



## New D-Series Toolcat 5600

The Toolcat utility work machine is a compact tractor, attachment carrier, utility vehicle, pickup truck and more. With new enhancements, such as four-wheel independent suspension, a spine frame design and a completely revamped powertrain, this unit delivers a ride, performance and versatility not seen in many other types of equipment. The D-Series 5600 is the first compact loader to feature true four-wheel independent suspension, particularly beneficial when mowing, spraying, pushing snow or simply traveling comfortably over uneven terrain. You can choose an enclosed cab with heat and air conditioning, a CD player and keyless start.

### Bobcat

For information, fill in **070** on reader service form or see

<http://www.oners.hotims.com/14675-070>

## New moisture control product for turf

DewCure, new from Mitchell Products, is now available for the control of moisture in turf such as dew, guttation, and frost. DewCure both inhibits moisture accumulation and promotes faster drying of turf. The product is suitable for application at any time of the year on warm or cool season grasses, but maximum benefit is achieved when DewCure is applied to slow growing turf, especially during autumn, winter and early spring.

### Mitchell Products

For information, fill in **066** on reader service form or see

<http://www.oners.hotims.com/14675-066>



# REMOVABLE PAINT FOR SYNTHETIC AND GRASS FIELDS



## TEMP-LINE



Now you can add or remove football, soccer or lacrosse lines and logos to meet all your event needs.

APPROVED FOR SINGLE AND MULTY FIBER FIELDS



NFL Approved Vendor

Check out our new removal equipment at  
[www.ecochemical.com](http://www.ecochemical.com)

Call 1-800-677-7930 for a FREE Temp-Line Sample Kit

Fill in **140** on reader service form or visit <http://oners.hotims.com/14675-140>



# What do Sports Turf Managers need from a distributor?

- ⊗ A complete selection of fertilizer, chemicals, seed, tools, equipment, and irrigation, including exclusive brands like Turface, Lebanon and Seed Research
- ⊗ Product in stock when you need it
- ⊗ Professional, knowledgeable sales team
- ⊗ Convenient locations
- ⊗ On time delivery

**Horizon delivers all that and more!**

Drop by one of our over 60 stores or visit us online to learn more about the Horizon difference!

HorizonOnline.com



**Horizon**

irrigation | specialty | landscape | equipment

888.898.8833 | AZ | CA | CO | GA | ID | NV | OR | TX | UT | WA

Fill in 141 on reader service form or visit <http://oners.hotims.com/14675-141>

## TOOLS & EQUIPMENT

### New sod cup

The M-115, a long-throw sprinkler with a built-in natural turf sod cup, is now available from Underhill for use on all parks and large sports fields. It features a 115-ft. throwing

radius and an 8-in. pop-up height. The sod cup is 4-in. deep and holds a 9-in. wide section of natural grass. It is available as a valve-in-head or block model, and it virtually disappears when not in use. Can be used on synthetic turf. The part-circle heads are adjustable from 30° to 360° and can be switched into full-circle mode to syringe the infield and warning track areas.

**Underhill**

For information, fill in 067 on reader service form or see

<http://www.oners.hotims.com/14675-067>



### New Cat skid steer loaders

Four new Caterpillar C-Series skid steer loaders feature electro-hydraulic joystick control of the hydrostatic drive system and electronic torque management for smooth operation and high productivity. Operator comfort, too, reaches new levels with features such as an optional sealed and pressurized cab and an optional air suspension seat. Additional options, such as High Flow XPS hydraulics on each of the models, expand versatility and enable customers to equip C-Series machines specifically for the types of work they do.

