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Kansas Turfgrass Conference in conjunction with KNLA December 5, 6 & 7

The Kansas Turfgrass Conference *in conjunction with the Kansas Nursery & Landscape Association* will be held at the Kansas Expocentre in Topeka on December 5, 6 & 7.

The conference is an excellent way to learn about turf and landscape management, visit with old friends, network with new ones, and see all the latest in equipment and supplies from local and national vendors.

Sessions include Basic Turfgrass; Disease, Insect & Weed Management; Golf Turf Management; Advanced Turf Management; Sports Turf; Mechanics; Business Management, and Landscape and Ornamentals

You can download the conference brochure and get exhibitor information online at www.kansasturfgrassfoundation.com or register online at <https://2017ktfconference.eventbrite.com>

The conference has been approved for the following:

State Pesticide Applicator Recertification Credit Hours:

1 Core Hour 3A—8.5 hours 3B—10 hours

GCSAA Education Points

December 5 workshops—.45 December 6 & 7 conference—.65

International Society of Arboriculture

CEUs available for Certified Arborists

You will receive a conference program in the mail with a ballot for KTF board of directors. Please take the time to vote for 3 and mail or fax it in. See you in December!



President's Message



2017 will be a year to remember. With hurricanes Harvey and Irma, alongside a solar eclipse, Mother Nature continues to show us how powerful she can be. With 3 months left before ending the year, I would like to take the time to say THANK YOU. I have decided to run for another 3-year term on the board. It won't be long before we are traveling to Topeka for another successful conference and

look forward to the future Manhattan location in 2019.

Thank you to everyone that attended the Turf & Ornamentals Field Day at John C. Pair Horticultural Research Center, Wichita. We had great first-hand education on turfgrass weed, insect, and disease control. There were several stations focusing on ornamental installation, disease, and insect identification. We also saw new varieties of bermuda and zoysia grass

December 5, 6, 7 marks the 67th annual Kansas Turfgrass Conference in conjunction with KNLA. Our keynote speakers this year include: Dr. Cole Thompson, Agronomy & Horticulture, Univ. of Nebraska, Dr. Charles Fontanier, Horticulture & Landscape Architecture, Oklahoma State University, Dr. Bruce Martin, Turfgrass Pathology, Clemson University, SC, and Dr. Gregg Munshaw, Plant Science, University of Kentucky. I look forward moderating the general session and lawn care track on Wednesday! I wish everyone a productive and prosperous end of year. *(Wes Kleffner)*

Power Raking or Core Aeration?

September is the optimum time to power rake or core-aerate tall fescue and Kentucky bluegrass lawns. These grasses should be coming out of their summer doldrums and beginning to grow more vigorously. This is a good time to consider what we are trying to accomplish with these practices.

Power raking is primarily a thatch control operation. It can be excessively damaging to the turf if not done carefully. For lawns with one-half inch of thatch or less, I don't recommend power raking; instead, use aeration. For those who are unsure what thatch is, it is a springy layer of light-brown organic matter that resembles peat moss and is located above the soil, but below the grass foliage. Power raking pulls up an incredible amount of material that then must be dealt with by composting or discarding.



Core-aeration is a much better practice for most lawns. By removing cores of soil, core-aeration relieves compaction, hastens thatch decomposition, and improves water, nutrient, and oxygen movement into the soil profile. This operation should be performed when the soil is just moist enough so that it crumbles easily when worked between the fingers. Enough passes should be made so that the holes are spaced about 2 to 3 inches apart. Ideally, the holes should be 2.5 to 3 inches deep. The cores can be left on the lawn to decompose naturally (a process that usually takes two or three weeks, depending on soil-type), or they can be broken up with a power rake set just low enough to nick the cores, and then dragged with a section of chain-link fence or a steel doormat. The intermingling of soil and thatch is beneficial to the lawn. *(Jared Hoyle)* Don't forget to follow me on twitter [@KSUTurf](https://twitter.com/KSUTurf).

Mark the Dates!

December 5, 6 & 7, 2017
Kansas Turfgrass Conference
Topeka

August 2, 2018
Turfgrass Field Day
Manhattan

Rocky Ford Update



I believe it is September in Kansas! Performing CPR on the greens at Rocky Ford. Aerifying and verticutting...lots of sand! What a great time of year!

