TPI TURFGRASS PRODUCERS INTERNATIONAL

Turfgrass Producers International

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IN THIS ISSUE

- New technology measures turfgrass quality.
- North Carolina agricultural water use favors farmers.
- A Tip of the Hat to friendly competitors.
- TurfMutt - Educating kids on the benefits of lawns.
- Where in the World is TPI Represented — Aliartos, Greece
- Runoff, turfgrass and water quality.
- Attributes of turfgrass.
- Taking turfgrass to a higher level.
- Oregon's grass seed farmers hang tough.
- Vietnam Veteran's Memorial Fund to make improvements on the National Mall.
- 2008 NFL Players opinion survey on playing surfaces
- Artificial Turf vs. Natural Turfgrass — for some athletes it's not a game.
- Does "Cash for Grass" really make CENTS?

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New Technology measures turfgrass quality

Handheld optical sensor proves more expedient than human evaluators

It seems every day brings with it an announcement regarding innovative technology that will improve productivity and save time. That appears to be the case with a new optical sensing device recently introduced to measure the reflectance from turf canopies to determine turfgrass growth, wear tolerance, herbicide tolerance, and fertility.

A new study published in *HortTechnology* assessed a handheld optical sensor (GreenSeeker) for evaluating overall turfgrass quality in three turf species over two growing seasons. The research team of Gregory E. Bell, Dennis L. Martin, Kyungjoon Koh, and Holly R. Han from Oklahoma State University compared the combined time required for visual evaluation and data entry with the time required for the same functions using the handheld optical sensor.

The study was conducted at the Oklahoma State University Turfgrass Research Center in Stillwater.

Visual quality ratings and sensor ratings were collected on schedules prescribed by the National Turfgrass Evaluation Program and included:

- 2002 bermudagrass (Cynodon spp.)
- 2002 buffalograss (*Buchloe dactyloides*),
- 2002 zoysiagrass (Zoysia spp.) studies in 2003 and 2004.

The device incorporated a sensor head mounted to a telescoping pole, a compact PDA (Personal Digital Assistance), a control box, an adjustable shoulder strap, a rechargeable battery and the unit weighed approximately 11 pounds.

The researchers concluded that use of the sensor reduced the time required to complete data collection and data entry by 58% compared with human visual evaluation.

The device was relatively inexpensive and the handheld sensor was very stable and did not require routine maintenance, update, and recalibration. It provided a consistent, objective evaluation of overall turfgrass quality", stated Bell.

Training personnel to use the sensor, including data entry, took less than one hour; training a visual evaluator to conduct the same subjective evaluation can require several days, and evaluators can take months to become proficient.

The researchers added that although the sensor has distinct advantages, there are still reasons to include the human element in turfgrass assessment.

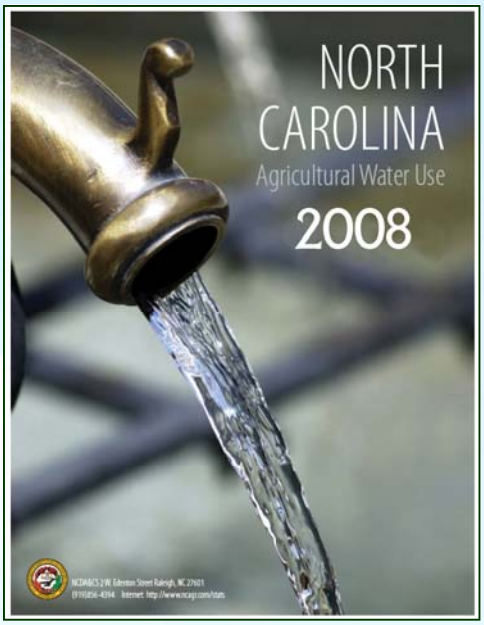
Bell noted that "the handheld optical sensor alone cannot provide necessary information about turfgrass texture or density that can be effectively determined by human evaluators. However, it does provide a consistent measure of reflectance that is primarily affected by a combination of turfgrass color and percent live cover."