**Caterpillar**

For information, fill in 055 on reader service form or see

<http://www.oners.hotims.com/14675-055>



## John Mascaro's Photo Quiz

# A

**Answer:  
from page 23**



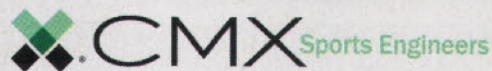
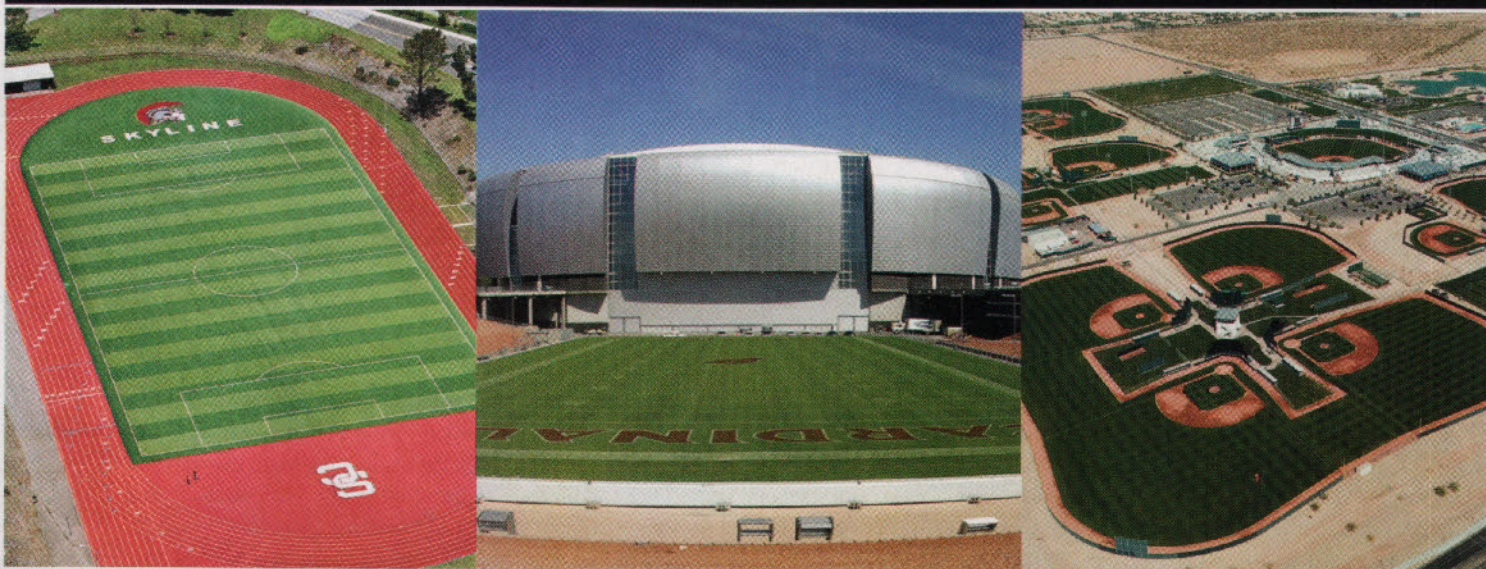
The irregular brown area on this football practice field is result of two separate lightning strikes directly to the ground. The University of Miami has a lightning "prediction" system. It sounds a horn for "get off" and a horn for "re-enter." The system sounded an alert to get off before this storm came through. No employees, students, or summer camp attendees were allowed on the field while the lightning system was going off. The University has a policy that EVERYONE is off the field while the system is showing alert.

The next day after this storm the Sports Turf Manager noticed this brown area of turf and was puzzled because it was directly near a movable soccer net that was on the football field for a summer camp but the net was not damaged. As you can see in the photo, there are two separate areas of turf damage showing a direct strike fanning out in a finger like pattern in the front of the photograph. The second strike caused the damage in the background as the as the second lightning bolt also struck the turf, causing additional damage. This photo sure puts to rest the saying, lightning never strikes twice! ■

*Photo submitted by Chris Denson, Sports Turf Manager for UNICCO at The University of Miami, Miami FL.*

If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste # 13, Tallahassee, FL. 32303 or email to [john@turf-tec.com](mailto:john@turf-tec.com). If your photograph is selected, you will receive full credit. All photos submitted will become property of SportsTurf magazine and the Sports Turf Managers Association.

