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Specialty Herbicide



GOLF



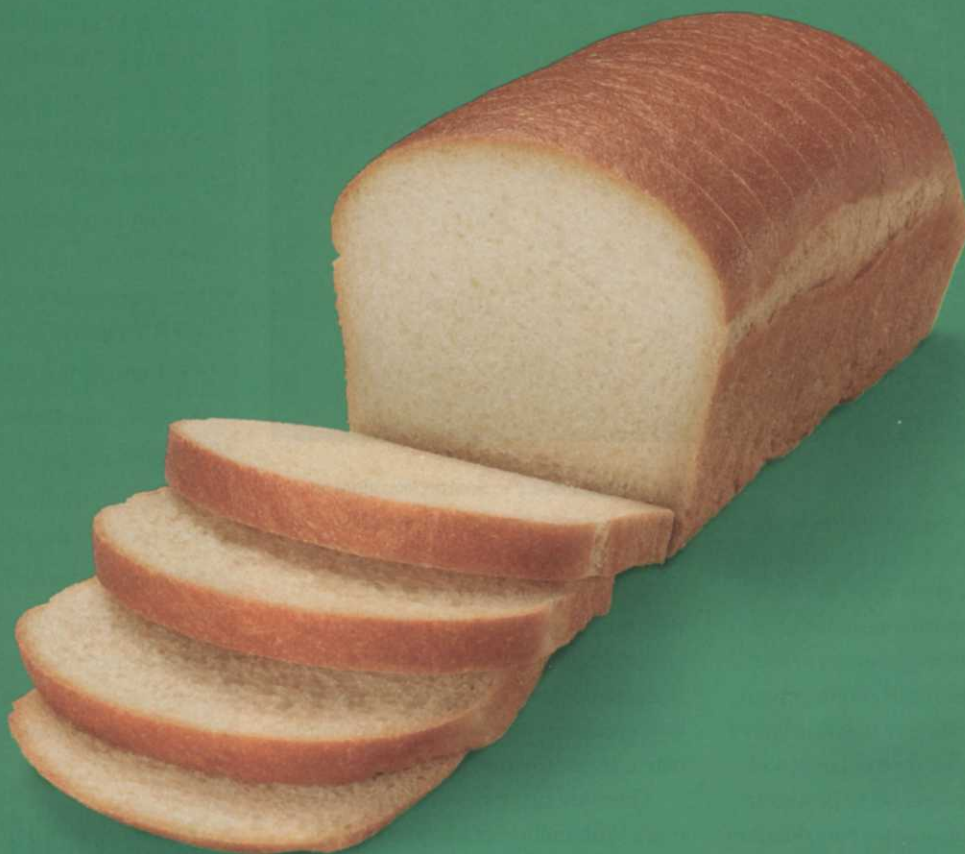
LAWN



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www.DimensionHerbicide.com <sup>®</sup>Trademark of Dow AgroSciences LLC. State restrictions on the sale and use of Dimension specialty herbicide products apply. Consult the label before purchase or use for full details. Always read and follow label directions. ©2006 Dow AgroSciences LLC T38-337-001 (11/06) BR 010-60459 510-M2-432-06

**P R O V E N   S O L U T I O N S**



*continued from page 28*

once installed. As a result, astute landscape professionals should know as much as they can about green roofs to take advantage of the opportunities they offer.

Typically, green roofs consist of four layers: plant media (vegetation), growth media (soil), a module or drainage layer — depending on the type of green roof installed — and a covering to protect the existing roof. There are two basic kinds of green roofs: intensive and extensive.

An intensive green roof is similar to a roof garden. The landscaping may consist of grasses, shrubs, bushes, trees and plants commonly found in a garden setting. With as much as 36 in. of soil, which translates to more than 120 lbs. sq. ft. when fully saturated, these are heavy roofs, and usually the architects and developers must specifically design the building to support them.

Extensive roofs, which are more common, consist of low-growing plants such as sedums and grasses planted in shallow growth media, from two to six inches deep. The plant media is drought-resistant and can vary to accommodate different climates. Extensive roofs are also much lighter, weighing 10 to 40 lbs. sq. ft. when

The Ballard Library in Seattle, Washington. The project was completed by American Hydrotech, Chicago.

fully saturated. Although a structural engineer should always be brought in to evaluate the roof, in most cases, extensive green roofs are light enough to accommodate a given structure.

There are two types of extensive green roofs. With built-in-place green roofing systems, which are actually built on the existing roof, all components are hauled to the rooftop, where several workers then install them.