"GreenSeeker" handheld sensor collects data and records it to a spreadsheet in a PDA as the operator travels across the turfgrass. Photo by Greg Bell

The complete study and abstract are available on the ASHS *HortTechnology* electronic journal web site: http://horttech.ashspublications.org/cgi/content/abstract/19/2/309

Agricultural Water Use

North Carolina Survey shows farmers only use a fraction of the water



According to the first-ever statewide survey of agricultural water use released by the North Carolina Department of Agriculture and Consumer Services (NCDA&CS), North Carolina farmers use but a fraction of the water consumed in the state each day.

Among water users withdrawing at least 10,000 gallons a day, farmers accounted for about one percent of all withdrawals, the survey showed. "Up until now, basic water use information for agriculture was limited in most areas of the state," said Agriculture Commissioner Steve Troxler. "Our survey found that farmers withdrew an extremely small portion of the water used in North Carolina on a daily basis. While farmers might be watering hogs -- or cattle or crops -- they aren't hogging the water."

Last year the state's General Assembly passed a bill requiring the NCDA&CS do an annual survey of agricultural water use. The department's Agricultural Statistics Division contacted 9,000 farms and received responses from 86 percent. From those responses, statisticians found 1,500 farms that used 10,000 gallons or more of water on at least one day during the year.

The report focused on water from surface sources, such as on-farm irrigation ponds, and ground sources, such as wells.

The data collected by the NCDA&CS represent a variety of water uses on farms, including water for livestock, crop irrigation and aquaculture operations.

The survey showed that average daily withdrawals by farmers totaled 108 million gallons from surface waters and 41 million gallons from ground water. Combined, they accounted for about one percent of the more than 15 billion gallons of water used daily in North Carolina.

Heaviest usage occurred between May and September, which is peak growing season and the hottest time of year. July saw the highest water usage, with farmers collectively withdrawing an average of 365 million gallons per day. Water usage was lowest in January, when farmers collectively withdrew 34 million gallons per day on average.

The percentage of water used by farmers may be even smaller, Troxler said.

That's because the N.C. Department of Environment and Natural Resources, which tracks non-agricultural water use, primarily records withdrawals of 100,000 or more gallons per day, whereas the NCDA&CS surveyed farmers using 10,000 gallons or more per day.

The complete survey results can be viewed at:

http://www.agr.state.nc.us/stats/release/WU2008.pdf

Additional comment:
TPI has 19 turfgrass producing members in the state of North Carolina.

A TIP OF THE HAT to two good natured competitors

We're All TPI Family

No Matter What Hat We Wear!

Although they're competitors, **Ian True** (left) of Trebro Manufacturing and **Gerry Brouwer** (right) of Kesmac/Brouwer exchanged hellos (and hats) during TPI's 2009 Summer Convention & Field Days.

Photo Courtesy of: **Richard Schiedel**
Greenhorizons Group, Cambridge, Ontario, CANADA

Weekly Reader and the Outdoor Power Equipment Institute's Education and Research Foundation Debuts TurfMutt, the Yard Dog Science Program at Washington, DC and Sacramento, CA

The Outdoor Power Equipment Institute (OPEI) today announced the first phase of a new educational outreach program, developed to teach third through fifth grade students the science behind lawns' ability to absorb carbon dioxide (CO_2), release oxygen, cool the air, control dust, reduce erosion and filter water. The science-based youth curriculum includes experiments, worksheets and games for youth and a web site and blog by the program's "spokesperson," TurfMutt.

To see examples of the educational campaign, visit the Resources Page at www.TurfMutt.com.

TurfSide-UP

Sure, tough economic times often impact marketing, promotion and advertising expenditures but . . .

When the TPI staff rented a van to ship material to the Summer Convention in East Lansing, Michigan this past July they took cost savings to a whole new level.

When one member of the staff came up with the idea of putting a TPI banner on the side of the rental van he was advised it wasn't in the budget. He then came up with this innovative idea?

The moral of this story?
When difficult obstacles present themselves there is always one individual who perceives a solution and is willing to take command and think outside the box. Very often, that individual is a bit odd.

Where in the world is TPI represented?

EVERYWHERE!

An on-going series featuring photos and copy from TPI member websites.

Aliartos, GREECE

http://www.hellasod.gr/

"Our aim is to have a positive impact on your life and your environment."

TPI member **Panagiotis Arabanus** is proud to point out that HellaSod is the largest sod producer in Greece as well as the leading constructor company in the sports fields sector.

