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Heart Beat

September 2017

CALENDAR OF EVENTS

Sept. 21 - Vendor Appreciation
Boulevard Beer Hall

Oct. 2&3 - MO Cup Challenge
Lodge of Four Seasons

Oct. 18 - Battle of the Heart
Golf Club of Creekmoor

Nov. 2 - Annual Meeting -
Lunchtime Meeting
180 Room

Dec. 18-19 - Common Ground
Olathe Conference Center

Jan. 12, 2018 - New Year Party
Arrowhead Stadium

MO Cup Challenge Lodge of Four Seasons



The Cove Golf Course



The Ridge Golf Course

Monday, October 2 & Tuesday, October 3

Schedule:

Monday, October 2

The Cove

9:00 a.m. - Registration

10:00 a.m. - Shotgun Start (4 person scramble)

4:00 p.m. - Shootout & Dinner

Tuesday, October 3

The Ridge

9:00 a.m. - Shotgun (4 person scramble)



Heart of America GCSA
638 W. 39th Street
Kansas City, MO 64111
816-561-5323
www.hagcsa.org

President's Message



At this point I hope everyone has survived the summer. As I type this in early August, the extended forecast shows lows in the 50's and highs in the 70's and low 80's. I sure hope this actually comes true as I feel like I'm having an alternate reality.

As for HAGCSA business, I want to thank George Hobbs and EZGO for the sponsorship of the Past Presidents outing at the T-Bones tailgate and baseball game. What a treat it was to have Ozzie Smith stop by and hang out with us. He's not only one of the greatest to play the game but also a truly phenomenal person. The same can be said for George as well. Thanks guys!

By the time most of us will have completed green's aerification we'll be ready to do a little unwinding as we've got another great event planned for our vendor appreciation outing. This year the event will be held in the Boulevard Beer Hall on September 21st. If you haven't been to the Beer Hall, I highly recommend you come and check it out, pat our valued vendors on the back and say thanks for the support. I have no doubt this is the best venue we have ever held an event like this.

Finally, if you aren't aware the MO Cup has changed locations. This year the event will be played at the Lodge of the Four Seasons on October 2nd and 3rd. Not only will we be able to play two great courses, we won't have to cross a busy highway to do so. As everyone who attends this event, I love this event and feel it is the most fun event of the year. I look forward to seeing you there.



Tim Nielsen
Creekmoor
Golf Club

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Upcoming Events

By Matt Delventhal, Director

September 21
3-5 p.m.

Vendor Appreciation Event
Boulevard Brew Hall
Come have a beer and show your support to our great vendors!

There will be drinks, great food, awesome entertainment, award presentations, and a raffle to end this wonderful evening.

November 2

Annual Meeting
180 Room
Come enjoy some Joes BBQ, Business casual dining, and vote for the new board members at our first ever Lunchtime Annual Meeting.

Please put all these events on your calendar because I want to see a great turnout from our HAGCSA members at these events.

January 12, 2018

New Year Party
Arrowhead Stadium
This year we will be returning to Arrowhead Stadium to host our New Year Party at The Foolish Club.



Matt Delventhal,
Minor Park
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MO Cup Challenge: Oct. 2&3, Lodge of Four Seasons

2017 MO Cup Challenge October 2&3

By Wes Kleffner & Richard Shumate, Special Directors

This year the MO Cup Challenge will be held at the Lodge of Four Seasons at the Lake of the Ozarks. We will be playing The Cove and The Ridge courses.

Lodge of Four Seasons is the only full-service golf resort in Missouri offering **36 holes of championship** golf. Both The Cove and The Ridge have been recognized in the top five golf courses of Missouri by numerous publications, including *Golf Digest*, *Golf Magazine* and *AAA Midwest*.

Monday, Oct. 2nd at The Cove

9 a.m. - Registration
10:00 a.m. - Shotgun (4 person scramble)
4:00 p.m. - Shootout & Dinner

Tuesday, Oct 3rd at The Ridge

9 a.m. - Shotgun (4 person scramble)

Cost: \$155.00 (includes golf/meals/drink tickets for both days, tee gift, prizes and Shootout on Monday)

Guestroom rates for night of Monday, October 2, 2017, to MO Cup attendees are discounted. Please call Group Reservations at 1-888-265-5500.