“The other type of extensive green roof system is a modular system,” McCullough says. “This system uses lightweight modules made of 60% recycled plastic, which come in varying sizes and depths, rectangular and triangular. Growth and plant media are installed in the modules at a local nursery. Brought to the roof, they are then laid out atop the building’s existing roof, one after the other.”

Although both types of extensive roofing systems are used frequently in North America, the modular system is growing in popularity because of some of

*continued on page 34*

## The good



Green roofs provide a wide array of benefits:

- Shading the roof and cooling ambient air temperatures in summer
- Shielding the roof from wind and preventing heat transfer in winter
- Absorbing, retaining, filtering and storing precipitation
- Reducing the temperature of runoff
- Minimizing the impacts of impervious surfaces on watersheds
- Extending the lifetime of roofing membranes
- Increasing the area’s green space and wildlife habitat
- Enhancing the aesthetic of cityscapes
- Improving air quality
- Sequestering carbon dioxide
- Reducing traffic noise through absorption by the soil layer
- Ballasting the roofing membrane
- Mitigating floods in certain regions
- Reducing runoff and the need to expand the urban stormwater infrastructure’s capacity

## The bad



There are several implementation barriers to green roofs. Many include the lack of:

- Information and familiarity with green roof technology, design and function
- Knowledge about maintenance requirements
- Industry standards and design guidelines and specifications
- Qualified designers and contractors
- Incentives to make green roof applications more attractive

SOURCE: U.S. DEPARTMENT OF ENERGY, FEDERAL ENERGY MANAGEMENT PROGRAM  
WWW.EERE.ENERGY.GOV/FEMP

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WORLD-CLASS BACKHOE LEADERSHIP

**50**  
YEARS  
1957-2007

*continued from page 32*

its unique features: it tends to be considerably less labor intensive to install, often making it less expensive, and if roof repairs are necessary, the modules just need to be lifted and then replaced when finished. A built-in-place roof will need the growth and plant media removed from the service area and then restored and replanted — often a labor-intensive project.

“A built-in-place roof can take weeks to build and install,” McCullough says. “With a modular system, as much as 4,000 sq. ft. can be installed per day, which means the entire green roof can be installed on some facilities in a day.”

Landscaping professionals are already taking advantage of the budding green roof phenomena. Growth media for green roofs is now a major business seg-



**6** Oaklyn Branch Library, Evansville, IN **7** Target Retail Store, Chicago, IL.

ment of Midwest Groundcovers in St. Charles, IL. According to Grace Kohler, sales manager with Midwest Groundcovers, the company works with several green roof manufacturers, helping them select the heartiest plant media for different climates and settings. And through their affiliated company, Midwest Trading



Horticultural Supplies Inc. in Virgil, IL, they have tested and engineered special soils that help the plants survive and thrive in different situations and locations.

Landscaping professionals are getting involved in design and installation of high-profile projects. As temperatures soared last summer in New York, break-

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Circle 120

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The Irrigation Innovators



ing records and maximizing demand for electricity, Silvercup Studios where HBO's "The Sopranos" is filmed, was only moderately affected because of the 35,000-sq.-ft. green roof covering. The green roof project at the studio, spearheaded by a New York landscape design firm and installed by a local landscaping company, is part of a yearlong study to evaluate the energy savings and reduced storm water runoff benefits as a result of having a green roof.

In addition, do-it-yourself (DIY)

## Resources

- Greenroofs.com  
[www.greenroofs.com](http://www.greenroofs.com)
- Green Roofs for Healthy Cities North America Inc.  
[www.greenroofs.org](http://www.greenroofs.org)
- Penn State University  
<http://hortweb.cas.psu.edu/research/greenroofcenter/>
- Environmental Protection Agency  
[www.epa.gov/](http://www.epa.gov/)
- American Society of Landscape Architects  
[www.asla.org/land/050205/green-roofcentral.html](http://www.asla.org/land/050205/green-roofcentral.html)
- The Northwest EcoBuilding Guild  
[www.ecobuilding.org/](http://www.ecobuilding.org/)
- U.S. Green Building Council  
[www.usgbc.org/](http://www.usgbc.org/)

green roofing systems are now being introduced offering opportunities for landscape professionals to work frequently on smaller projects.


Growing interest in green roofs provide a whole new industry for landscaping pro-

fessionals. And many will benefit as they look for to the opportunities that are now growing up on the roof. **LM**

— Robert Kravitz is a communications professional working with organizations in the building and professional cleaning industry.

# OUTPERFORM OUTWORK OUTLAST OUTDRIVE

This tough new mini-skid system from Boxer is the irrigation and landscape contractors' toolbox. With over 50 versatile attachments, the 300 Series handles a wide range of jobsite tasks. It is also more than capable of driving a 48" trencher and 36" auger. Trailer packages available, too. Check one out at your local Boxer dealer today or log on to [www.BOXERoutperforms.com](http://www.BOXERoutperforms.com).



