Broadleaf Weeds in Lawns: The Two Usual Suspects

Evaluation of Some New Bentgrasses for Putting Greens

Chris Lessig Receives the 2016 KAFMO Fowler Founders Award
“Penn State gave me the skills I need to prepare courses for the world’s best golfers.”

Mike Giuffre,
Director Green and
Grounds Maintenance
Congressional Country Club

Get the edge you need to succeed in turfgrass management in just 18 months.

turf.psu.edu/apply

Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.
THIS IS OUR TURF

Fisher & Son Company, Inc.

Supporting golf, lawn, landscape, turf, and property professionals since 1928.

800-262-2127 • FISHERANDSON.COM
The Progressive ADVANTAGE

Features to reduce your cost of operation over the long haul
An extensive Dealer network that you can rely on
Widest range of rotary finishing mowers available from one source
Proudly designed and manufactured in North America

The Slope-Pro® is a steep slope, rotary mower capable of 50° slopes. Designed and built by Progressive Turf Equipment and is another example of our forward thinking.

Tri-Deck cutting widths:
12", 15.5", 22", 36"

Roller Mower cutting widths:
65", 90", 12", 15.5", 22", 29.5"

Contour / rough finishing mower:
Pro-Flex™ 120B 10' cut

Steep Slope mower:
Slope-Pro® 52' cut

Available with bolt-on galvanized deck shells

Contact us for more information or to find an Authorized Dealer near you.

www.progressiveturfequip.com
info@progressiveturfequip.com
(800) 668-8873 (519) 527-1080
fax: (519) 527-2275

Outsmart Mother Nature... Year Round!

EVERGREEN™ TURF COVERS

With 30 years of field proven experience and the longest warranties, EVERGREEN™ from COVERMASTER is the smart choice

SMART EDGE TECHNOLOGY™
• Hems and grommets are not required
• Unlike Polypro fabrics, EVERGREEN™ will not unravel
• Can be cut to custom sizes and shapes on site
• Anchor pins can be placed anywhere on the cover

UNIQUE DESIGN CREATES A TRULY 4-SEASON TURF COVER
• Winter blanket • Early spring green-up • Summer overseeding & repair • Frost protection • Extend your growing season

BE SURE TO ASK FOR EVERGREEN™, THE ONE WITH COLOR
• Provides additional light spectrum benefits for the turf
• Choose color based on your climate

Can be cut or shaped without fraying thanks to Smart Edge Technology™
The with and without look of natural turf using the EVERGREEN™ cover

Call Toll Free: 1-800-387-5808
Intl: 1-416-745-1811 • FAX: 416-742-6837
E-mail: info@covermaster.com
www.covermaster.com
© 2017 Covermaster Inc.
Sometimes, we witness events that shock our perspectives back into focus. A lot of good can come from these sobering moments. Sometimes, they are life altering, but too often they are short lived. We realize that maybe there are some things we could do differently. We wrestle with the question, “Why is this happening to them, and what would I do if it were me?”

Recently, I found myself in one of these moments. I was flooded with thoughts and emotions about time with family, thinking back to how much time this industry takes away from what is important. I know there is nothing I can do to change the past except understand how it happened.

Both of my kids grew up on the golf course. We spent a lot of time together. My son was a freshman in college before we ever took a family vacation together to the beach. Five days away from work in August. When I returned, the course was still there. Granted, I worked like a dog beforehand, getting ready to go away, and I threatened my crew with my expectations. It made me realize I had missed so many family opportunities because of some perception about being at work. If worst-case scenario had happened, I would have driven back. We were only four hours away. I probably would have made a round trip for a far more minor hiccup.

Turf managers require peace of mind, and seeing is believing. There are times when we just can’t get away. Our schedules get crazy, and the weather gets intense, so we live at our facilities. We understand what’s at stake. But what is our excuse the rest of the time? Do we actually work for monsters who prefer us not attend a seminar or chapter meeting, visit another facility or take time off with our families? Most of our employers know we are willing to do whatever it takes to produce the conditions they want. Some don’t care what toll it takes on us.

For me, I guess I’m the monster. The pressure has always been self-inflicted. It has always been difficult for me to achieve that balance between time with my family and the work it takes to provide for them. This industry can steal a decade from us quickly if we allow it. We can’t hit the rewind button. Life isn’t a DVR. I am the only one who can change the future.

My perspective changed as I sat in the back of a church watching a close friend and colleague bury his young son taken by cancer. My condolences to Jon Szekeres and his family.

Pete Ramsey
2017–2018 PTC President
PTC Invites You to
— BECOME A MEMBER! —

By joining the Pennsylvania Turfgrass Council (PTC), your club or company, or you as an individual, become part of an organization dedicated to promoting professionalism in all aspects of the turfgrass industry and support of the Center for Turfgrass Science at Penn State University.