\$125 - Season's Bay Double/Double
\$135 - Season's Bay King
\$155 - Main Lodge Double/Double
\$165 - Main Lodge King
\$185 - Jr. Suite
\$205 - Lanai (outdoor poolside room)
\$265 - Avila Suite - 1 Bedroom Condo
(sleeps 2 - king bed and sleeper sofa)
\$289 - Avila 2 bedroom Condo
(sleeps 4 - king bed, sleeper sofa, and 2 queen beds)

Check-in time starts at 4:00 p.m.
Checkout time is 11:00 a.m.

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The Cove



The Ridge

Benefits of Introducing New Genetics Into Your Turfgrass Stand

By Leah A. Brilman, Ph.D., Director of Product Management and Technical Services DLF Pickseed USA

Turfgrass breeders have continually made improvements in the cultivars available, and if you have not taken advantage of these new genetics you may be spending too much on fungicides, herbicides and water. Regular introduction of new genetics into your golf course or sports field helps prevent weed invasion and diseases. The species that have shown the most improvements include creeping bentgrass, the turf-type tall fescue, perennial ryegrass and fine fescues. You can aggressively work to establish new genetics through consistent interseeding or just make sure seeding is part of your yearly maintenance. If desirable seed is always in the turfgrass stand then anytime a hole is created a desirable plant can establish instead of the weed seeds always present in the soil. Building a seed bank is useful in improving your stand.

The best of the new creeping bentgrasses have improved dollar spot resistance and are more competitive against *Poa annua* due to density and better spring and fall growth. These cultivars also

have better stress tolerance so summers become easier. Whether on fairways or greens they have shown the ability to be managed with less fungicides and can be established into *Poa annua* stands. The key to this is to interseed in the warmer times of year when the *Poa* does not germinate and the bentgrass will germinate rapidly with a competitive edge.

Turf-type tall fescues have improved so much over the last ten years they have replaced Kentucky bluegrass for many uses. Tall fescue have retained their excellent drought, wear and stress tolerance while improving density, fine leaf texture and brown patch resistance. Even many experts when presented with these new tall fescues will think they are looking at Kentucky bluegrass. Use in roughs for low maintenance turf has increased on golf courses. These new tall fescues have also shown superior winterhardiness.

Continued on next page



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MO Cup Challenge: Oct. 2&3, Lodge of Four Seasons

Turfgrass Stand - cont.

Tetraploid perennial ryegrasses are a new product that brings many advantages to turf blends. These tetraploids germinate and establish at lower soil temperatures than standard ryegrass. They have a little wider leaf texture and lower density so they blend better with other turfgrass species. Tetraploids also have superior winterhardiness surviving under ice and snow better than other perennial ryegrasses and many other species. These ryegrasses are also very drought and salt tolerant to help you next to roadsides and sidewalks.

In order to obtain these benefits you need to be able to establish new genetics into your stand. Multiple years of scientific research plus experience in both sports fields and golf courses have demonstrated certain key points to be successful in interseeding.

1. The first key point is higher seeding rates are needed when interseeding new grasses into an existing stand, especially with wear on it. The new grass seedlings have to compete with the existing grass and weeds plus tolerate wear which will destroy many of them. Heaviest wear areas will need the most seed. Minimum of twice the rate used for new seedlings. Will be required.
2. This is most successful if done over multiple years or more than one time per year.
3. If possible correct problems before you start including drainage, shade, heavy wear areas, etc.
4. If you have perennial broadleaf or grass weeds interseeding by itself will not remove weeds already present. You can potentially weaken them and prevent new plants but other controls may be necessary to remove these from a stand.
5. For removal of heavy thatch and weeds without herbicides fraze mowing can be used. This is very useful on teetops. Recovery time depends on species chosen for establishment.
6. In order to improve the chances of establishment reduce the growth of the existing stand by scalping and / or create holes using aeration equipment or spiking, so seed to soil contact is increased. The key is less competition between existing plants and new weak seedlings.
7. Best time for interseeding is actually the summer, if Poa annua is you primary problem. The desirable species including perennial ryegrass, fine fescues, browntop bentgrass, creeping bentgrass and smooth stalked meadowgrass germinate and establish faster at this time of year (less days from sowing to germination), while Poa annua primarily germinates in cooler temperatures of the fall with shorter days.
8. Interseeding can also be done in spring and fall, especially to repair damage. Observe what caused the damage (heat, disease, drought, cold) and select species and cultivars that are excellent in that characteristic.
9. Drop seed your seed into the stand. Verticutting beforehand can help if you have the equipment. Make sure the seed is not planted too deep, however recent research by Grande and

Shortell (2015) have shown that species can come up from a much deeper depth than often thought which can be valuable on unirrigated sites. Slit seeding can be used but is better if the stand is not in play.

