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Insect and mite protection from tee to green.

MAVRIK AQUAFLOW® Insecticide is a broad spectrum insecticide and miticide—in fact, it eliminates practically every problem except divots.

MAVRIK goes after pests that live in turf, in shrubs, in trees. It kills chinch bugs, sod webworms, mites, cutworms, leaf feeding caterpillars, aphids, whiteflies, leaf beetles and others.

There has never been a single product that handles so many pests, while being so safe to plants, convenient to use and easy to apply. MAVRIK is a non-restricted material, and it has been tested on more than a hundred ornamental species without a report of any phytotoxicity.

MAVRIK is a water-based flowable, so it's easy to mix. There is little residue and no odor—you can use it Friday afternoon and the members won't get their noses out of joint over the weekend. After a spray has dried, it's easy on bees. And it won't harm bird species.

You won't find the convenience and broad spectrum coverage of MAVRIK in any other product. And since MAVRIK is available at your local distributor, all you have to do is ask for it.

SANDOZ CROP PROTECTION

Use pesticides effectively. Read and follow label directions carefully.
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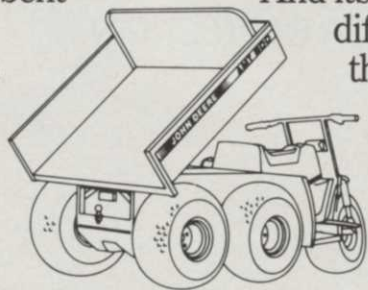
LANDSCAPING WITH

The new John Deere AMT™ 600 All Materials Transport treads so lightly, it'll barely bend your bent grass.

That's because even with a 600-pound* payload and a 200-pound operator on

board, the AMT transport only puts down an average of 17 psi of ground pressure.

And its automotive-type differential allows the inside wheels to



The 48¼ x 43-in. box manually raises to a 45 degree angle.

turn slower than the outside wheels. So the 600 won't tear up your turf turning either.

But for all the features that won't leave a bad impression on your turf, there are even more that'll leave a good impression on you.

Like the way the AMT



OUT LANDSCUFFING

transport's powerful drive system provides a 62-to-1 torque ratio for tremendous pulling power.

Or the way its box holds 12.5 cubic feet of material—and dumps too.

So if you're looking for a utility machine that won't sink into your landscape or

your budget, see your John Deere dealer. Or write John Deere, Dept. 84, Moline, IL 61265.

AMT 600 vehicle transports easily in a standard size pickup.

**On level ground
**Manufacturer's suggested list price not including sales tax.
Price may vary with dealer.*

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Nothing Runs Like a Deere®



LOADING: FOR LOADS OF PROFITABILITY

Selecting the wrong loader for the job means wasted time and labor. Selecting the right loader can assure your company more profitability. Here's how to go about the selection process.

Selecting the appropriate equipment is a vital decision for a landscape manager that can mean the difference between profit and loss. Several variables affect the purchasing decision, including:

- in what application or applications the equipment will be used;
- how frequently the equipment will be used; and
- the conditions under which the equipment will be used.

"Matching equipment to applications is key to helping ensure that a landscaping operation runs smoothly and profitably," says Marty Koval, product supervisor at JI Case.

"A landscape manager may be able to operate efficiently with one piece of equipment and a variety of attachments. Or, it may be more sensible to purchase two or more pieces of equipment with multiple functions and keep a busy operation running smoothly. For guidance in evaluating equipment needs, a knowledgeable dealer is an excellent resource."

Tractors

A general purpose tractor can easily handle many landscaping projects for municipalities, parks, golf courses and recreational areas. With the right attachments, these small, compact

machines provide the maneuverability and versatility for mowing, grading around buildings, site preparation and general clean-up.

For example, the Case Model 380B general purpose tractor comes equipped with a three-point hitch and PTO to easily accommodate a wide range of attachments. The three-point hitch provides the operator with a lift and lower function and a draft and float control to pull a variety of mowers, box scrapers, backfill, leveling and grading blades and rakes. A PTO enables the tractor to drive augers, rototillers and mowers.

Optional auxiliary hydraulics let an operator use up to two functions with attachments, such as pitch, tilt and raise and lower functions.

A low center of gravity (LCG) version of this tractor is specially designed with improved stability that may be needed for contoured golf courses, parks and roadside mowing.

The LCG tractor's wider stance, lower profile and high flotation tires provide better control on slopes, significantly reducing overhead clearance concerns and virtually eliminating the potential of any lawn damage.

Nurseries and contractors also often need tractors that can accommodate loaders and forks to move and load trees, shrubbery, stones or pallets of material such as sod.

Many general purpose tractors are available in industrial versions that use a stronger frame and axle to handle these heavier loads. They can also have a transmission with more travel speeds and shuttle capabilities between forward and reverse that provide faster cycle times.