There are many other projects happening here. A redo of the ryegrass trial from last fall that was washed away. 110 varieties of ryegrass replicated 3 times. That is a lot of hand seeding of 5x5 plots. Jack brought his class out to help with the seeding. My back feels much better this year than last year!

There will be lots of new research starting. Out with the old and in with the new! We will be working to finish the irrigation in the new area so research can begin there.

The Turf & Ornamentals Field Day in Wichita was great. What a nice facility and a great turnout on a beautiful August day!

Believe it or not, the Turf Conference is just around the corner! Be sure to mark your calendar to attend on December 5, 6 & 7 in Topeka.

Thanks again to the companies who have donated equipment and products to our research stations in Manhattan, Olathe & Wichita. We could not operate without your help!

Have a great fall. Prayers to Texas and Florida! GO CATS!
(Cliff Dipman)



Thanks Mike Simon & Kansas Golf & Turf for repairing and delivering the golf cart to use at Rocky Ford. We appreciate it!



Where teaching and research intersect....Students in Dr. Fry's HORT 517 Golf Course and Sports Turf Operations class assist in establishing the Perennial Ryegrass National Turfgrass Evaluation Program Trial.

Career Survey Coming Soon to your Inbox

Calling all K-State Golf Course/Turfgrass Management alumni! If you graduated between 1988 and 2017, you'll be receiving an email from us in January with a link to a "Career Progress/Career Satisfaction" survey. We (Jack Fry and Steve Keeley) want to learn more about the career progression of K-State grads over the last 30 years, along with how satisfied they are with their jobs and careers. The information gained from this survey project will help us all as we advise young people interested in this profession, and it will also help those currently in the profession to better understand the golf course/turfgrass job market.

Everyone completing the survey will be entered into a drawing to win one of twenty \$100 gift cards. It will be a great help to us if you will complete the survey as soon as possible when you receive it via email. It will only take about 5 minutes to complete (a little less if you have held only a couple positions since graduation, and a little more if you have held many).

Thanks in advance for helping us with this project. The results will be presented at our turf conference, published on our website (ksuturf.org), in this newsletter, and in other venues. Look for it in January! **(Steve Keeley and Jack Fry)**

Blast from the Past



Can you identify this long-time KTF member receiving a GCSAA scholarship at the KTF Conference in 1979?
(Answer on page 8).



K-State students in Dr. Keeley's Turf Disease Management class learn about sprayer calibration using a ride-on sprayer donated by LT Rich Products, Inc.



Performance and Recovery of Cool- and Warm-season Turfgrass Species Subjected to Traffic during Drought Stress

One of the most important challenges facing turfgrass managers is decreasing water supplies for irrigation. State and local drought restrictions may be imposed on turf managers with no regard for damage to turfgrass. During periods of severe drought and water shortages, turfgrass may receive little to no irrigation for extended spans of time. During drought, turfgrass areas such as golf courses, parks, and sports turf generally continue to receive traffic. In golf courses, traffic, such as near cart paths where golfers tend to walk or drive carts into fairways and roughs, may cause significant wear to turfgrass and also compact the soil. These factors result in, among other things, reduced tolerance to heat and drought stresses. In fact, when the soil is compacted, more frequent irrigation is often required to compensate for the detrimental effects of compaction on root and shoot growth.

Significant research has been conducted separately into the issues of drought resistance and traffic tolerance in turfgrass. Turfgrasses vary widely in their ability to resist drought and tolerate traffic. However, little research has investigated the combined effects of drought and traffic in turfgrasses. Given the increasing likelihood of irrigation restrictions for turfgrass in areas of high traffic, it is imperative to conduct such research. Past research on trafficked turfgrass has been conducted under well-watered conditions, but research is needed on the traffic tolerance of turfgrass during drought stress.