10. Sand topdress and / or drag seed in to achieve better seed to soil contact.
11. You can continue to mow after seeding. Mowing short can help reduce competition and increases tillering of the young seedlings. Leaving clippings can help retain moisture also.
12. If you have irrigation utilize it at least once per day. Try to keep the stand from being too wet or soft which is not acceptable to golfers and favors Poa annua.
13. Nitrogen on the seed or applied at time of seeding can improve stand establishment.

Tony's Teasers

Back by popular demand after a 5 year hiatus, here's your chance to win fabulous prizes at the end of the year Holiday Party (must be present to win!). These teasers are plays on words, phrases, joke punch lines, names, etc (most related to our profession in some warped way). Each printed edition (andy.klein@greatlifekc.net) will have a different teaser for you to solve. Simply email your answer to the editor prior to the next printed edition and we'll throw all the winning entries into a hat for a spectacular drawing. Good Luck!



Clue: What did the bayonet tine say to her self-absorbed side-eject boy friend?

Answer: You're a _____ tine!

SCHOLARSHIP APPLICATIONS

Deadline: October 30, 2017

The Heart of America GCSA Scholarship Program offers educational aid to deserving students in the turfgrass program at an accredited college or university in Kansas or Missouri.



Applications will compete based on the or overall qualifications determined by the Scholarship and Research Committee. Please help us get the word out by directing students to our website (www.hagcsa.org) to download an application the criteria. All applications must be received by October 30, 2017.

Battle of the Heart Tournament

By Taylor Olson, Hallbrook Country Club

This year the old "Employee Tournament" will now be called the Battle of the Heart Tournament and will be held at 12:30 p.m. on October 18th at the Golf Club of Creekmoor.



Superintendents - The Battle of the Heart Tournament will be a great opportunity to celebrate this season's success with assistants and staff, or join with other superintendents/vendors around the area to earn bragging rights for the first ever Battle of the Heart Trophy. With the golf season winding down, what better time to end the season with your most valuable staff members enjoying a round of golf at Creekmoor. There will be a number of different speed competition challenges (besides the golf course) that will be "golf course industry" inspired. Winners of these challenges will win a Visa Gift card. Entry fees are \$35 per player; which covers 18 holes of golf, drink tickets, numerous chances to win gift cards, credit towards the golf shop, and bragging rights to the first ever Battle of the Heart Tournament Trophy. Hope to see you all there!

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What's the Ideal Fertilizer Ratio for Turfgrass?

By Bill Kreuser, Assistant Professor and Turfgrass Extension Specialist,
University of Nebraska

Do you ever wonder why there are so many different fertilizer ratios on the market? The intuitive answer is different fertilizer sources contain different amounts of nutrient. For example, a urea molecule $\text{CO}(\text{NH}_2)_2$ contains 46% nitrogen (N) by weight and roughly 27% oxygen, 20% carbon, and 7% hydrogen. Ammonium sulfate is 21% N and 79% O, S, and H by weight. Add a coating to a fertilizer prill and the nutrient percentage declines. While phosphorus (P) and potassium (K) are slightly more difficult to calculate because they are expressed as P_2O_5 and K_2O , it's easy to see how there could be a wide assortment in fertilizer ratios when looking only at one specific fertilizer source. However, most turfgrass fertilizers are a blend of several different fertilizer sources. This allows manufactures to alter N release characteristics and add other nutrients to the fertilizer bag. So why is there such diversity in N-P $_2\text{O}_5$ -K $_2\text{O}$ ratios of blended fertilizer products? More specifically, is there an ideal fertilizer ratio for turfgrass?