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**EMERSON POWER**

Circle 121

# Innovations

TECHNOLOGY

HOT NEW PRODUCTS



1



3



2



4

## 1 Ford tough choices

Ford F-650 and F-750 Super Duty Chassis Cabs can be customized to fit any commercial use. The F-650 and F-750 offer the choice of three cab configurations: Regular Cab, a four-door SuperCab and four-door Crew Cab, each with a wide variety of seating choices. Customers can choose from nine different frames, rated to 120,000 psi. Three diesel engine families allow customers to choose between 5-, 6- or 7-speed manual and 5- or 6-speed automatic transmissions. New in 2007, the engine is a direct-injection, 24-valve 5.9-liter Cummins ISB I-6 diesel with eight power ranges, generating up to 275 hp and 660 lb.-ft. of torque. For more information contact Ford at 800/392-3673 or [www.commtruck.ford.com](http://www.commtruck.ford.com) / circle no. 250

## 2 Eye of the Tiger

Tiger Truck's Champ 4500 has a useful load of more than 3,300 lbs. The cargo bed of the two-door standard cab model is 103 in. by 62 in. with no wheel hump, and is the largest capacity bed in the off-road truck category. While the Champ exceeds all highway requirements, these vehicles are not licensed to be driven off-site, resulting in major reductions in insurance rates, associated unauthorized operating costs and concerns for their after-hours whereabouts. The Champ features multi-speed windshield wipers, heater/defroster, AM/FM radio with multi-speaker sound, 5-speed transmission, hydraulic brakes, turn signals and more. For more information contact Tiger Truck at 866/688-1778 or [www.tigertruck.com](http://www.tigertruck.com) / circle no. 251

## 3 Protect your bed

Wise Industries' BedRug lifestyle performance liner is rugged enough to stand up to gravel, mulch, oil and equipment, but it also can carry golf clubs, grocery bags and coolers so they do not slide around. Made from a weatherproof polypropylene bonded to a molded, closed-cell foam bottom, the cushioned non-skid, non-slip surface grips cargo and holds it in place. The BedRug will not scuff or compromise painted surface, will quickly dry and always be mold-free. By installing BedRug, the truck bed will remain in like-new condition without dents and scratches that threaten the vehicle's warranty. For more information contact Wise Industries at 800/462-8435 or [www.bedrug.com](http://www.bedrug.com) / circle no. 252

## 4 Keep on truckin'

John Deere, truck maker Isuzu and body builder Supreme Corp. are teaming up to offer landscapers a special package of trucks, zero-turn mowers and upfitted equipment. The collection includes three models: the John Deere VanScaper, Stake Bodies and LandScaper. The VanScaper offers a fully enclosed truck body with a fold-down rear ramp. Stake Bodies feature a spring-lock tie-down system and bolted rack connectors that allow one person to remove side rails for accessibility from any direction. LandScaper lets contractors haul large loads, while maintaining high visibility and easy maneuverability for drivers. For more information contact John Deere at 800/537-8233 or visit [www.JohnDeere.com](http://www.JohnDeere.com) / circle no. 253



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**COMMERCIAL POWER**

**Enhancing winter startability**

Most small engines are relatively easy to start in the summer, but for some engines, startability suffers as the mercury drops in the winter months. By paying attention to the little things, including ignition system service, fuel selection and oil weight, you can significantly improve your success in lighting the fire in your equipment this winter.

A problem in any of the engine's major systems can perpetuate issues, but in the winter, the majority of startability problems stem from an issue with the fuel and/or ignition systems. To increase the winter startability of your engines, focus on these areas:

**Spark** – An old, dirty or improperly gapped spark plug can significantly affect starting performance. Installing a new, properly gapped spark plug, and verifying (with a spark tester) the ignition coil is good will help ensure the ignition's ability to light off the fuel/air mixture.

**Fresh fuel** – The fuels at your local station are often blended for optimized performance within a certain temperature range, depending on season. The gasoline you purchase in July has a different vaporization rate than gas purchased in January. Startability is enhanced with fuel blended for the season and climate you're in. Plus, fresh fuel is less likely to contain water or other contaminants that can magnify starting issues. Regardless of season, avoid using fuel more than 30-60 days old. If you have fuel that may be too old to use safely in equipment, you can mix it with a three-quarters full tank of gasoline in a vehicle you drive often. The old fuel will mix with the new fuel and burn, no problem.