We conducted a study at K-State in 2015 and repeated it in 2016 to investigate the performance of four turfgrass species, grown at fairway and rough mowing heights, and trafficked by golf carts during extended drought periods. We also evaluated the recovery of the turfgrasses after the drought period was stopped. This was conducted under a stationary rainout shelter that excluded rainfall during a simulated 41-day drought period in each year (Fig. 1). The soil was a silty clay loam. We included two cool-season species (Kentucky bluegrass and perennial ryegrass) and two warm-season species (buffalograss and zoysiagrass). All four turf species were maintained at two mowing heights of 5/8-inch (fairway) and 2.5-inch (rough/home lawn). Traffic rates consisted of no traffic (untreated) and traffic (16 passes per week) with an electric motorized golf cart with supplemental weight to simulate two golfers and equipment during the drought period only. By the end of the 41-day drought, a cumulative of 96 traffic passes had occurred on the trafficked plots. During the 41-day drought period, no rainfall or irrigation was applied. After the drought period, traffic treatments were stopped and the turf was kept well-watered to promote recovery. We implemented standard agronomic golf industry fertilization procedures specifically for both warm- and cool-season grasses. Therefore, fertilization timings and amounts differed between warm- and cool-season grasses, with Kentucky

bluegrass and perennial ryegrass receiving 4 lbs of nitrogen/year and the zoysiagrass and buffalograss receiving 2 lbs of nitrogen/year.

To evaluate above-ground turfgrass performance, we monitored the turfgrass with weekly visual turf quality ratings, percent green cover measurements with digital images, and turf firmness measurements. To evaluate the effects of treatments on below-ground aspects, we monitored the soil moisture weekly, soil compaction at pre-drought and post-drought via soil bulk density and soil penetration resistance measurements. In 2016, we also measured roots of the turfgrass species after the drought.

Above-ground. Regardless of traffic treatment or mowing height, zoysiagrass and buffalograss maintained more green coverage and better visual quality than Kentucky bluegrass and perennial ryegrass during drought and recovery periods. The visual appearance of Kentucky bluegrass and perennial ryegrass quickly declined due to the drought stress and this was accelerated with traffic. Conversely, zoysia and buffalograss maintained and usually ended the 41-day drought period with better visual quality in both traffic treatments and at both mow heights than Kentucky bluegrass and perennial ryegrass.

Interestingly, because zoysiagrass and buffalograss remained greener during the drought, they were also more visibly impacted by traffic than Kentucky bluegrass and perennial ryegrass, which were already at low quality even before traffic (Figs 2, 3, and 4). In other words, zoysiagrass and buffalograss had more to lose, and there was a larger separation in quality between trafficked vs non-trafficked areas compared to Kentucky bluegrass and perennial ryegrass.

Because zoysiagrass and buffalograss had more green coverage at the end of the drought, they required less time to recover than Kentucky bluegrass and perennial ryegrass (Figs. 3 and 4). Nevertheless, all four turfgrass species at both mowing heights and traffic treatments fully recovered during the 40-day recovery period in both years, except Kentucky bluegrass at rough height in 2016. If given more time, it may have fully recovered.

We also observed bigger differences in turf quality between traffic treatments within the higher (rough) height compared to the lower (fairway) height. Therefore, traffic stress during a drought may be more detrimental on higher mowed turfgrass.

For turf firmness, as the soil moisture declined during the drought, the turf surface of all four turf species became more firm (harder), especially at the lower mowing height. This effect was enhanced by traffic, especially at the higher mowing height. The turf firmness may affect playability or the safety of the surface; therefore, it is important to consider during drought. Overall, we found that traffic during drought will have a negative and accelerated impact on the above-ground portion of turfgrass, which will vary among turf species and mowing heights.

Performance and Recovery of Cool- and Warm-season Turfgrass Species Subjected to Traffic during Drought Stress (*continued*)

Below-ground. Soil moisture was consistently highest in buffalograss among species during the 41-day drought. The ability of buffalograss to maintain higher soil moisture during drought may have helped it stay green longer than the other species. There were really no differences in soil compaction among turf species, mowing heights, or traffic treatments. This is probably because the dry soil during the drought was relatively hard anyway, and the traffic didn't compress it. Therefore, traffic on turf during drought may not significantly compact the soil.

There were a few differences in rooting among species in the top 12 inches of soil. However, those differences were not closely related to turf visual quality (described above). We may have seen a closer relationship between rooting characteristics and turf quality if we had been able to measure roots below 12 inches (read Dr. Ross Braun's dissertation for more info!).