Plants Control Nutrient Uptake

To find the ideal fertilizer ratio we first need to recognize that nutrient uptake is controlled by plant nutrient demand and not fertilizer applications. Roots are fairly selective for different nutrients. Adding a nutrient doesn't mean levels in the plant will change unless the soil was already low in that nutrient. This isn't a new concept, Waddington and others (1978) showed P fertilization did not affect tissue P content when soil test values were greater than 24 ppm. Recently, Kussow and others (2012) also showed fertilizing with P and K is a waste of resources when the soil tests reports indicate nutrient levels are already adequate. Briefly, a creeping bentgrass fairway plot was fertilized with four pounds of N per 1000 ft² annually. The plots were grown on native soil with more than sufficient levels of P and K (62 and 180 ppm, respectively). They then added either 1 lb of P_2O_5 , 3 lbs of K_2O , or both annually and monitored leaf tissue N, P, and K content. After three years, there were no statistical differences between any of the fertilizer

Continued on next page



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Fertilizer Ratio - cont.

treatments because the soil already satisfied plant demand for both P and K (Fig. 1).

Based on this information, an ideal fertilizer ratio could be all N and zero P2O5 and K2O (N-0-0) because the extra nutrients aren't benefiting the turf. While I generally encourage N only fertilization, it really depends on soil test values. Think of the soil as a nutrient bank. When fertilization exceeds plant nutrient demand and other mechanisms of nutrient loss (leaching, denitrification, fixation) then soil test nutrient levels increase. Likewise, soil test nutrient levels will decline when plant uptake and nutrient loss exceed fertilization. While a sole N fertilization program can work initially, future problems may occur as the soil nutrient bank slowly declines. An ideal fertilizer ratio would replace P and K and keep soil test levels static (annual fertilization = removal/loss).

Nitrogen Drives Turfgrass Nutrient Demand

Uptake of all soil nutrients is dependent on turfgrass growth rate. Rapid growth requires more nutrients to sustain growth. This translates into higher nutrient demand. Since turfgrass is chronically N deficient, N fertilization promotes leaf growth and increases demand for other nutrients. The Kussow group demon-

strated N-driven nutrient demand on creeping bentgrass fairway turf (2012). Increased nitrogen fertilization increased demand and uptake of other nutrients, even increasing their content within the plant (Fig. 2). Increased nutrient uptake lowered soil test nutrient levels (Fig. 3). Bray-1 soil test P and K levels dropped 6 and 25 ppm over three years when the turf received 2 lbs of N per 1000 ft2 annually and 17 and 57 ppm when fertilized with 6 lbs of N per 1000 ft2 annually. That's a 27% and 32% decline in soil test P and K over three years at 6 lbs of N. Clearly the 25-5-10 fertilizer used in the study wasn't replacing the P and K. An ideal ratio needs to have a more P and K to sustain soil fertility levels.

Ideal Fertilization Ratios

To recap, turfgrass plants selectively control nutrient uptake; it depends on growth rate which is commonly influenced by N rate. Therefore, N fertilization increases demand and uptake of other soil nutrients which will slowly deplete soil test values. An ideal fertilizer ratio should replenish soil nutrients lost from plant uptake and processes such as leaching and fixation. After analyzing years of turfgrass growth, uptake, and soil test data, Dr. Kussow proposed a few ideal fertilizer ratios which I've adapted for various management scenarios (Table 1). We'll continue to verify these ideal ratios under different management scenarios and soil types into the future.

Continued on next page



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Fertilizer Ratio - cont.

Table 1. Proposed ideal fertilizer ratios for different cool-season species and management scenarios. Soil test to confirm soil test nutrient levels are static and adjust these ratios as necessary for your particular situation.

Fertilizing to these ideal fertilizer ratios is a good way to sustain soil test P and K levels regardless of how much N is applied. Fertilizing above these ratios, with products such organic fertilizers with high P2O5 and low N, will cause soil test values to increase. Alternatively, fertilizing below these ideal ratios will cause soil test P and K levels to decline over time. This may be fine, especially at sites with high soil test levels. I encourage you to compare your Mehlich-3 soil test results with the Minimum Levels for Sustainable Nutrition (MLSN) guidelines generated by PACE Turf and the Asian Turfgrass Center (http://www.paceturf.org/PTRI/Documents/1202_ref.pdf). Briefly, if soil test P is much greater than 21 ppm and K is much greater than 37, then there is little reason to apply anything other than straight N (PACE Turf, 2014). Then

use soil testing to monitor the decline in soil test P and K over many years. Supplement N spoon-feeding with granular P and K once soil test levels approach MLSN recommendations. As you calculate your annual fertilizer additions, take a moment to see how close you came to an ideal ratio of N:P2O5:K2O. Try to use the diversity of fertilizer ratios to your advantage.