## Planning • Design • Construction Management



**Come see us at the 2008 STMA conference at Booth #1331**  
[www.CMXSportsEngineers.com](http://www.CMXSportsEngineers.com)

Fill in 142 on reader service form or visit <http://oners.hotims.com/14675-142>



# Increasing microbial diversity in sand-based soils with humic substances of **APEX-10**

**M**icroorganism diversity is critical to the maintenance of healthy soils of sand-based sports turf. Complex populations of microorganisms responsible in the cycling of organic matter are involved in all aspects of soil functions and the sequestering of nutrients in all soils.

Research with APEX-10 in sand-based root zones of both cool season and warm season grasses show increases of biomass quantity and activity, while making nutrients more available to the plant and reducing the leaching of nutrients through the soil.

When the humic substances of APEX-10 were compared to the humic substances of leonardite results again demonstrated an increase in biomass and biomass activity.

### Background of procedure

The Soil Foodweb Incorporated, a commercial enterprise focusing on the research and practical understanding of soil organisms, examined the effects of APEX-10 on soil microorganism reproduction and activity. All soils in the study did not receive any fertilizer nor was any vegetation grown on the soil throughout the study.

### Trial standards

A base soil was mixed and tested to determine baseline levels of total and active bacteria and fungi, total protozoa, nematodes, and total available nitrogen prior to the start of the trial.

APEX-10 was applied at two different rates in three separate plots for each rate and three separate plots were used for the control, which did not receive APEX-10. The low rate was applied at 3 oz. per 1000 sq. ft. and the high rate at 6 oz. per 1000 sq. ft. with the control receiving water only.

The soils were assayed at 7, 30, and 60 days with three samples from each plot taken during each interval. At the completion of the study a composite sample was made of the soils of the three low rate plots and the soils of the three high rate plots, protozoa and nematodes were assayed to determine the increase in their numbers, these two composite samples were also sent to Rutgers University for chemical analysis.

At the 7-day interval an increase in fungal activity was detected in

both the low and high rate plots, with a more significant increase in the high rate plots. Total fungal biomass showed very little change at the 7-day interval. The total bacterial biomass had increased nicely during the same interval, and again a more significant increase was detected at the high rate.

At the 30-day interval bacterial activity and fungal activity had increased in the low rate plots, while both bacteria and fungi activity had slowed in the high rate plots, with the total fungal biomass increasing in the high rate with.

At the 60-day interval the active fungal biomass was again increased, most likely as a result of the on-going applications of APEX-10. Total bacterial and fungal biomass increased at the low rate and high rates compared to the control, and these increases are likely a result of the higher population of protozoa and nematodes in plots treated with APEX-10, which feed on bacteria and fungi.

### Summary

APEX-10 provided resources for bacteria and fungi growth and activity from the start of the project, indicating that this is a quickly colonized resource for fungi and bacteria growth. It was also observed that APEX-10 had significant growth capabilities with the fungal biomass maintaining consistent growth and activity throughout the trial.

The increase in predatory microbes (protozoa & nematodes) was significant from the beginning of the project to the end of the project and due to the increase in bacterial and fungal biomass, and the good growing conditions attributed to the food sources provided by APEX-10. This increase of predatory microbes led to very nice increases in nutrient cycling demonstrated by the available nitrogen retained in the soil by the soil predators.

Results from the chemical analysis conducted at Rutgers University yielded lower extractable micronutrients and lower extractable macronutrients in both the low-treated soils and high-treated soils. This coincides with the increase in the soil biology, indicating that the population of microorganisms in the soil is retaining higher levels of nutrients as a result of the increased biomass and activity provided by the food sources of APEX-10. ■

This article is sponsored by Nature's Wonder.