Most differences in soil and roots were caused by drought and not traffic stress, since the traffic treatments didn't compact the soil or affect the roots. Therefore, turf managers may see minimal impacts on soil and root characteristics from traffic during drought.

Results indicate that turfgrass managers may see minimal impact on below-ground variables, but they still need to be aware of the detrimental effects of traffic on turf visual quality during drought. During drought stress, turfgrass managers need to closely monitor trafficked areas and/or possibly restrict traffic as drought stress increases. Cool-season grasses will likely decline in turf quality faster than warm-season grasses, and traffic will accelerate this decline. Conversely, because warm-season grasses generally remain greener during drought, the detrimental effects of traffic will be more noticeable compared to cool-season (Kentucky bluegrass and perennial ryegrass) turfgrasses.

Regardless of turf species, if traffic must be allowed during times of drought, we would advise turfgrass managers to direct traffic to stay on the lower mowing height (fairway) and limit traffic on the higher mowing height (rough). Turfgrass managers can also direct traffic with stakes, ropes, signs, and, if severe drought, possibly only allow traffic on cart paths.

Finally, it's always important to keep the customers and turf users (golfers, homeowners, park users, etc.) informed during times of drought stress about the importance of limiting traffic during times of stress. If traffic can be properly managed during drought, areas that are the slowest to lose green cover will typically be the fastest to recover after the drought ends. (*Ross Braun, Dale Bremer, Jared Hoyle*)



Figure 1. Stationary rainout shelter.



Figure 2. The 2016 study area of zoysiagrass (Z), buffalograss (B), Kentucky bluegrass (K), and perennial ryegrass (P) during the pre-drought (top), at the end of the 41-day drought period (middle), and at the end of the 40-day recovery (bottom). Plots immediately right of the turf species letters are at rough mowing height, while plots immediately left of letters are at fairway mowing height. Traffic passes only occurred inside the white lines.

Performance and Recovery of Cool- and Warm-season Turfgrass Species Subjected to Traffic during Drought Stress (*continued*)



Figure 3. Up-close plot pictures of the four turfgrass species at *fairway* mowing height at the end of the 41-day drought period in 2016. 96 golf cart traffic passes had occurred inside the white lines, all other turf area was non-trafficked (untreated).



Figure 4. Up-close plot pictures of the four turfgrass species at *rough* mowing height at the end of the 41-day drought period in 2016. 96 golf cart traffic passes had occurred inside the white lines, all other turf area was non-trafficked (untreated).

Check out the K-State Turfgrass Blog
at:

www.KSUTurf.org/blog/

International Turfgrass Meeting

Dale Bremer (Horticulture and Natural Resources, HNR), Jack Fry (HNR), Jared Hoyle (HNR), Steve Keeley (HNR), and Megan Kennelly (Plant Pathology) attended the 13th International Turfgrass Society Conference July 16 to 21 in New Brunswick, NJ. All KSU faculty served as technical editors, associate editors, or reviewers for manuscripts along with presenting their own papers. In addition, Fry chaired a "Zoysiagrass Symposium" which included presenters from Australia, Italy, South Korea, and the United States. Oral and poster presentations (and accompanying journal articles) presented:

Chabon, J. D. Bremer, J. Fry, and C. Lavis. 2017. Effects of soil moisture-based irrigation controllers, mowing height, and trinexapac-ethyl on tall fescue irrigation amounts and mowing requirements. *Int. Turfgrass Soc. Res. J.* 13:1-6 (2017). doi: 10.2134/itsrj2016.04.0242

Fry, J., A. Chandra, D. Genovesi, K. Morris, and M. Xiang. 2017. Winter injury of fine-textured interspecific Zoysia hybrids in the upper transition zone of the USA. *Int. Turfgrass Soc. Res. J.* 13:1-3. doi: 10.2134/itsrj2016.09.0757

Hoyle, J. and J. Reeves. 2017. Effect of colorant and glyphosate application timing on annual bluegrass and tall fescue control in dormant 'Meyer' zoysiagrass. *Int. Turfgrass Soc. Res. J.* 13:1-4. doi: 10.2134/itsrj2016.09.0828