- PTC provides educational opportunities for practitioners in all turfgrass-related industries.
- PTC provides grants and other support for education and research programs at Penn State University.
- PTC encourages future industry leadership by granting scholarships and awards.
- PTC acts as a liaison to the green industry by promoting open dialogue with government agencies, private institutions and the general public.

PTC Invites You to
— BECOME A MEMBER! —

PTC provides educational opportunities for practitioners in all turfgrass-related industries.
PTC provides grants and other support for education and research programs at Penn State University.
PTC encourages future industry leadership by granting scholarships and awards.
PTC acts as a liaison to the green industry by promoting open dialogue with government agencies, private institutions and the general public.

MEMBERSHIP CATEGORIES

Individual — $50 annual dues
For the green-industry professional who wants to be part of the Council and support its activities.

Sustaining — $200 annual dues
For the business or turf professional who takes an active role in promoting the profession of turfgrass management, professional development and educational opportunities in the turfgrass industry.

Partner for Growth — $400 annual dues
For the business or club that desires a stronger affiliation with the Council and the Penn State Turfgrass Science Program.

Join online today, or renew your current membership at — www.paturf.org/membership
The membership year is January 1 through December 31.

Bill Mast
Cell: 610-608-8319
bmast@aer-core.com

Steve Thompson
Cell: 610-972-5933
sthompson@aer-core.com

Office: 610-327-3390 • Fax: 610-327-0581
1486 S. Hanover St. • Pottstown, PA 19465 • www.aer-core.com

Specialized Turfgrass Services

- Deep Tine - Solid and Coring
- BLEC Ground Breaker Linear Aeration
- Traditional Shallow Coring
- Sandmaster Drainage
- Drill & Fill
- Top Dressing
- Seeding
- Verti-Cutting
- Total Rergrassing
Western Conference had education sessions for golf courses, athletic fields and the lawn and landscape industry. We had great speakers, which allowed attendants to receive pesticide credits in several categories during the education sessions. GCSAA continuing education credits for golf course superintendents were also awarded. The attendance for the three days of the Western Conference exceeded 700 people.

The trade show was held the first two days of the conference. Twenty-seven vendors utilized 35 tabletops to display their product information. The PTC sponsored a Social Reception, which was held at the end of the first day of education sessions. The reception gave the vendors and attendees an opportunity to interact in a relaxing atmosphere.

The second day of the conference consisted of a continental breakfast with the exhibitors in the morning and the Silent Auction concluding in the afternoon. We thank all those who donated and participated in the Silent Auction. All proceeds are contributed to the PA Turfgrass Council in support of Penn State’s research, extension and teaching program for turf professionals.

The 2018 conference will be held on February 27–28, at the DoubleTree by Hilton in Mars, PA.

Thank you to all who attended, exhibited at and sponsored the 2017 Western Conference and Trade Show!
MAIN EVENT™
Plant and Soil Nutrients
100% Chelated * Non-Staining * VAM Sustaining
MAIN EVENT DRY IRON
MAIN EVENT DRY MANGANESE

“I use Main Event for quick green up and extended color.”

“İ use Main Event Iron and Manganese on my course for fast green up, it lasts 4 weeks on greens and up to 8 weeks on fairways.”

For use on:
Trees, landscape plants, golf course tees, greens, fairways, and sports turf.

Please call or visit the website for additional information on products or programs.
785-542-2577
www.QuestProducts.us
bi-model growth of cool-season grasses such as Kentucky bluegrass and tall fescue translates to a strong, competitive lawn in the spring and fall, but one that’s weak and prone to weed invasion during the heat and drought stress periods of the summer months. Broadleaf weeds seem to emerge within and above the turf canopy and take over and out-compete our desired yet vulnerable lawn. Of course, broadleaf weed control in lawns should always start with sound cultural-management practices to promote healthy, dense and competitive turf. While there are many, many broadleaf weeds that can invade a cool-season lawn, these two are the most common and often the most talked about.

Common dandelion (Taraxacum officinale)

We have all heard these familiar phrases: “A weed is a plant out of place” or “A weed is a plant whose virtue is yet to be discovered.” With the common dandelion, I suppose the flowers can be used as a vital component of dandelion wine, or the leaves can be part of a natural organic salad, and even the milky sap in the stems can be extracted as an alternative source of latex. The bright yellow flowers appearing in the spring signal that warm weather is upon us and that summer is on its way. It seems that every young child enjoys plucking a dandelion seedhead and helping those miniature “parachute seeds” spread all over the place!
The dandelion is a perennial problem in lawns, but the lifecycle is botanically classified as a biennial, with a vegetative stage the first year and the reproductive or flowering stage the second year. Note, the USDA’s Plants Database lists the “duration” of dandelion as perennial (https://plants.usda.gov/about_plants.html). In the vegetative stage, it grows in a somewhat circular form or bunch type called a rosette. The dandelion also possesses a taproot. When physically pulling this weed by hand, be sure to extract the majority of that stubborn taproot. If not, the remaining portion of that taproot will sprout into one or more new, vegetative rosettes.