Sources:

1. Kussow, W. R., D.J. Soldat, W.C. Kreuser, & S.M. Houlihan. 2012. Evidence, regulation, and consequences of nitrogen-driven nutrient demand by turfgrass. Available at <http://downloads.hindawi.com/journals/isrn/2012/359284.pdf> (verified on 13 October 2014). ISRN Agronomy.
2. PACE Turf. 2014. Minimum Levels for Sustainable Nutrition Soil Guidelines. Available at http://www.paceturf.org/PTRI/Documents/1202_ref.pdf (verified on 13 October 2014). PACE Turf, LLC, San Diego, CA.
3. Waddington, D. V., T. R. Turner, J. M. Duich, and E. L. Moberg. 1978. Effect of fertilization on Penncross creeping bentgrass. Agron. J. 70:713-718.

Bill Kreuser, Assistant Professor and Turfgrass Extension Specialist, wkreuser2@unl.edu Originally Published Oct 9th, 2014

Graphs on the following pages.

Grass Species	Root Zone Soil	Mowing Clipping Management	Ideal Fertilizer Ratio Total N: P ₂ O ₅ :K ₂ O
Cool-season lawn and athletic field species (Kentucky bluegrass, perennial ryegrass)	Native soil	Clippings Removed	4-1-3
		Clippings Returned	8-1-4
	Sand-based soil	Clippings Removed	4-1-4
		Clippings Returned	8-1-8
Creeping bentgrass turf	Native soil	Clippings Removed	4-1-3
		Clippings Returned	6-1-4
	Sand-based soil	Clippings Removed	4-1-4
		Clippings Returned	6-1-6

RECERTIFICATION HOURS for KANSAS & MISSOURI plus GCSAA CONTINUING EDUCATION UNITS will be offered at this year's conference.



Heartland Green Industry Expo

Common ground

December 18-19, 2017

Embassy Suites / Olathe Conference Center

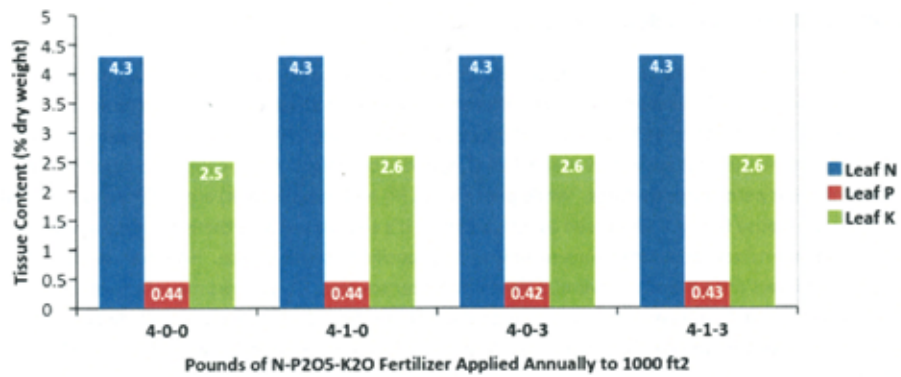


Figure 1. Creeping bentgrass leaf tissue nitrogen, phosphorus, and potassium content were not statistically affected by either phosphorus or potassium fertilization because the soil contained enough of both nutrients to satisfy plant nutrient demand. Source: Kussow et al., 2012.