To see an online demonstration, visit <http://oners.hotims.com/14481-412>



## Biomass increases 60-day soil foodweb study

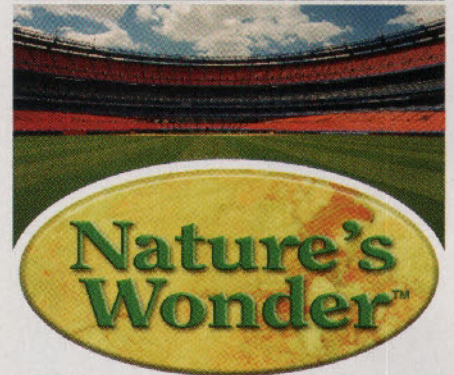
	Low Rate	High Rate
Active bacterial biomass	39%	-6%
Total bacterial biomass	46%	67%
Active fungal biomass	35%	32%
Total fungal biomass	54%	77%
Flagellates	395%	504%
Amoebae	2,480%	3,091%
Ciliates	350%	650%
Beneficial nematodes	2%	15%
Available nitrogen lbs/acre	400%	667%

## Biomass increases 12-month field trial on bermudagrass

	APEX-10	Leonardite
Active bacterial biomass	31%	
Total bacterial biomass		14%
Active fungal biomass	87%	
Total fungal biomass	100%	
Flagellates		79%
Amoeba	30%	
Cilliates	142%	
Beneficial nematodes	84%	
Endo mycorrhizal colonization	260%	

## WHY APEX-10?

DEEPER ROOTS | STRONGER TURF | INCREASED BIOMASS



Natures Wonder APEX-10 is an organic Peat Humic Substance made from highly humified North American Peat. APEX-10 organic properties are over 88.5% volatile and 100% of the humic acid is plant available. These Biostimulating qualities of APEX-10 have been proven in university studies and in the field to deliver the highest results with the lowest application rate.

WITH THESE BEING JUST A FEW OF THE PROVEN RESULTS USING APEX-10, THE REAL QUESTION IS...

## Why Not APEX-10?

1.856.222.4675

[www.natureswonder.com](http://www.natureswonder.com)