"In different configurations and with a variety of attachments, general purpose tractors can function in a multitude of applications for landscape managers and contractors who aren't working the individual ma-



Still time to save.



James I. FitzGibbon
Chairman and Chief Executive Officer
LESCO, Inc.

LESCO equipment is on sale now. The 500 Fairway Mower. The 300 Greensmower. The gang mower. The hydraulic lift. The aerator. The spreaders and the sprayers.

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And if you pick up your equipment at our Sebring, Florida manufacturing facility, I'll deduct another 5%.

The chart highlights the discounts by month. Determine your savings by combining discounts for the month you order and the month you pay.

Month	Early Order Discount	Early Payment Discount	Sebring Pickup Allowance
October	8%	5%	5%
November	6%	4%	5%
December	4%	3%	5%
January	2%	2%	5%
February	1%	1%	5%

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Loaders like this one can be easily removed from tractors in less than one minute. This quick-change feature makes the tractor more versatile and time-efficient.

chine year-round," Koval says. "However, if the equipment is going to consistently be used in heavy applications and for long periods of time, a more substantial tractor should be considered."

Landscaping tractors

Landscaping tractors provide contractors with the rugged performance capabilities and durability that will keep the machine operating for long periods of time in more adverse conditions. These products are designed with a single-piece mainframe and integral loader to provide the strength needed for more heavy-duty operations.

Common applications for these maneuverable tractors are in new residential and commercial complex construction where extensive amounts of loading, grading and planting are required. Popular in rental yards and with landscape contractors, these higher horsepower tractors feature a torque converter



Many times, backhoes are used not only for excavating, but also for loading the displaced dirt into trucks for transport elsewhere.

and shuttle to help maintain optimum performance of the synchronized transmission.

A three-point hitch can provide up to five hydraulic functions for more precise control of the many mower, rake, box scraper and broom attachments available.

Many of these tractors are also available with four-wheel-drive for a more productive loader operation, greater drawbar pull, better traction with attachments and more tractive effort on muddy or hilly terrain.

Skid-steer loaders

Skid-steer loaders are utility machines that can be a valuable asset working alone or in conjunction with a tractor or loader/landscaper.

Their small size and excellent maneuverability enable skid-steers to fit through narrow areas, operate in tight

spots and make tight turns. One company has a skid-steer loader that is only 35 inches wide, but has a 550-lb. lift capacity.

"Skid-steer loaders not only replace a man with a wheelbarrow, they also can accomplish the smaller landscaping jobs that tractors cannot handle," Koval notes.

In a nursery, a skid-steer loader can be driven down narrow rows to transport shrubs and small trees. In the back of the lot, it can move materials and has the reach to dump soil or gravel into small trucks.

On a landscaping project, these versatile machines can spread and contour topsoil, transport shrubs and small trees and move gravel and bark into place to finish a job.

A skid-steer loader with a smooth-bladed bucket may be used to build up planting areas. Because skid-steer loaders are designed to accommodate a variety of attachments, the operator can switch to an auger attachment to dig holes for bushes, small trees or even post holes for a split-rail fence.

Along with a variety of buckets, other skid-steer loader attachments include pallet forks for loading, tree spades, grader blades and backhoes.

"There are a variety of options landscape managers can employ when it comes to choosing equipment for their operations. Equipment rental is often a viable choice when a specialty application arises and an equipment purchase is not cost-effective. The key is to realistically evaluate needs to ensure that the equipment investment pays off by meeting current as well as future needs," Koval concludes.

LM



Skid-steer loaders maneuver well in small areas.

Spray herbicide directly over the top of your established shrubs and ornamentals? Go ahead. Surflan® lets you spray with complete confidence.

All you'll see are the bright colors of your landscape or lawn. No crabgrass. No oxalis. No chickweed. And no prostrate knotweed and 50 other grasses and weeds, either. You won't see them for six to eight months, in fact, when you spray Surflan preemergence herbicide.

You'll also see Surflan is more stable on soil surfaces. It'll wait three weeks for water. Then it stays put,

even in heavy rainfall, to provide outstanding weed control. Yet it's gentle enough to spray over the top of 175 different ornamentals.

So go ahead. Fill up with Surflan and take your weed control where you never thought possible. Over the top of your ornamentals without injury. See your Elanco distributor. Or call toll-free: **1-800-352-6776.**

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where you never thought possible.**



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pendimethalin preemergent weed control.

Its combination of broadspectrum action, control effectiveness and residual is unsurpassed. And we offer it in dry and liquid applied forms, with or without fertilizer, for greater flexibility.