What can you do to control dandelions in the lawn? Maintaining dense, healthy turf should be the first line of defense. This would include adequate fertility and proper mowing height and frequency to ensure maximum turf health and reducing any voids in the turf stand.

With mowing, a 3” to 3.5” height of cut helps give the turf a competitive advantage against weeds, and the one-third rule still applies: mow frequently so as not to remove more than one-third of the top growth at a time.

The dandelion has adapted to our typical lawn heights of cut, so don’t try to scalp the lawn, hoping to physically beat up the dandelion. This weed will adapt, and the scalped lawn only helps it to gain a competitive advantage. Any open space in a lawn is an opportunity for a weed like the dandelion to establish a beachhead and begin its invasion.

Allowing other weeds like crabgrass to take over will lead to future voids in the turf, and diseases and insect pests can also weaken the turf. It is important to note: preemergence crabgrass herbicides will not prevent dandelion and other perennial broadleaf weeds from appearing in lawns.

**White clover** *(Trifolium repens)*

White clover has a perennial lifecycle, and it spreads by above-ground stems,
which we know as stolons. The leaf of
a white clover is actually three leaflets,
and it’s a favorite game for little chil-
dren to look for a four-leaf (leaflet)
clover in lawns. The small, white, globe-
like flowers can be visible in lawns
from May through September. A thin
turf stand and an under-fertilized or
“hungry” lawn is an open invitation
for white clover to emerge and quickly
spread by its aggressive stoloniferous
growth habit.

White clover is a legume, and by
nature it likes a low-nitrogen soil envi-
ronment. Even though it’s considered
a legume (i.e., plants that fix their own
nitrogen in the soil), it’s not a soybean
in that it doesn’t produce the amount
of nitrogen in the soil the way a soy-
bean crop would, leaving behind a
generous amount of nitrogen for the
next crop.

What can you do to control white
clover in the lawn? Physical removal
can be a never-ending task, since those
stolons can be everywhere, and even
the smallest portion left behind would
result in a re-invasion of white clover.
White clover control starts with nitro-
gen. A fertility program that favors
maintaining healthy, dense, competi-
tive turf is the best way to keep white
clover under control.

A soil test is always recommended to
see if the pH is too low, and therefore
lime would be needed to get the pH
where it needs to be (i.e., 6 to 7) to
favor a healthy lawn. A soil test could
also reveal other nutrient deficiencies
that could be corrected through fer-
tility practices.

Postemergence control
with broadleaf herbicides

What about herbicides to control
broadleaf weeds in lawns? Botanically
speaking, the best time to use a post-
emergence herbicide is in the fall. At
this time, these weeds are trying to
shuttle carbohydrates down into their
crowns and roots and provide a sort
of anti-freeze for the coming winter.
Applying an herbicide in the fall —
most likely mid-September to early
November — will result in the active ingredient getting translocated down into the plant and roots, thereby favoring complete kill.

The second best time to use a post-emergence herbicide is late spring to early summer. Spring applications require further attention to detail — use caution when using herbicide products near flowers, ornamentals, trees, shrubs and vegetable gardens because damage can occur to these plants due to drift, volatilization or accidental direct contact.

Most postemergence broadleaf weed products contain the active herbicidal ingredients 2,4-D, MCPP (mecoprop), or dicamba, in various combinations, forms, concentrations, amounts and proportions. This so-called “three-way” combination has been a staple of post-emergence broadleaf weed control in lawns for many, many years.

The active ingredients carfentrazone, sulfentrazone and quinclorac have also been added to various combinations of those mentioned to expand the spectrum of weed species controlled in lawns. Other herbicide compounds are always being tested and evaluated for broadleaf weed control in lawns. Broadleaf weed control products with multiple active ingredients will control a longer list of weeds compared to a product with a single active ingredient. It is important to read the product label to see which weeds are controlled and which weeds are not and to understand the product label, and also it is very important to follow the instructions on the product label.

Some points to consider with using postemergence herbicides for ensuring optimum broadleaf weed control in lawns include:

- Apply those products to young, actively growing weeds.
- Make an application on a calm day with no wind and the air temperature is between 50°F and 80°F.
- Avoid applying to lawns with low soil moisture (i.e., good soil moisture equals actively growing weeds that will take up those herbicide active ingredients, and turf will not be as susceptible to injury).
- Don’t apply to newly seeded turf until the lawn has been mowed at least three times, or to a newly sodded lawn for at least four to six weeks.
- When applying a broadleaf herbicide product to a lawn, delay mowing a...
Leading Edge Communications

where spirited talent brims with fresh ideas. Award-winning branding solutions and stellar service have earned LEC its spot as a premier full-service web, print and publishing firm. Professional research clients agree that our approach to strategic marketing has given them the leading edge in today’s marketplace.