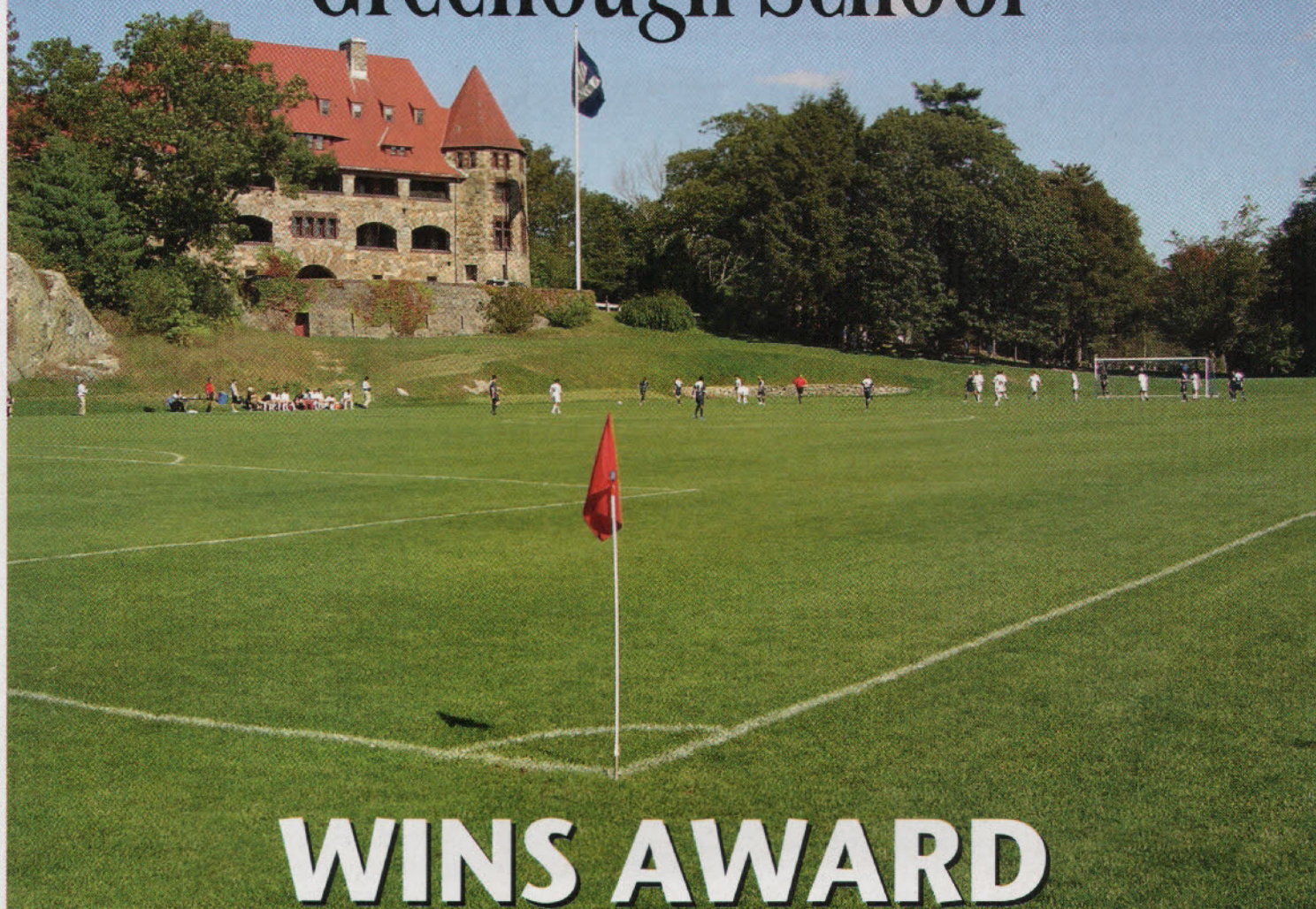
900 BIRCHFIELD DRIVE | MOUNT LAUREL N.J. 08054



Reviewed by OMRI and Registered for Organic Crop Production by USDA Standards.



# Greene Field at Noble and Greenough School



## WINS AWARD

The 2006 STMA School/Parks Soccer Field of the Year belongs to Greene Field at Noble and Greenough School in Dedham, MA. Peter Thibeault and Joe Caseault lead the turf management team there.

Here are some highlights from their award-

winning entry:

"Seeding is done constantly. We employ several methods. One is to broadcast seed throughout thinning areas and then let the kids' cleats help make good seed-to-soil contact. We also use a divot mix and seed combination for very worn areas in front of goals and benches. The divot mix is a blend of sand, peat, and organics.

"We aerate every 3-4 weeks, depending on the time of year and type of aeration, we will broadcast seed afterward. If compaction is high, such as after graduation ceremonies, we verti-drain 6-8 inches and, depending on thatch layer, we may topdress with a 2-mil sand. Before topdressing we broadcast seed over high-traffic areas at a rate of 14-20 pounds per 1,000 square feet.

"We use three different seed mixes depending on soil temperature and activity on the field. A 50/50 mix of Kentucky bluegrass and perennial ryegrass is used throughout the season, while a 70/30 mix of perennial rye and bluegrass is used early and late in the season. A triple perennial ryegrass is used very early and late in the season and in less active periods. We sometimes pre-germinate seed to get quicker establishment."



## Historic backdrop

Greene Field's backdrop is castle, built by in the 1800's. Its builder envisioned green space along the Charles River and this area continues to be green, with four other fields also occupying the space. The field hosts spring baseball as well as fall soccer, summer day camps, and other school events, including the important Jimmy Fund Picnic.

Greene Field is the low point for all these fields, as well as the indoor athletic center, and has drainage built into the corners. The field may host many practices in a day, so grid spaces were made alongside it for drills such as speed and agility work. A goal area is also available for goalie workouts off the field. The grids are 5 x 5 yards and stacked together for side-by-side or lengthwise drills.