BLUE-GREEN ALGAE AND BLACK LAYER

Researchers throughout the country have proposed theories on the cause of the black layer destroying sand greens. Last month, LANDSCAPE MANAGEMENT looked at some of these theories. This month, we examine preliminary research conducted at Iowa State University.

by Clinton F. Hodges, Ph.D., Iowa State University



What A Scotts Tech Rep Considers Big Trouble.

Most important, since pendimethalin is so cost-effective, your Scotts Tech Rep can tailor a pre-emergent program to both meet your needs and your budget.

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you, try our pendimethalin. It practically scares them away.

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BLUE-GREEN ALGAE AND BLACK LAYER

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by Clinton F. Hodges, Ph.D., Iowa State University

The preliminary studies presented here on the role of blue-green algae and anaerobic bacteria in black layer formation were begun in the fall of 1986. Our initial studies examined the ability of *Oscillatoria* to colonize sand and to produce mucilage that would ultimately restrict water infiltration into the sand.

These studies were conducted with silica (quartz) and calcareous (10.6 percent calcium) sands placed in modified culture tubes.

Unless specified otherwise, 95.7 percent of the sand was between 0.1 and 1.0 mm in size. Each tube provided a six-inch column of sand approximately one-inch in diameter. The algae were introduced to the surface of the sand and maintained under fluorescent lights with weekly applications of a weak nutrient solution. The tubes were flushed with distilled water between nutrient solution applications. *Oscillatoria* was grown 10 weeks on the sand columns, and infiltration measurements were taken every seven days (Photo 1).

Initial water infiltration rates of the columns ranged from 39.1 to 45.2 cu. in. per hour for both the silica and calcareous sands at the time *Oscillatoria* was introduced to the sand's

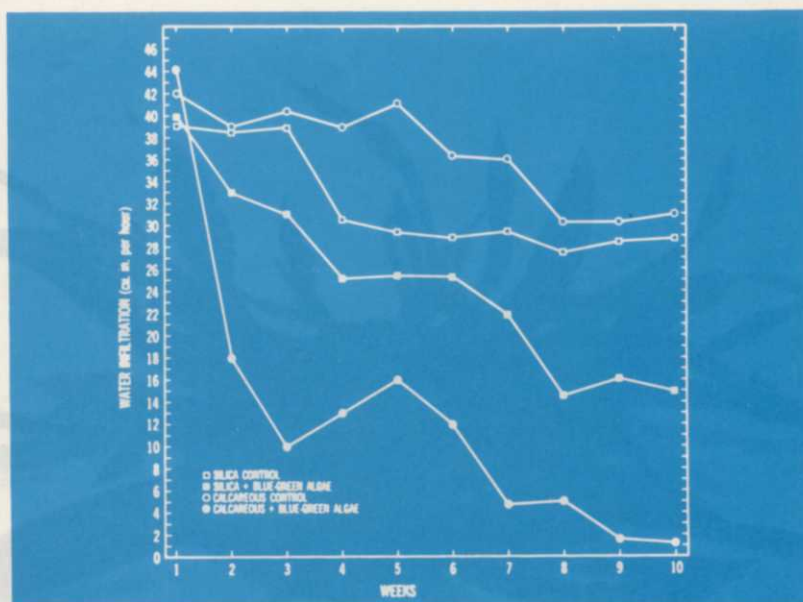


Photo 1: The chart shows the effect of *Oscillatoria* on water infiltration into silica and calcareous sands over a 10-week period.

surface. Infiltration among control tubes decreased slightly over the 10-week observation period but remained very high (Photo 1). Infiltration rates decreased slowly over the 10-week period in silica sand infested with *Oscillatoria*; at 10 weeks infiltration was about 54 percent of the control (Photo 1). Infiltration of the calcareous sand infested with *Oscillatoria* was severely reduced; at 10 weeks infiltration was 4.8 percent (1.5 cu. in./hr) of the control (Photo 1).

Infiltration was more severely affected on calcareous than on silica sand. Most species of blue-green algae grow most successfully in alkaline conditions and may use calcium carbonate. The initial slowing (first five weeks) of water infiltration by the al-

gae seems due to their physical blockage and sealing of the sand's surface.

Ten weeks later...

By 10 weeks, however, the algae can be removed from the sand's surface and the infiltration rate remains the same. This suggests that the extra-cellular by-products of the algae (mucilage) gradually fill the pore space in the sand until water movement is seriously impaired. The mucilage products are visible in drainage water collected from the tubes.

These initial observations support two important aspects of the hypothesis that black layer is of biotic origin.

1) There is little doubt that a biotic entity (in this case blue-green algae) can, by means of its life processes, produce a physical problem in the sand mix profile that impairs water movement.

2) Organic substances produced by the algae that are responsible for the impaired water movement are hydrophilic. They seem to be responsible for establishing a perched water table in the top two to three inches of the sand mix that may establish the anaerobic zone needed for black-layer development.

Studies in progress are intended to