Our core team of creatives has extensive experience in producing world-class output for a wide range of media. Discover the breadth and depth of our capabilities, from integrated corporate identity solutions to leading-edge, high-tech solutions and everything in between.

Leading Edge Communications can reach your target audience with a strategic message that yields results. For more information call 615.790.3718 or email info@leadingedgecommunications.com

LEADING EDGE COMMUNICATIONS
206 Bridge Street
Franklin, TN 37064
Phone: 615.790.3718
couple of days before (i.e., to ensure that the weeds will get maximum contact with the herbicide) and after (i.e., you don’t want to mow off the weeds before the herbicide has a chance to translocate).

- If it rains within 24 hours of an application, consider reapplying if no visible weed injury is noticed within one to two weeks.

In conclusion, use the growth habit of cool-season lawn turf — optimal growing conditions in the spring and fall — to gain a competitive advantage in broadleaf weed control. Remember to consider your turf needs for fertility, proper mowing height and frequency and possibly overseeding to fill in voids. This could assist the lawn during the summer months when it’s still growing but much less aggressively compared to spring and fall.

For postemergence herbicide applications, pay careful attention to the product label in terms of application rate, timing, environmental and turf issues, safety issues and more. As the lawn becomes more competitive over time, consider excluding some herbicide applications if the weed population is at an acceptable threshold.

References
Save your turf, your time and your money. The Love Your Turf Early Order Program from AMVAC® will be back to rescue you from the headache of setting up your disease program. Don’t miss out; sign up this fall for the 2017-2018 season to take advantage of the savings.

To learn more about the AEP turf portfolio, visit LoveYourTurf.com today.
Evaluation of SOME NEW BENTGRASSES FOR PUTTING GREENS

By Peter J. Landschoot, Ph.D., Professor of Turfgrass Science, Penn State University

Whether you are renovating 18 putting greens or just overseeding one green that sustained damage from a disease or winterkill, choosing the right bentgrass cultivar is critical for the long-term performance of your putting surfaces. Over the past two decades, the number of commercially available bentgrass cultivars has increased, and there are now more than 40 creeping bentgrass cultivars, up to 12 colonials and about half a dozen velvets on the seed market. Having so many choices is a good thing, but now you have to do some homework on which bentgrass is right for your situation.

Getting reliable information on turfgrass cultivar performance is a challenge for golf turf managers. Seed company reps are usually a good source of information on their own cultivars but probably not for cultivars from competing companies. You can visit golf courses that have used the cultivar(s) of interest and see the results firsthand. Keep in mind, however, that these courses may not have the same conditions and resources as yours; thus, the results at your course may be different. Be sure to talk with USGA agronomists and/or consultants who visit numerous golf courses and see a variety of grass types and management conditions.

Another source of information includes trial data from the National Turfgrass Evaluation Program (NTEP). NTEP is an industry-sponsored organization that coordinates tests of turfgrass cultivars and experimental selections at universities across the U.S. Data generated from these tests provide turfgrass managers, seed industry representatives and other interested persons with information about turfgrass characteristics and performance. Although this is an intermediate step in the evaluation process (the program can’t simulate all the traffic and management conditions found on golf courses), the program does provide good comparative information on seedling vigor, quality, density, color, disease and insect tolerance, and other parameters.

2008–2013 bentgrass putting green test at Penn State University

In September 2008, nineteen bentgrass cultivars and selections were established at the Joseph Valentine Turfgrass Research Center in University Park, PA, as part of a five-year NTEP test. Entries were supplied to NTEP by private seed companies and were seeded at 1.1 lbs.
Summary of results
Data for evaluation ratings are presented in Tables 1 and 2. All cultivars listed in these tables are commercially available except AFM and SRP-1 BLTR3.

Turfgrass quality
V-8, Barracuda, Luminary, Pure Distinction, Focus and Proclamation tended to receive the highest average quality ratings from 2009–2013 (Table 1). These cultivars generally ranked higher than other entries primarily due to their superior density, fine texture and uniformity. Two velvet bentgrasses — Villa and SR 7200 — performed poorly over most of the five-year test period.

Seedling vigor
Seedling vigor in September 2008 was greatest with Proclamation, L-93, Penncross and Declaration; however, ten other cultivars and selections showed seedling vigor that was very close to these four cultivars (Table 2). Cultivars that were slowest to establish were V8 and Penn A-2. By the end of the growing season, most of the plots in this test showed complete turf cover and were able to tolerate daily mowing.

Turfgrass color
Turfgrass color ratings show that T-1 had the darkest green color, followed
Golf Course Notes • continued

By PinUp (Table 2). Pure Distinction and Villa exhibited the lightest shade of green. Although the genetic color of a cultivar does not influence putting performance, it can make a difference in the aesthetic appeal of the green. Whereas most people tend to favor darker green over lighter green, *Poa annua* tends to stand out more in darker-green stands and can detract from the visual appearance of the putting surface.