Their website states they provide quality and reliability through modern facilities, hi-tech equipment, and their team of specialized experts who offer solutions for any type of construction. They also hold an ISO 9001 quality certificate both for the production of sod and its constructions.

Their success is the result of high quality products, reliability, consistency and their strong after sales service.

HellaSod identifies itself as a fully equipped sod producing company handling sports and landscaping projects all over Greece. They were especially proud when they were selected to construct the arena for the Olympic Stadium and othee menus during the Athens Olympics in 2004.

UNIVERSITY OF MINNESOTA

SULIS Sustainable Urban Landscape Information Series

Runoff, Turfgrass and Water Quality

As an ever increasing proportion of our society resides in urban and suburban areas, there is a corresponding increase in the amount of paved and other impervious surfaces.

Consequently, large amounts of poor quality storm water runoff are quickly channeled to storm sewer systems that dump directly into nearby lakes, streams and rivers. This can significantly contribute to decreased water quality in the receiving water bodies through sedimentation and pollution. Lawn grasses provide one of the most effective groundcovers available to prevent erosion and increase water infiltration into the soil.

Environmental Benefits of a Healthy Lawn

Lawn areas around homes help provide for a family's outdoor recreational needs. They provide aesthetically pleasing backdrops for other landscape plantings as well as many environmental benefits. One of the most significant of these is the ability to stabilize soil against water and wind erosion. For these and other reasons mentioned below, lawn areas are an important part of preserving and protecting soil, air, and water resources.

Research over the last ten years has demonstrated that storm water runoff from a healthy, relatively dense lawn rarely occurs, even on modest slopes. In fact, in all but very intense rainfall occurrences, storm-water runoff from a healthy, relatively dense lawn is at or near zero. However, some notable exceptions to this include very steep slopes, saturated soil conditions, severely compacted soils and frozen ground. While the total quantity of runoff water is reduced, increased water infiltration also reduces runoff velocity, thereby reducing the amount of sediment carried in runoff.

Not only does increased water infiltration help protect surface water quality, it also helps recharge groundwater supplies. In addition, the dense, fibrous network of roots helps to trap and remove nutrients and other pollutants from water moving down through the soil. This filtering effect can actually improve water quality as it moves through the turfgrass root zone.

Attributes of Turfgrass

Natural turfgrass has many attributes that make its use in the landscape desirable.

- Its deep green carpet-like growth enhances other landscape features.
- It imparts a feeling of spaciousness and gives width and depth to landscapes.
- No other living groundcover is as durable as turfgrass.
- The growing point of turfgrass rests at ground level, allowing it to thicken and recover from foliar damage.
- The 8.5 million grass plants in a healthy 10,000-square-foot lawn absorb 6,000 gallons of rainwater.
- An average golf course of 150 acres can absorb 12 million gallons of water during a 3-inch rainfall.
- Every 2.5 acres of golf course turf sequester about one ton of carbon from the air per year.
- Earthworm populations of 200 to 300 earthworms per square yard are common in turfgrass lawn. They increase the amount of macropore space within the soil, which results in increased soil water infiltration rates and water-retention capacity.
- U.S. lawns remove 5 percent of carbon dioxide in the atmosphere.
- Grass traps more than 12 million tons of dust and dirt annually. Trapped particles also include allergens such as plant pollen.
- A 250-square-foot lawn produces enough oxygen for a family of four.
- Eight average-size lawns have the cooling effect of 70 tons of air conditioning.

-- Howard Siegrist, Ohio State University Extension

As featured in the Newark Advocate July 16, 2009

Taking turfgrass to a higher level

Winter Park, Florida is known for its charming outdoor cafés, bistros, upscale specialty shops, boutiques and beautiful parks as well as its innovative use of architectural design combined with nature.

Claus Zander of Zander Sod in Kettleby, Ontario took these photos during a visit earlier this year that reflects Winter Park's somewhat innovative use of turfgrass.

Photos: Claus Zander

Oregon's Grass Farmers Hang Tough During Tough Times

When housing starts collapsed last year, landscapers stopped planting lawns. Golf courses stopped reseeding. Ranchers planted less grass to feed fewer cattle. Prices plunged for grass seed that growers had raised using the highest-priced fuel in history, costs further inflated by an ethanol boom that made fertilizer expensive and farm equipment scarce.