Obasa, K., J. Fry, D. Bremer, and M. Kennelly. 2017. Evaluation of spring and fall fungicide applications for large patch management in zoysiagrass. *Intntl. Turfgrass Research J.* 13:1-7. doi: 10.2134/itsrj2016.04.0274

Peterson, K., D. Bremer, and J. Blonquist Jr. 2017. Estimating transpiration from turfgrass using stomatal conductance values derived from infrared thermometry. *Int. Turfgrass Soc. Res. J.* 13:1-6. doi: 10.2134/itsrj2016.09.0788

Raudenbush, Z. and S. Keeley. 2017. Cultivation reduces infestation of silvery-thread moss in a creeping bentgrass putting green. *Int. Turfgrass Soc. Res. J.* 13:1-6. doi: 10.2134/itsrj2017.02.0092



Meet the Candidates Running for the KTF Board of Directors

We have 5 great candidates on the ballot for the KTF Board of Directors this year. A ballot will be mailed out with your Kansas Turfgrass Conference program. We appreciate the interest of these members who are willing to serve on the board of directors for a 3-year term. Be sure to vote!

Dale Cross—Sharp Bros. Seed



Dale is the Eastern Kansas Sales representative for Sharp Bros. Seed Co., Inc., Healy, KS. He is responsible for making sure the customer is satisfied with both the product and the service. He has been in the seed business 45 years, with the last 6 years employed by Sharp Bros. He sells many species of turfgrass, with an emphasis on buffalograss. He also has

knowledge on seeding native grasses and forbes used in many of the landscape projects.

“It would be an honor and privilege for me to serve on the KTF Board of Directors. I would like to share the knowledge and experience I have gained in my years in the seed business.”

Steve Dale—JoJacs Landscaping & Mowing



Steve is the owner of JoJac's Landscape & Mowing, Inc. in Haysville which serves the Wichita, Haysville, Derby, and Mulvane area. He has been a past board member, as well as a past president of the KTF in 2009. He has been in the lawn and tree care business for 39 years and has been a member of the KTF for 30+ years. He is also a member of the Kansas Arborist Association. With his

past experience in the lawn and tree care industry, as well as past KTF experience, he looks forward to working again with everyone in the Foundation and all the members. He also looks forward to representing his area of Kansas. He thinks this a great organization to be a part of and is looking forward to working with all the members again. Without the KTF, he says his job and your job would be a lot tougher.

Tony Goldsby—Ewing Irrigation



Tony is the Central Division product/sales manager for Ewing Irrigation. He is responsible for providing sales, service and support to Green Industry professionals in the Central U.S.; managing turf product inventory for regional networks of Ewing branches; and building and maintaining business relationships with company vendors. He is also a

member of the Ewing education services team which provides CEU approved courses focusing on best management practices for lawn and landscape professionals throughout the United

States. He is interested in serving on the KTF board of directors again because of his past ties to KSU, specifically to this organization. Spending 10 years at K-State provided him the opportunity to be involved in many events that were organized and supported by the KTF. “I enjoy the opportunity to give back to this great organization by serving on the board of directors!”

Wes Kleffner—Bayer



Wes is an Area Sales Manager for Bayer covering the states of Kansas, Missouri, and Colorado. Prior to joining Bayer, he spent ten years at Ryan Lawn and Tree in Kansas City. He graduated from K-State with a degree in golf course management before moving to the big island of Hawaii to construct The Club at Hokulia. “Turfgrass research and the advancement of the industry

is a great passion of mine. Education and promotion of better turfgrass will be key in growth and vitality of the industry. The Kansas Turfgrass Foundation is the vehicle to successfully meet these goals. My commitment to the industry and diligent work habits will greatly benefit KTF.”

Jeff White, CGCS—Indian Hills C



Jeff is currently the Golf Course and Grounds Manager for Indian Hills Country Club. He has been with IHCC since April 2013. He has held similar positions in the KC metro area including Lake Quivira CC and Falcon Ridge GC. He began his career in the area as an assistant superintendent in 1993 at Alvarado Golf and Country Club. Jeff is a long-

time member of the KGCSA, HAGCSA, & KTF. He enjoys the comradery, knowledge sharing, and networking that comes with being an active member of the local associations. He is a Past President of the HAGCSA.