Color can also be an important factor when blending two or more cultivars. Bentgrasses tend to segregate over time, and a light-green cultivar blended with a dark-green cultivar may lead to a patchy appearance of the putting green.

**Dollar spot susceptibility**

Differences in dollar spot susceptibility were noticed among entries during the test period. Both velvet bentgrasses (Villa and SR 7200) and several creeping bentgrasses showed very good tolerance to dollar spot during the test period (Table 2). Creeping bentgrass cultivars with the least amount of dollar spot included Barracuda, Declaration, Focus, V8, Luminary, PinUp, AFM, Authority and Proclamation. According to test data, the least tolerant cultivars were SRP-1BLTR3, Pure Distinction and Penncross. Alpha, Penn A-1, L-93 and Penn A-2 showed intermediate tolerance. In past NTEP trials, L-93 and Penn A-1 were among the top performing creeping bentgrasses with respect to dollar spot tolerance, but data from this latest test show improved tolerance among some of the new creeping bentgrasses.

**Resistance to Poa annua encroachment**

One of the most important factors in selecting a bentgrass cultivar for putting greens is its ability to compete with *Poa annua*. *Poa annua* began to move into the test area in 2011, and plots of certain cultivars became more heavily infested than others. Cultivars with the least amount of *P. annua* included Pure Distinction, Proclamation, V8, Barracuda, Luminary, Focus, PinUp, Declaration and SRP-1BLTR3. The

---

Table 2. Seedling vigor, color, dollar spot and *Poa annua* ratings for the 2008–2013 National Turfgrass Evaluation Program Bentgrass Putting Green Test. Ratings are based on a scale on 9 to 1, with 9 = fastest establishment, darkest green color, no dollar spot present and no *Poa annua* encroachment.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Bentgrass Species</th>
<th>Seedling Vigor</th>
<th>Genetic Color</th>
<th>Dollar Spot Tolerance</th>
<th>Poa annua Encroachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>V8 Creeping</td>
<td>5.3</td>
<td>5.9</td>
<td>8.4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Barracuda Creeping</td>
<td>6.7</td>
<td>5.1</td>
<td>8.8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Luminary Creeping</td>
<td>7</td>
<td>5.8</td>
<td>8.3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Pure Distinction Creeping</td>
<td>7</td>
<td>3.4</td>
<td>5.4</td>
<td>8.7</td>
<td></td>
</tr>
<tr>
<td>Focus Creeping</td>
<td>7</td>
<td>5.7</td>
<td>8.6</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Proclamation Creeping</td>
<td>8</td>
<td>5.7</td>
<td>7.8</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>PinUp Creeping</td>
<td>6</td>
<td>6.9</td>
<td>8.3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Declaration Creeping</td>
<td>7.3</td>
<td>5.1</td>
<td>8.8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Authority Creeping</td>
<td>6.7</td>
<td>5.9</td>
<td>7.9</td>
<td>7.3</td>
<td></td>
</tr>
<tr>
<td>T-1 Creeping</td>
<td>6.7</td>
<td>8.9</td>
<td>6.7</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td>AFM Creeping</td>
<td>6.7</td>
<td>4.8</td>
<td>8.2</td>
<td>7.3</td>
<td></td>
</tr>
<tr>
<td>SRP-1BLTR3 Creeping</td>
<td>6</td>
<td>4.9</td>
<td>4.9</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Alpha Creeping</td>
<td>7.3</td>
<td>6.3</td>
<td>7.3</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td>Penn A-1 Creeping</td>
<td>7.1</td>
<td>6.3</td>
<td>7.3</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Penn A-2 Creeping</td>
<td>5.3</td>
<td>6.1</td>
<td>6.9</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td>L-93 Creeping</td>
<td>7.7</td>
<td>5.8</td>
<td>7.2</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Pennncross Creeping</td>
<td>7.7</td>
<td>6</td>
<td>6.2</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>Villa Velvet</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>SR 7200 Velvet</td>
<td>7</td>
<td>4.6</td>
<td>9</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>LSD*</td>
<td>0.8</td>
<td>1</td>
<td>1.4</td>
<td>1.3</td>
<td></td>
</tr>
</tbody>
</table>

* Numerical ratings indicate seedling vigor (estimate of percent ground cover and plant height during the early stages of seedling establishment), genetic color (9 = darkest green color, and 1 = yellow-green), tolerance to dollar spot (9 = no disease present, and 1 = extensive disease damage) and *Poa annua* encroachment (9 = no *P. annua* encroachment, and 1 = extensive contamination).