"The '08 crop was the most expensive crop we ever grew, and we're not going to get that back," commented seed producer Harry Stalford. "Just about every pound of seed I sell right now, I'm losing money on."

Farmers are accustomed to battling slugs, cutworms, voles, weeds, bugs, birds, skunks and rust. Now they're contending with Midwest and Canadian competition, poor East Coast grass-growing weather, homeowners replacing lawns with vegetables, tight credit, a field-burning ban, depressed foreign markets and currency-exchange rates that hurt exports. As a result, seed growers and traders are stuffing more than 100 million pounds of year-old seed into barns and warehouses as farmers bring in this year's crop of more than 500 million pounds. The stored goods attract poison-resistant mice that chew into bags and nest in seed that must be re-cleaned and re-bagged.

Unemployment in the heart of grass-seed country in the Williamette Valley of Oregon, climbed to over 15 percent in June, more than twice the level of a year before afflicting Oregon's $500 million grass-seed crop. "I haven't seen this happen in my lifetime," said seed producer George Pugh, 66. Pugh grows enough seed each year to plant roughly 3,800 football fields. "My dad was a Depression-era kid. He warned me there'd be days like this."

About 1,350 Oregon farmers grow grass seed. More than 50 dealers buy and sell it. In 2008, grass seed amounted to Oregon's third-most valuable crop, behind nursery products and hay.

Decreased demand for grass seed has had an impact on seed producers and traders.

Josh Davidson, a sixth-generation farmer, started farming on his own 15 years ago. "I had some pretty tough times at the beginning of my career," said Davidson, 35, "when I didn't know from year to year whether I was going to make it."

Davidson has never questioned his decision to farm. He says there's something special that he can't put into words about planting, nurturing and harvesting seed. The father of five plans to hand his spread to a seventh generation.

"I'm going to encourage each one of my children," Davidson said, "to carry on the profession."

Adapted from Jerry Casey article in The Oregonian
August 01, 2009

DID YOU KNOW?

Three hundred trout are needed to support one man for a year. The trout, in turn, must consume 90,000 frogs, that must consume 27 million grasshoppers that live off of 1,000 tons of grass.

-- G. Tyler Miller, Jr., American Chemist (1971)

National Mall—Update

VIETNAM VETERANS MEMORIAL FUND

MEMORIAL FUND TO MAKE IMPROVEMENTS ON THE NATIONAL MALL

Washington, D.C. – The Vietnam Veterans Memorial Fund is taking steps to improve the condition of the lawn at the Vietnam Veterans Memorial, as well as on the five-acre site that is the future home of the Education Center at The Wall, said Jan C. Scruggs, founder and president of the Memorial Fund. Overall, the Memorial Fund's efforts will improve approximately 13.5 acres on the National Mall.

Work will begin during the end of September to replace defective sprinkler heads on the current irrigation system, which waters the grass above The Wall and in front of it. Weed treatment is also expected to commence before month end, the first part of a multi-phase plan to improve the grass on the site.

The Memorial Fund has been conferring with the National Park Service, the stewards of the National Mall, and JC Cummings, the architect of record for the Vietnam Veterans Memorial, since late summer to determine what needs to be done and find experienced companies to perform it.

"We are sorry to see the National Mall in this condition," said Scruggs. "But we also understand that the upkeep of a park as big and as heavily visited as the National Mall is an expensive undertaking. The Memorial Fund is happy to help and will set a new standard for lawn care on the National Mall."

The Memorial Fund also has contracted to water the lawn in areas not currently served by an in-ground irrigation system. Irrigation is in place only for the area on top of and in front of The Wall. Investigations are being made into the cost, labor and inconvenience involved in modernizing the current irrigation system and expanding it to include the knoll area east of The Wall.

The Vietnam Veterans Memorial Fund will pay for all of these improvements out of private funds and is seeking corporate sponsors for long-term improvements and quality lawn care for the next decade.