**Oil weight** – Consult your owners manual for the proper engine oil SAE weight and API classification. For engines used in climates lower than 40-degrees (F), you'll get easier starting with a multi-weight mineral oil such as SAE 5w-30 or 10w-30. Or you could use full synthetic oil all year long.



*By Mark Nelson,  
Master Instructor,  
Briggs & Stratton Customer Education*

# From the Shop

TECHNOLOGY FUEL FOR THOUGHT

Most small engine manufacturers get nervous when there is more than 10% ethanol in the fuel.



## Know your fuels

BY HARRY SMITH

**F**uel prices and alternative fuels have been in the news for months. Gasoline and diesel prices have a direct effect on our bottom lines. Just about everything we operate needs one fuel or the other. Careful routing of our fleets, reducing the time our equipment spends idling instead of working and keeping our equipment tuned can save us fuel dollars. But what is the effect of some of the additives and alternate fuels we're getting at the pump?

In many places we can buy biodiesel, 10% ethanol gasoline (E10) and even E85 fuel that is 85% ethanol and a mere 15% gasoline. What are some of the cautions and hazards associated with these fuels?

Ethanol is hydrophilic; it loves water. There is frequently a small amount of water residing in the bottom of most gas tanks. This comes from high humidity and/or poor housekeeping. This water is heavier than gasoline, stays on the bottom of the tank and causes few problems. Ethanol, on the other hand, can absorb this water, which can produce service issues.

Because of ethanol's affinity for water better housekeeping is required. Cleaning

fuel cans and tanks more often is a necessity. Ethanol has less energy per gallon than gasoline and evaporates more readily. Faster evaporation is helpful in the winter when cold fuel is reluctant to turn to vapor but not desirable in the summer when too rapid evaporation causes vapor lock. Most small engine manufacturers get nervous when there is more than 10% ethanol in the fuel. Concentrations of ethanol above 10% can have a corrosive effect on metals, plastics and soft parts within the fuel system.

What is the bottom line in all this discussion? Ethanol concentrations above 10% can cause problems in small gasoline engines. If you use E10 and a lot of water is present in your tanks and cans, you can end up with a mix that will not run your engine, but will corrode your carburetor and fuel system. Don't attempt to use biodiesel unless you have verified from the engine manufacturer that your engine will run on it. In many states you cannot avoid E10 gasoline. Every station and brand has it. Keep your storage tanks and cans clean and avoid the problems these fuels can support.

— *The author does industry training in the Workforce and Community Education Department at Lake City Community College, Lake City, FL. Contact him at [harry\\_smith@juno.com](mailto:harry_smith@juno.com).*



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Circle 123

RIDE THE  
wave  
petunias

You've got a lot on your mind planning out the coming season, so indulge yourself a little bit with these nifty toys.



## Cool gadgets to check out

BY TYLER WHITAKER

**I**t's that time of year again for New Year's resolutions, goal setting and year planning. With hard work on such serious activities consuming your time, don't forget to play hard as well. I've collected a list of "must have" gadgets to ensure your work life is balanced with some good clean fun.

### Canon PowerShot SD700 IS

(<http://www.usa.canon.com/consumer/>)

This pocket-sized digital camera works like a champ. The picture quality is foolproof. The battery life lasts all day and then some. The full motion video capabilities mean you can leave your digital video camera at home. I recommend several 1-gigabyte SD memory cards and an extra battery, just in case.



### SwissMemory 1-GB Army Knife

(<http://www.swissarmy.com>)

Carry your data in style with this Swiss Army knife with a built-in 1-gigabyte USB drive. It comes with the standard blade, scissors and a nail file that doubles as a screw-

driver. You'll also find the LED mini light and retractable ballpoint pen handy. Will you ever need to use all of these features at once? No way. But that's not the point. With this knife you'll be ready for anything your business throws at you.



### Bose QuietComfort 3 Acoustic Noise

Canceling Headphones (<http://www.bose.com>)

Whether you fly a lot or work in a noisy office environment, these headphones block out the world and create an environment of peace and quiet. Combine that with Bose's famous sound quality and you've got an incredible sound experience.



### Logitech Harmony 880 Advanced Universal Remote

(<http://www.logitech.com>)

Do you juggle three different remote controls just to turn the TV on? You need a universal remote. This remote can control up to 15 different devices with a helpful LCD screen that's fully programmable. It's even got its own help button to get you back on track. With this remote you may never get off the couch again.

Along with this year's business and personal planning sessions, make sure you budget enough time to relax and uncompress from the daily grind. You'll find that clearing your head will give you great insights into both your business and personal challenges. Hopefully this list of gadgets will help unleash the creative problem solver within.

— The author is a freelance technologist focusing in business automation.

Contact him at 801/592-2810

or visit his blog at

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