* LSD = Least significant difference. Differences between two entries are statistically significant only if the LSD value, listed at the bottom of each column is exceeded by the numerical difference between two entries. For example, if cultivar A is 1.0 unit higher in quality than cultivar B, then this difference is only significant if the LSD value is 1.0 or less.
The greatest amount of *P. annua* was found in plots of velvet bentgrass (SR 7200 and Villa), L-93 and Penncross. The results of this test reflect cultivar performance for the management regime imposed at this site and environmental conditions in central Pennsylvania. Several popular bentgrasses used on golf courses in the Mid-Atlantic region (007, Penn A-4, Tyee, McKenzie and others) were not included in this test. These cultivars were evaluated in previous NTEP tests, and data from these tests can be found on the NTEP website (ntep.org). A new round of tests was initiated in 2014 and contains several new cultivars. Time will tell if the trends for cultivar improvement continue.

**What Do the Numbers Mean?**

Because of some background variation in the test area and in the evaluation process, all the ratings collected in NTEP trials are subjected to statistical analysis. Numerical differences between two entries for a particular parameter, such as quality, are significantly different only if a value called the Least Significant Difference (LSD), listed at the bottom of each column in Tables 1 and 2, is exceeded by the numerical difference between two entries. For example, if cultivar A is 1.0 unit higher in quality than cultivar B, then this difference is only significant in practical terms if the LSD value is 1.0 or less. If the LSD is greater than 1.0, then the numerical difference between the two cultivars may be due to inherent variability in the test area or some other element of chance.
Turf Innovation and Discovery Expo
at “Valentine East”

**Date:** September 21, 2017

**Location:** “Valentine East” Center for the Agricultural Sciences and a Sustainable Environment at Penn State Berks Campus, Reading, PA

**Website:** [www.paturfshow.com](http://www.paturfshow.com)

Several turf industry companies and organizations will showcase their latest and greatest technology and innovations for golf course superintendents, lawncare and landscape professionals, sports turf managers and others affiliated with the green industry. It will be a day of education, inspiration, camaraderie, fun and also good food! The official ribbon-cutting ceremony for the “Center for the Agricultural Sciences and a Sustainable Environment” will also take place.

Check the website — [www.paturfshow.com](http://www.paturfshow.com) — for information on registration, event time, directions to the site and more.

---

**Winterkill Research**

Winterkill is a severe problem on golf courses throughout the northern United States. In situations where turfgrass is killed, reseeding may be necessary. However, recovery from winterkill can be difficult when temperatures are cold in the spring. Little information is available on the influence of temperatures on the germination potential of various commercially available bentgrass cultivars. The objective of this research is to identify bentgrass cultivars that are more likely to germinate in colder temperatures typical at the time of a spring overseeding.

A growth chamber study will assess the germination of various bentgrass cultivars under ideal conditions and at lower temperatures (e.g., 49°F). Field studies will also be conducted to assess the germination variability of select bentgrass cultivars in the early spring, as well as the overall time of establishment of the putting surfaces.

Studies will be conducted on two sites consisting of predominately creeping bentgrass or annual bluegrass. A third study will evaluate several different cultivation practices, seeding rates and fertilizer regimes on early spring establishment of putting greens impacted by winterkill. Results from this study will help superintendents identify cultivars that may be better suited for early spring establishment, as well as optimized cultivation practices designed to recover putting surfaces in the spring.

**Update submitted by D. Carroll, M.S. student; John Kaminski, Ph.D., Associate Professor of Turfgrass Science; and Peter Landschoot, Ph.D., Professor of Turfgrass Science, Penn State University. ©**
Lost Creek Golf Club is an 18-hole golf course located in the northeast portion of Juniata County. One third of the holes on the course are built along the banks of Lost Creek, a Class A Wild Trout stream. The Juniata County Conservation District recently received a grant from the National Fish and Wildlife Foundation’s Chesapeake Bay Small Watershed Program to restore brook trout habitat and conduct outreach activities in the Lost Creek watershed.

A significant part of the project will involve habitat restoration, bank stabilization and some tree planting along the golf course’s stream banks. The project also includes development of a nutrient management plan by the course superintendent, Tom Troutman, with assistance from Pete Landschoot, Ph.D., Professor of Turfgrass Science at Penn State. This plan will involve development of best nutrient management practices for the different turfgrass areas on the course, a template for tracking and managing nutrient inputs and some monitoring of water quality.

Update submitted by Peter Landschoot, Ph.D., Professor of Turfgrass Science, Penn State University.
The Fowler Founders Award is KAFMO’s most prestigious honor to individuals for their dedication to both KAFMO and for doing their part in making a difference in the sports turf industry of Pennsylvania. The award is named in honor of Donald Fowler, retired Penn State Extension agent, who is credited with organizing the group of individuals who formed KAFMO. The award itself is one of Fowler’s worn-out work boots that has been bronzed and signifies the hard work and determination demonstrated by the Fowler Founders Award recipients.

