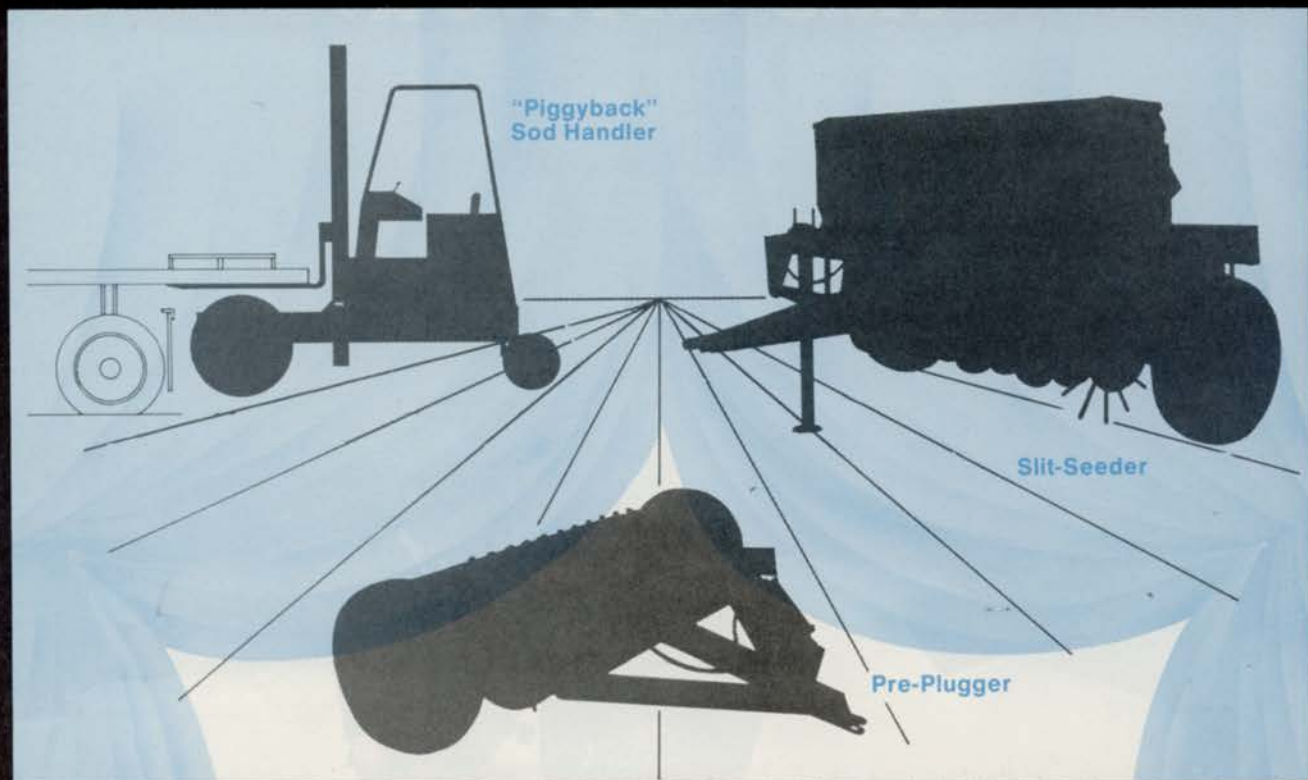


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"Piggyback" Sod Handler

Newly developed by Princeton, this quality constructed Sod Handler is not only versatile ... but **completely safe**. This mighty little machine will load and carry all day long in the field, then lift itself onto the back of your truck for a piggyback ride home. See it in action!

Unique Pre-Plugger

Vegetative growers ... increase your sod yield up to 20% with this innovative re-growth method. Now, discover how to harvest **all** of your sod. This proven machine eliminates the need to leave strips of perfectly good sod in the field for re-growth purposes. Let Princeton demonstrate how to harvest an additional acre from every five.

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With its new method of micro-seeding, this new Slit-Seeder can guarantee tremendous savings on any seeding job. Now use only 8-12 lbs. of seed per acre instead of up to 50 lbs! Just divide your normal yearly seed costs by three-fourths... then call Princeton for a demonstration.

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