The idea for taking responsibility for lawn care at the Memorial came after Scruggs and Peter Holt, who is the chairman of the campaign to build The Education Center at The Wall, read news reports lamenting the condition of the grass on "America's Front Yard." *(see TPI E-newsletters from February 2009 and April 2009).*

The two conceived of the idea to help the National Park Service with this monumental task by volunteering to provide first-class lawn service for the Memorial site and the future site of the Education Center at The Wall. In fact, plans for the Education Center will include providing lawn care services in perpetuity.

Grass above the Vietnam Veterans Memorial (top photo) and grass around the memorial (bottom photo) will be part of the improvements being undertaken by the Vietnam Veterans Memorial Fund.

NOTE: As this issue of the newsletter was ready for release, Kirk Hunter, TPI's executive director was in Washington D.C. as part of the National Turfgrass Federation to discuss numerous issues of importance including EPA's Water Sense as well as the status of the National Mall.

2008 National Football League Players Playing Surfaces Opinion Survey

The National Football League (NFL) Players Association released its 2008 NFL Playing Surface Opinion Survey during team meetings in September through November 2008. A total of 1565 active NFL Players from all 32 teams voluntarily filled out the survey forms. The following are some of the survey findings:

	GRASS	ARTIFICIAL
• Which surface do you think is more likely to contribute to injury?	13.7%	84.8%
• Which surface do you think causes more soreness and fatigue to play on?	7.2%	91.0%
• Which surface do you think is more likely to shorten your career?	5.3%	92.6%
• Which surface do you think is more likely to negatively affect your quality of life after football?	2.6%	61.6%
• What type of field do you prefer to play on?	71.7%	15.0%

	VERY SIGNIFICANT	SOMEWHAT SIGNIFICANT	NOT SIGNIFICANT
• How important a role do you believe NFL groundskeepers play in the performance of NFL grass playing surfaces?	84.6%	11.3%	0.9%
• How important a role do you believe NFL groundskeepers play in the performance of NFL artificial infilled playing surfaces?	24.7%	49.2%	18.1%

	STRONGLY VALUE	SOMEWHAT VALUE	DO NOT VALUE
• How much do you value your grounds crew's work on your game and practice fields?	73.8%	21.3%	3.96%

Excerpts from Top Comments/Suggestions from Participating NFL Players

"Grass is probably preferred by most players, including myself."

"I feel that a grass field that is very well maintained is the best field to play on."

"If a cow cannot eat it, we shouldn't be playing on it."

"Create universal guidelines for both grass and turf (artificial) fields."

"The artificial infilled field always starts out great like our field was the first year we put it in. But, after two years of soccer games and concerts, the field is a mess."

To view the survey results visit: http://www.synturf.org/images/2008_NFLPA_Surface_Survey.pdf

Artificial Turf vs. Natural Turfgrass

For Some Athletes It's Not a Game

There's no denying that professional athletes know something about field playing surfaces and they have their own preference as to what they like or don't like. *(See NFL Players survey on previous page).* It would also appear that professional athletes in Canada agree with their U.S. counterparts when it comes to what that preferred playing surface actually is.

According to a recent report in the Toronto Star, BMO Field, home to the MLS Toronto FC as well as Canada's National Soccer Team is expected to replace its FieldTurf field after only two years with natural grass.

The Star reported that the board of governors of Exhibition Place, where BMO Field is located, voted in favor of a proposal by TFC owner Maple Leaf Sports & Entertainment to replace the artificial turf at the city-owned stadium in time for next season.

According to sports reporter Daniel Girad, (September 12, 2009) the field spurred controversy even before in opened in April 2007 because of the artificial FieldTurf.

Girad suggested that criticism of the field intensified this season as TFC officials and players, led by star Dwayne De Rosario, have said it must be replaced.

"When I see it, I'll believe it," De Rosario said with a laugh when told of the timetable to get the artificial surface replaced for next season.

But teammate Adrian Serioux, along with Danny Dichio, who announced his retirement earlier this week, said "it's great to see so many people are backing us" in the push for natural grass.

"If we get this then it's really just up to us to just go out and perform and produce what they deserve from a team," Serioux said.

Dichio, who said he moved into a coaching role in part because his body couldn't withstand the pounding of the turf, called it "a massive day for the club."