**SportsTurf:** What channels of communication do you use to reach coaches and users of your facility? Any tips on getting good cooperation?

**Thibeault:** We are very fortunate to have many channels of communication. The most important is our recordkeeping on Monday mornings. We use spreadsheets to track a lot of info on all fields. We track soil temperatures, percentage of turf cover, events, mowing height, soil moisture percentage, compaction levels among others.

I give this spreadsheet to the director of facilities, who then meets with the athletic director to draw up the week's schedule. We have also come up with a newsletter called "Joe and Pete's Sportsturf Rules" (see

sidebar). This newsletter, given to all coaches and users, contains some basic info on turf and some other info such as how many acres, how much paint it takes to paint the fields, types of grass varieties and also gives some tips on field use, for example, moving nets using grid spaces for cone drills.

We are also fortunate that most coaches are teachers so we can catch up with them through the day and ask if there is anything else we can do. With these three methods we have had great success in educating our users to have a greater respect for their playing surfaces. All I can say is patience is key and you need to be consistent with what you are telling them.

**SportsTurf:** How did you get started in turf management? What was your first sports turf job?

**Thibeault:** I have always been fascinated with nice landscapes, even as a kid cutting my parent's lawn and raking leaves. Fifteen years ago I decided outdoors was where I needed to be so I left the office rat race and went to work for Trugreen Chemlawn where my obsession with nice turf began. Later I moved to a landscape company where I had the opportunity to work on sports fields and that is where it all started.

**SportsTurf:** How do you balance your family life with work demands?

**Thibeault:** This is an epic struggle that I think the most appropriate way to answer is "Less sleep, more coffee." Fortunately there are



- The patented Recirculating Air System minimizes dust that can filter back onto seats and facilities.
- PTO- and gas engine-powered models let you tow with any tractor or utility vehicle while wireless remote control puts management in the operator's seat.
- The wide brush in combination with the Turbo Vac system provides excellent pick-up on all surfaces, including pavement, artificial turf and granular rubber pellets.
- A wear-resistant, replaceable blower housing liner and direct hydraulic drives help reduce maintenance costs.

To find out more, visit  
[www.harperindustries.com/104a](http://www.harperindustries.com/104a)

**HARPER INDUSTRIES, INC.**

151 E. Hwy. 160 • Harper, Kansas 67058 • Phone: 620.896.7381 • Toll-Free: 1.800.835.1042 • [info@harperindustries.com](mailto:info@harperindustries.com)  
[www.harperindustries.com](http://www.harperindustries.com)

Fill in 143 on reader service form or visit <http://oners.hotims.com/14675-143>



# FIELD OF THE YEAR



**remarkable**  
PAINT COMPANY  
[www.remarkablepaint.com](http://www.remarkablepaint.com)

Removable Paints for Artificial & Natural Turf

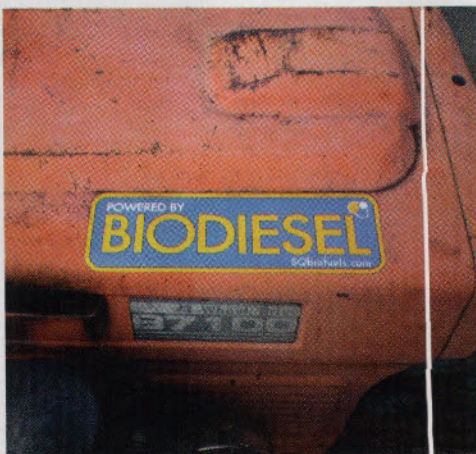


Take the Paint Off!    Get Your Game On!

Visit us at [www.RemarkablePaint.com](http://www.RemarkablePaint.com)

Fill in **144** on reader service form or visit <http://oners.hotims.com/14675-144>





**SportsTurf:** Do you plan any adjustments, large or small, to your maintenance plan in 2008? Did you purchase any new equipment or product for this year?