“It would be an honor and privilege to serve the KTF Membership. I’ve gained numerous friends, colleagues, and contacts via the KTF Conference over the past 20+ years. I wish to give back to the KTF and help with the continuing education and recertification programs that have been highly impactful and beneficial to my career.”

Blast from the Past

And the answer is.....Loren Breedlove, Kansas City CC.

September is Here — That Means Football & Fescue

September is here, and that means it is prime time for football and to fertilize your tall fescue or Kentucky bluegrass lawns. If you could only fertilize your cool-season grasses once per year, this would be the best time to do it.

These grasses are entering their fall growth cycle as days shorten and temperatures moderate (especially at night). Cool-season grasses naturally thicken up in the fall by tillering (forming new shoots at the base of existing plants) and, for bluegrass, spreading by underground stems called rhizomes. Consequently, September is the most important time to fertilize these grasses.



Apply 1 to 1.5 pounds of actual nitrogen per 1,000 square feet. The settings recommended on lawn fertilizer bags usually result in about 1 pound of nitrogen per 1,000 square feet. We recommend a quick-release source of nitrogen at this time. Most fertilizers sold in garden centers and department stores contain either quick-release nitrogen or a mixture of quick- and slow-release.

The second most important fertilization of cool-season grasses also occurs during the fall. A November fertilizer application will help the grass green up earlier next spring and provide the nutrients needed until summer. It also should be quick-release applied at the rate of 1-pound actual nitrogen per 1,000 square feet. (*Jared Hoyle & Ward Upham*)

Sponsorship Opportunities Available During the Kansas Turf Conference in conjunction with KNLA

In addition to booth space, vendors have additional sponsorship opportunities. This is a perfect way to increase your company's visibility!

Birdie Sponsor - \$250

- Your company sign at one refreshment break location *one day* during the conference.
- Materials can be displayed at table.
- Company logo on sponsor sign in registration area.

Eagle Sponsor - \$500

- 2-min. presentation in breakout session about your company.
- Your company sign at one refreshment break location on *2 days* of the conference.
- Materials can be displayed at table.
- Company logo on sponsor sign in registration area.

Albatross Sponsor - \$1,000

- 3-min. presentation in General Session about your company.
- Lunch sponsor on Wed., Dec. 7. Company sign by buffet line in trade show area.
- Your company sign at *all* refreshment break locations during the 2 ½ day conference.
- Materials can be displayed at table.
- Company logo on sponsor sign in registration area.

For more information, got to [Exhibitor Information](#)



<http://www.facebook.com/pages/Kansas-Turfgrass-Foundation>

Kansas Turfgrass Field Day
August 3, 2017



Featured Speakers
at the 67th Annual
Kansas Turfgrass Conference
in conjunction with KNLA



Dr. Charles Fontanier is an Assistant Professor in Turfgrass in the Dept. of Horticulture and Landscape Architecture at Oklahoma State University. His research focuses on water conservation, irrigation science, drought stress response, nutrient transport, cultivar development in shade stress, interactions between multiple abiotic stresses, and sand-based rootzone management.



Dr. Bruce Martin is the Research and Extension Turfgrass Pathologist for Clemson University, SC. His program focuses on fungicide performance, disease identification and management, and nematode management in commercial turfgrass systems.