The 2016 recipient of the Fowler Founders Award is Chris Lessig. Operations Manager for Volusia County Parks and Recreation in DeLand, Florida. Chris began his career in the turfgrass industry after college when he began working for Westmoreland County Parks in Greensburg, Pennsylvania. This was his first time managing sports fields. He then went on to hold positions at Manheim Township Parks & Recreation and Berks County Parks & Recreation. He also spent a short time in the private sector with Athletic Field Pros before taking his current position with Volusia County Parks in Florida. In an interview following the KAFMO conference where Chris received the award, he shared his experiences and thoughts about his 29-year career in the turfgrass industry.

How did you become involved with KAFMO?
I attended the very first meeting in 1995 at the Harrisburg Farm Show Building. I was part of the first Board of Directors, which was made up of various divisions, including schools, recreation and parks, education/extension, college/university, professional sports facility, commercial and at-large. There were two board members assigned to each division. For 15 years, I was one of the representatives for the recreation and parks division, the largest segment of the KAFMO membership.

How has KAFMO helped further your career?
In the late 80s and early 90s, I was just learning about managing turfgrass. There were not a lot of readily available educational resources or an organized group of people to help me or answer my questions. KAFMO solved that problem by bringing together a group of like-minded individuals. By talking and learning from others, we find better ways to accomplish tasks. I can learn from those who have already tried something and get feedback on how it works. Sharing career challenges and solutions helps bring us together to be stronger as a professional network.

What do you value most about your career?
I get to do what I love! Managing a sports complex gives me the opportunity to provide quality recreational surfaces for the community. It is rewarding to see youth and the rest of the community benefit from the safe surfaces we so carefully manage.

What has been your biggest challenge in your career?
The biggest challenge has been to meet increasing demands and expectations for quality fields with limited resources and a finite budget. We are continuously challenged to do more with less. Therefore, I need to be creative and find different ways to do things. Even when you are facing your biggest challenges, someone, somewhere, might have a solution. Therefore, it’s important to stay connected in that network of resources so we can lean on each other when we most need it.

What has been your greatest success in your career?
I had a good working relationship with a coach from Lancaster Catholic girls’
softball, and I always went the extra mile to provide an attractive home field. One day, the coach came to me and said Lancaster Catholic had won the game before it even started. The visiting team stepped off the bus and was intimidated by the excellent condition of the field. As mentioned, the most rewarding part of my job is providing quality, safe playing surfaces for the community. Being able to provide a top-notch venue for a sporting event highlighted that feeling.

**What advice do you have for new turfgrass managers?**
Get involved early in professional organizations such as KAFMO, STMA or another local league. Some people graduate with their degree and think they can be successful alone. I’ve learned that your network in this industry can be one of the most important aspects for success and career advancement.

**What advice do you have for turfgrass managers that have been involved in the industry for years?**
Don’t forget where you came from. We all start on the same level, but some people advance to high-level positions in the MLB, NFL, MLS, etc. Don’t forget who helped you achieve your current position and how hard you had to work for it. It is important to mentor the next generation of turfgrass managers so they can reach their own goals and take pride in their profession.

**What does this award mean to you and your career?**
The support and generosity of my peers humble me because there is never a shortage of deserving candidates for this award. Receiving the award validates the time and hard work I have invested in my career. Regarding my career, it adds to the respect I’ve earned from my supervisors. When my supervisors see that I am being recognized, it validates my knowledge and credibility in my position at Volusia County.

**Is there anything else you would like to share with turfgrass professionals?**
In my career, I keep this quote from George S. Patton close: “Success is how high you bounce when you hit bottom.” When the chips are down, how do you react? Do you pick yourself back up, use your knowledge and resources to keep going? Or do you let the situation get the best of you? I, like many of us, have had low points in my career. However, I’ve recognized that a problem is nothing more than an opportunity in disguise — take the opportunity.
Calendar of Events

**July 16–18**
NALP Legislative Day on the Hill
(National Association of Landscape Professionals)
Washington, D.C.

**July 19–22**
TPI Summer Program
(In conjunction with the 2017 International Turfgrass Research Conference)
The Heldrich
New Brunswick, NJ

**September 21**
Turfgrass Gathering at “Valentine East” Center for the Agricultural Sciences and a Sustainable Environment
Penn State Berks Campus
Reading, PA

**September 26–28**
NRPA Congress and Expo
(Nat. Rec. and Park Assn.)
New Orleans, LA

**November 14–16**
Penn State Golf Turf Conference
Nittany Lion Inn
State College, PA

**January 10, 2018**
Eastern PA Turf, Ornamental and Athletic Field Conference and Trade Show
Shady Maple Conf. Center
East Earl, PA

**January 16–19, 2018**
STMA Conference and Exhibition
Fort Worth, TX

**January 25, 2018**
Northeastern PA Turfgrass Conference and Trade Show
Woodlands Inn
Wilkes Barre, PA

**February 3–8, 2018**
Golf Industry Show
Henry B. Gonzalez Convention Center
San Antonio, TX

**February 27–28, 2018**
Western Pennsylvania Turf, Ornamental and Landscape Conference and Trade Show
Doubletree by Hilton Hotel, Pittsburgh Cranberry
Mars, PA