**Thibeault:** There are always adjustments in the maintenance plan. Our New England weather is constantly changing and so is our plan to keep the athletes safe. As always we plan to use less water and grow more dense strong turf.

We had to make an emergency purchase last fall; 2 weeks before preseason the Ransomes AR250 made its last cut in a cloud of smoke, which left us in quite the pickle. Three days before preseason started our new Toro Sidewinder was delivered—what an awesome machine, it helped get our fields back in shape for preseason with a day to spare.

**SportsTurf:** What's the greatest pleasure you derive from your job? What's the biggest headache?

**Thibeault:** I get the greatest pleasure knowing that I gave our athletes the safest surface they could have for that day. The biggest headache is Canadian geese!

**SportsTurf:** How do you see the sports turf manager's job changing in the future?

**Thibeault:** It is changing constantly with restrictions to what, where, and how we do things. I can see us being looked upon for education and also as being stewards to our environment, after all our crop does eat up a lot of the CO2 other things put out. ■

Fill in 145 on reader service form or visit <http://oners.hotims.com/14675-145>

Fill in 146 on reader service form or visit <http://oners.hotims.com/14675-146>



# FIELD OF THE YEAR

The **ONLY** Self-Propelled Striper for Less Than \$2,500

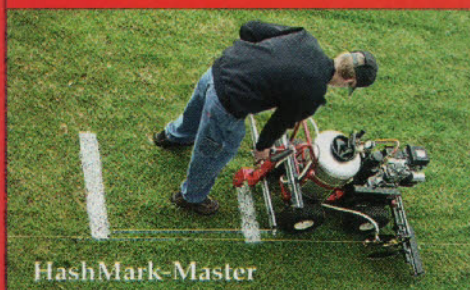


Eco-Liner SP

**Eco-Liner SP™ sets a new standard**

- Least expensive machine on the market
- Same great features as all our Eco-Liners
- No messy pouring, pumps from 5 gal pail
- No stirring, continuous paint agitation
- One-pass striping, bi-directional spray

**Paint Hash Marks 5 Times Faster Than Other Methods**



HashMark-Master

**HashMark-Master™ revolutionizes the painting of hash marks**

- Attaches to any NewStripe machine
- Automatically measures layout
- Perfect 4" x 24" hash marks
- Simple one-man operation

**More Great Products**

Call us or visit our web site to see videos of NewStripe products in action.

- 30 & 55 gallon NewRider strippers
- Gas and Battery powered units
- Dirt Doctor Infield Groomers
- Nail Drags and Drag Mats
- ProLine Field Layout System

**NEWSTRIPES**

1700 Jasper St., #F  
Aurora, CO 80011

[www.newstripe.com](http://www.newstripe.com)

**1 800-624-6706**

Fill in 147 on reader service form or visit  
<http://oners.hotims.com/14675-147>



## Coaches' handout

Peter Thibeault and Joe Caseault have also developed a trifold handout for coaches that helps educate them on the proper use of space to help prevent the usual wear areas. They constantly work with users to help build a team atmosphere and so they can better understand how the space will be used and how we might prepare better for that. The trifolded information given to coaches is called "Joe & Pete's Sportsturf Rules." Its contents include a section on "Sportsturf Etiquette":

- Replace your divots
- Move goals off playing surface at end of session
- Do stretching, warm-up, and quickness drills in different areas
- Rotate warm-ups daily to different areas
- Try to practice in areas where normal play doesn't occur
- Use practice areas

Another section is titled "Do's and Don'ts":

- Do take a moment to enjoy the turf
- Don't stand there too long
- Do use the practice areas for drills that require being in one place for an extended time
- Don't continue to sue that same spot for that same drill
- Do feel free to move nets around to help reduce wear in goals and center of field
- Don't leave nets out in the middle of the playing surface
- Do leave the field picked up of trash and equipment
- Don't worry about the plugs, they are not goose droppings