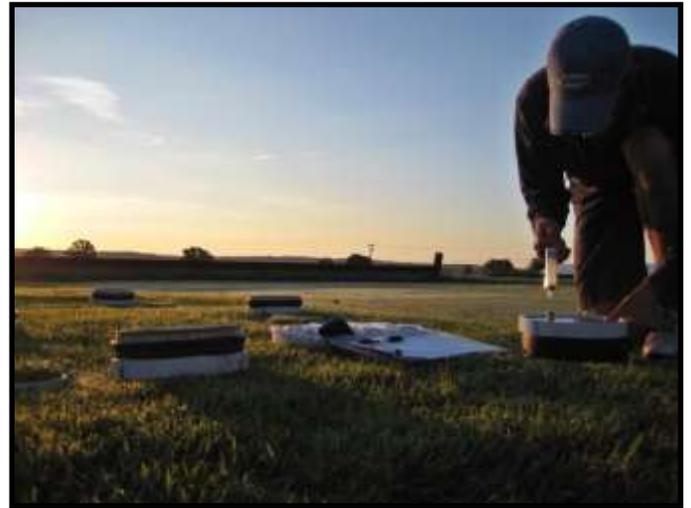
Dr. Gregg Munshaw is an Extension Associate Professor in Plant Science at the University of Kentucky in Lexington. He specializes in improving sports surfaces, including golf courses, athletic fields and horse racing tracks.



Dr. Cole Thompson is an Extension Specialist in Integrated Turfgrass Management at the University of Nebraska-Lincoln. His research interests include integrated weed and disease management, ecological aspects of pest prevalence, alternative and input-limited turf and pest management strategies, and environmental fate of pesticides in urban settings.

The 2017 Turfgrass
Research Reports Online

See what research projects the KSU Turfgrass Team have been up to. <http://newprairiepress.org/kaesrr/vol3/iss4/>



Equipment Dealers that
Support K-State Turf
for Use at Rocky Ford

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Utility Cart

Van Wall Equipment Co./John Deere

John Deere Triplex Tee Mower
Skid Steer & Trencher

KTF Founders Society Members

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Flint Hills National Golf Club
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Merrin Godfrey
Heart of America Golf Course Supt. Assn.
Jim Heinze
Kanscapes
Kansas City CC
Kansas Golf Assn.
Kansas Golf Course Supt. Assn.
McPherson College

Midwest Turf
Prairie Dunes CC
Professional Grounds Management
Ryan Lawn & Tree
Gregg Snyder
Syngenta
Don Tannahill
Turf Professional Equipment
Williams Lawn Seed

A \$1,000 contribution (at once, or over time) is all that is required to become a KTF Founder. Our goal is to recruit a total of 100 Founders over the next several years. These funds are untouched with hope that one day accumulated interest will help to support turfgrass research.

For more information on how to become a KTF Founders Society member, contact Jack Fry, Horticulture Division, Throckmorton Hall, Kansas State University, Manhattan, KS (785) 532-1430 jfry@ksu.edu

New Turfgrass Extension Publications Online

I have been busy this past year updating the KSU Turfgrass Research Extension Publications. With the help of everyone at the K-State Research and Extension Bookstore we updated a total of 7. (*Jared Hoyle*)

Benefits of a Healthy Lawn – Environmental, economic, health, and safety benefits of turfgrass found in lawns, athletic fields, parks, and roadsides. <https://www.bookstore.ksre.ksu.edu/Item.aspx?catId=545&pubId=12800>

Turfgrass Selection – Professional Series – Information to help turfgrass managers select grasses appropriate for a particular environment. <https://www.bookstore.ksre.ksu.edu/Item.aspx?catId=545&pubId=645>

Turfgrass Identification – Professional Series – Information for turfgrass managers to help identify grasses by their vegetative characteristics <https://www.bookstore.ksre.ksu.edu/Item.aspx?catId=545&pubId=644>

Lawn Fertilizing Guide – This guide helps homeowners determine how much fertilizer to apply to keep lawn vigorous and healthy. <https://www.bookstore.ksre.ksu.edu/Item.aspx?catId=545&pubId=10639>

Turfgrass Mowing – Professional Series – Mowing basics for professional turfgrass managers. Information on mowing height and frequency, clippings, mowing pattern, mower operation, blade sharpening, mower selection, maintenance, and safety. <https://www.bookstore.ksre.ksu.edu/Item.aspx?catId=545&pubId=712>

Recycling Grass Clippings – Information for homeowners on why and how to recycle grass clippings. <https://www.bookstore.ksre.ksu.edu/Item.aspx?catId=545&pubId=701>

Mowing Your Lawn – Mowing basics for homeowners. Includes information on mowing height and frequency, pattern, mower operation, maintenance, and safety <https://www.bookstore.ksre.ksu.edu/Item.aspx?catId=545&pubId=615>