Reinstating Your TPI Membership

If you missed the September deadline to renew your 2009-2010 TPI membership, you still have time to reinstate it and be included in the printed and online membership directory. You must contact Susan Hall, Membership and Marketing Manager, this week, at 847/649-5555 or via e-mail at shall@TurfGrassSod.org.

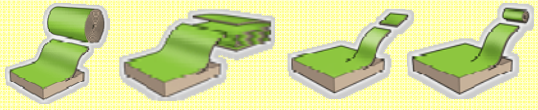
You can reinstate your TPI Membership dues in one of three ways:

1. Mail check (U.S. funds) to TPI, 2 East Main Street, East Dundee, IL 60118 U.S.A.

2. Credit card (Visa, MasterCard or American Express)

3. Wire transfer (e-mail shall@TurfGrassSod.org to request instructions)

With your membership reinstatement, TPI can continue to help you and your industry promote the benefits of turfgrass to consumers, contractors and green industry professionals, and provide you with valuable continuing education programs and services.



Send us a photo of your LICENSE PLATE(S)

If you have a license plate(s) with the words turfgrass, grass, lawn, sod, green or any variation please send us a photo for our collection.

E-mail your photo(s) to
jnovak@TurfGrassSod.org
or mail them to:
TPI E-Newsletter
2 East Main Street, East Dundee, IL 60118 USA

Does "Cash for Grass" Really Make Cents?

by Susan Harris - Sustainable Gardening - August 15, 2009

Tom Hawkins is a San Clemente, CA horticulturist and the owner of Florasource Ltd.,a supplier of young plants for nurseries and gardens.

The recently implemented "Cash for Grass" program by the City of Los Angeles (D.W.P.) is an earnest attempt at addressing the limitations of our state water supply and the tremendous waste of water in our urban landscapes. But is this based upon sound science and is it a good investment in the long term?

Past city incentives have included synthetic turf rebates, an interesting choice considering published research which points to both environmental and personal health problems that can come with this product. The current program doles out cash when turfgrass is removed and replaced with "something besides turf". Per the program guidelines, acceptable turf substitutes may include various drought tolerant groundcovers or native plants; emphasis is placed on plants that require a minimum of 15" of water per square foot per year.

Is turfgrass the problem, or is it the type of turfgrass we find in our California landscapes? With very few exceptions, California's residential and commercial lawns are all "exotics", coming from outside of North America. These turfs include Tall Fescue (Europe), Blue Grass (Europe), Bermuda Grass (Africa), Zoysia (Philippines), Seashore Paspalum (tropical Americas), and St. Augustine (West Indies, West Africa). All of these grasses come from areas with much higher rainfall than California. Of these, tall fescue is our most common landscape turfgrass state-wide, and this grass type is also one of the most water-requiring, using upwards of 40" to 50" of water per square foot per year.

"Numerous studies have shown turfgrass to provide the greatest evaporative cooling effect of any planted landscape."

Do we need to give up our lawns? Should we give up our lawns? And is this rebate truly directed at replacing turf with something smarter and for the long run? Temperatures in cities around the world are on the rise due to the urban heat island effect. Numerous studies have shown turf grass to provide the greatest evaporative cooling effect of any planted landscape. Turf also reduces water runoff, increases ground infiltration, and helps to purify water before ground water recharge.

What about using a much more water-friendly turf, such as a native Carex or buffalograss? Years of research at UC Davis and Riverside resulted in a buffalograss selection called 'UC Verde'; this grass has been shown to get by on just 12" of water per year, makes a beautiful groomed turf at 2-3" tall, or it may be grown as a short meadow at 6" in height. The water savings is 75% over tall fescue lawns…that's huge.

Finally, what of the economics of a Cash for Grass program? According to the L.A. Times, Southern California water managers were impressed by the Cash for Grass program in Las Vegas, where water officials report more than 125 million square feet of turfgrass has been removed at a rebate cost of $1.50 per square foot, saving 7 billion gallons of water per year. This is effectively spending $187 million dollars to offset 7 billion gallons of water use, but with the end result of giving up lawns entirely.

The estimated cost of switching out an existing lawn for a more environmentally correct lawn variety comes to less than $0.75 per square foot, all the while allowing for the long term benefits of turfgrass and without adversely affecting our local climate. This may make sense (and cents) at almost anytime, but especially so when expenditures and climate change are daily concerns.