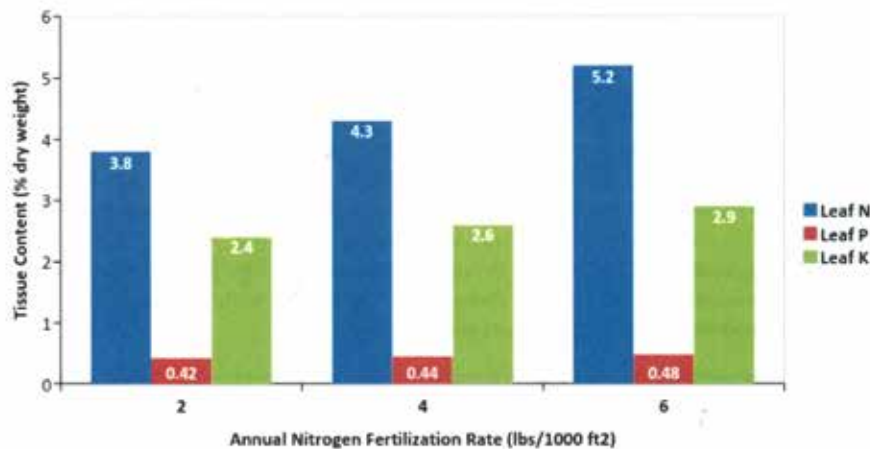


Figure 2. Creeping bentgrass leaf tissue nitrogen, phosphorus, and potassium content influenced by annual nitrogen fertilization rate. Plant nutrient demand is a function of growth rate which is influenced by nitrogen fertilization when other nutrients aren't limiting. Source: Kussow et al., 2012.

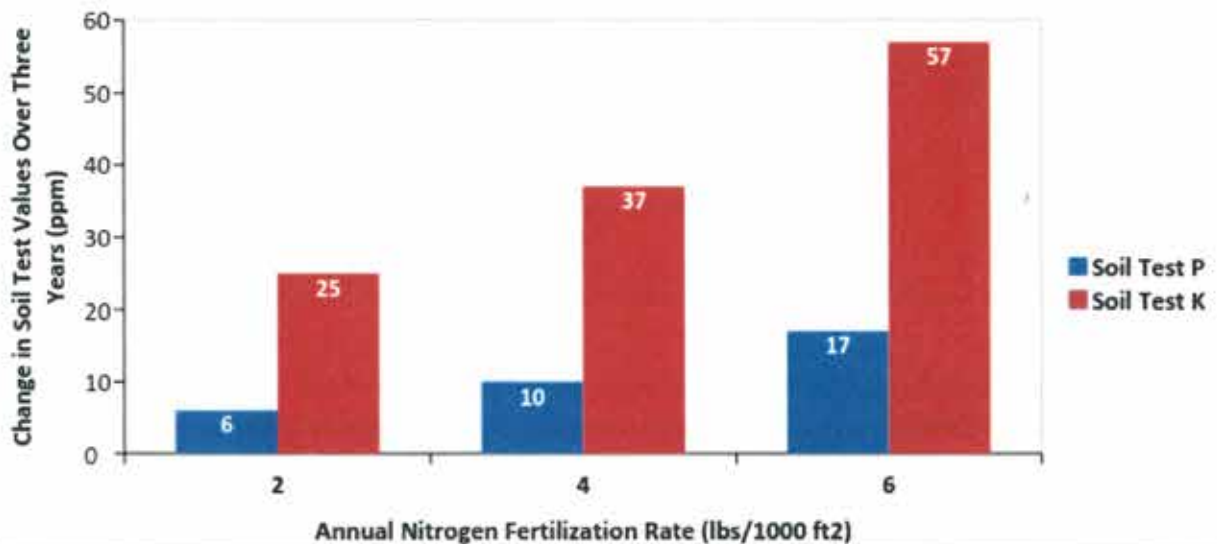
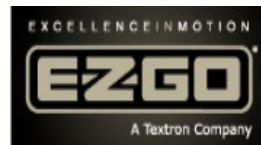


Figure 3. Nitrogen fertilization rate influence Bray-1 soil test phosphorus and potassium values over the course of three years. The initial soil test P and K values were 62 and 180 ppm, respectively. Plots were fertilized with a 25-5-10 product. A higher ratio of P and K to N is required to sustain soil test nutrient levels.

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Member Profile

Between the Tees

With Adam Breitenfeldt, Superintendent, Lawrence Country Club

Briefly, tell us about your family.

My wife Jennifer and I have been married for 10 years. We are both originally from Nebraska and have spent the last couple years moving around the country while I moved up through my career path. We have a son, Wyatt, who has recently turned 3. All three of us are happy to put down roots and call Lawrence our home.

If you could do it all over again, would you change your career? If so, to what?

If I could do it all over I would not change my career. I would however, want to get into it earlier than I did.

What advice you would give to others doing the same job you are doing?