**Penn State Turf Team**

Jeffrey A. Borger
Senior Instructor in Turfgrass Weed Management
814-865-3005 • jborger@psu.edu

Michael A. Fidanza, Ph.D.
Professor of Plant & Soil Science
610-396-6330 • maf100@psu.edu

David R. Huff, Ph.D.
Professor of Turfgrass Genetics
814-863-9805 • drh15@psu.edu

John E. Kaminski, Ph.D.
Associate Professor of Turfgrass Science
814-865-3007 • jek156@psu.edu

Danny Kline
Research Technologist in Turfgrass Entomology
814-863-1669 • dek16@psu.edu

Ben McGraw, Ph.D.
Associate Professor of Turfgrass Entomology
814-865-1138 • bm53@psu.edu

Andrew S. McNitt, Ph.D.
Professor of Soil Science
814-863-1368 • asm4@psu.edu

Max Schlossberg, Ph.D.
Associate Professor of Turfgrass Nutrition / Soil Fertility
814-863-1015 • mjs38@psu.edu

Al J. Turgeon, Ph.D.
Professor Emeritus of Turfgrass Management
aturgeon@psu.edu

Wakar Uddin, Ph.D.
Professor of Plant Pathology
814-863-4498 • wxu2@psu.edu

**Advertiser Index**

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aer-Core, Inc.</td>
<td>7</td>
</tr>
<tr>
<td>Amvac Environmental Products</td>
<td>17</td>
</tr>
<tr>
<td>Beam Clay</td>
<td>8</td>
</tr>
<tr>
<td>Bromms Lullaby Farm</td>
<td>27</td>
</tr>
<tr>
<td>Central Sod Farms of Maryland, Inc.</td>
<td>27</td>
</tr>
<tr>
<td>Coombs Sod Farms</td>
<td>8</td>
</tr>
<tr>
<td>Covermaster, Inc.</td>
<td>5</td>
</tr>
<tr>
<td>CoverSports USA</td>
<td>13</td>
</tr>
<tr>
<td>East Coast Sod &amp; Seed</td>
<td>27</td>
</tr>
<tr>
<td>Fisher &amp; Son Company, Inc.</td>
<td>3</td>
</tr>
<tr>
<td>FM Brown’s &amp; Sons</td>
<td>14</td>
</tr>
<tr>
<td>George E. Ley Co.</td>
<td>27</td>
</tr>
<tr>
<td>Leading Edge Communications</td>
<td>15</td>
</tr>
<tr>
<td>Medina Sod Farms, Inc.</td>
<td>27</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>27</td>
</tr>
<tr>
<td>Progressive Turf Equipment, Inc.</td>
<td>5</td>
</tr>
<tr>
<td>Quest Products Corp.</td>
<td>9</td>
</tr>
<tr>
<td>Seaweed, LLC</td>
<td>27</td>
</tr>
<tr>
<td>Shreiner Tree Care</td>
<td>27</td>
</tr>
<tr>
<td>Smith Seed Services</td>
<td>27</td>
</tr>
<tr>
<td>Tomlinson Bomberger Lawn Care, Landscape &amp; Pest Control</td>
<td>27</td>
</tr>
<tr>
<td>Walker Supply, Inc.</td>
<td>21</td>
</tr>
<tr>
<td>Windview Athletic Fields</td>
<td>27</td>
</tr>
</tbody>
</table>

**Leading Edge Communications**
814-865-1138 • bam53@psu.edu

**Andrew S. McNitt, Ph.D.**
Professor of Soil Science
814-863-1368 • asm4@psu.edu

**Max Schlossberg, Ph.D.**
Associate Professor of Turfgrass Nutrition / Soil Fertility
814-863-1015 • mjs38@psu.edu

**Al J. Turgeon, Ph.D.**
Professor Emeritus of Turfgrass Management
aturgeon@psu.edu

**Wakar Uddin, Ph.D.**
Professor of Plant Pathology
814-863-4498 • wxu2@psu.edu
Scan the QR code: Download your favorite QR reader to your phone and scan the code to learn more about these companies.
Providing Services & Solutions to the Golf & Sports Turf Industries

SERVICES

- Fraze Mowing
- Sandmaster Drainage
- Field Renovation
- Fertilizing

- Solid Tine & Core Aeration
- Verticutting
- Deep Tine Aeration
- Debris Management

- Slit Seeding
- Spraying
- Topdressing
- Infield Preparation

CONNECT WITH US:  
- Windview Athletic Fields
- @Windviewinc

www.windviewathleticfields.com  
chris@windviewathleticfields.com | 610-608-3175 | 1325 Goshen Parkway | West Chester, PA 19380