Surround yourself with good people. Have Fun. Have an outlet. Enjoy your time off. This profession can be physically and mentally draining. Don't lose sight of just how great it is to be a Superintendent.

Who was a mentor to you what did they teach you?

I would say that all three Superintendents I came up under would be my mentors. Mitch Bowers at Harmony Club, Josh Lewis at Chambers Bay, and Ross Laubscher at Entrada. All three of these guys are great Superintendents and could not be more different in personality and how they ran a golf course. I think the biggest thing I took from that is the role of Superintendent is not a one size fits all position. You can be successful in a number of ways as long as you are true to what you believe. I incorporate things I learned from all three guys into our daily life here at Lawrence Country Club.



Adam Breitenfeldt and his wife, Jennifer, and their son, Wyatt.

Continued on next page



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Member Profile - cont.

Except for pay and hours worked what one change would you make to your job to make it an even better job?

I honestly can't think of anything I would change. Maybe the weather.

If you weren't in the golf industry, what other career would you choose and why?

If I wasn't in the golf industry I would like to think that I would be head of a gang intelligence unit/task force in a major city.

Golf got it right when? Anything the R&A does. I love the simplicity in how they run major tournaments. It's the purest form of golf.

Golf got it wrong when?

Anytime they try and make golf gimmicky, i.e. foot golf, 15" cups etc...

What's your most memorable HEART event?

Unfortunately I haven't been to that many events, but the most memorable event was probably the MoCup last year.

One thing most HEART members don't know about you?

I enjoy philosophy. Reading works by Kant, Locke, Plato, Aristotle, etc...

One thing you want to do that are too busy to undertake.

Golf

Real quick: Favorite adult beverage, college team, pro team?

Favorite adult beverage would be a close race between Busch Light and Bourbon. My favorite college team is the Nebraska Cornhuskers (every sport)

My favorite Pro teams include

- Oakland Raiders
- LA Lakers
- LA Dodgers
- LA Kings

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Editor's Column

On This Date!

By Andy Klein, CGCS, Editor

Back by popular demand is a look back at what the Heart of America was up to 36 years ago...

- Duane Patton, CGCS of Lawrence Country Club was our President!
- GCSAA was celebrating its 55th birthday
- The 5th Annual Fall Tournament (now the MO Cup) was at the newly constructed 18-hole course at Tan-Tar-A. The entry fee was \$35 and a room at the resort was \$35 per night.

Here are a few clips from the September 1981 Heartbeat.

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Zoysia: Good News and Bad

Recent research at the University of Missouri-Columbia South Farms has shown that zoysia requires a seasonal total of only two to three pounds of nitrogen per 1,000 square feet, unless rapid recovery from injury is needed, provided soil potassium and phosphorus are kept at high levels. Zoysia, especially the variety known as Meyer, has been found to have excellent heat and drought tolerance, but high-quality zoysia turf will require 20 to 25 inches of moisture per year. Other requirements for top-quality zoysia include mowing with a heavy reel mower at about three-fourths inch and annual or biannual removal of thatch by aerifying, vertical slicing or both.

UMC tests also showed that spraying selected pre-emergence herbicides on newly planted zoysia might retard growth for a short time, but would enhance the spread of zoysia in the long run by eliminating weed competition. Chemical control of broadleaf weeds should be delayed until a few weeks after zoysia has been planted.

Variations on planting of zoysia in tilled beds include "no tillage" planting by eliminating existing ground cover with glyphosate, paraquat or some other appropriate chemical before planting. UMC researchers are also experimenting with plugging zoysia in Kentucky bluegrass turf treated with growth-regulating chemicals to retard bluegrass growth and reduce competition to zoysia. The technique appears promising, especially if it is combined with certain irrigation and fertilization techniques.

Promising results have also been reported by researchers at Southern Illinois University, who are trying to make seeding a practical reality with the help of chemical treatments to improve germination of thick-hulled zoysia seed.

Mel Anderson, former superintendent of Alvarado Hills Country Club, Lawrence, Kansas, has been fairly successful with this procedure: freezing and thawing seed several times, machine scarifying the seed hulls and then pre-germinating the seed under heat lamps before seeding.

Despite progress in improving germination of zoysia seed, morphological variation in the types of plants grown from the seed is still a concern for turf managers.

—MVTA, newsletter of the Missouri Valley Turfgrass Association



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