



Wasatch Mountain State Park Golf Course

Chin up: The Crew Morale Series

Design on a Dime

2nd installment

By: Alan Davis, Superintendent—Willow Creek Country Club

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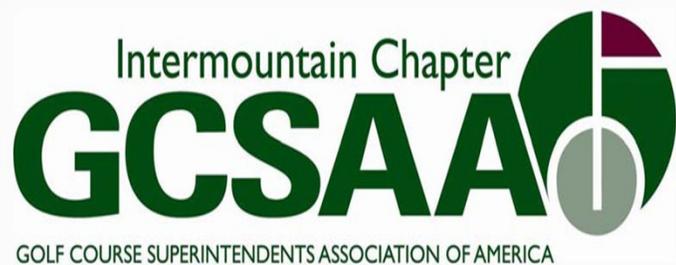
Since crew empowerment and morale are topics that are a big part of who I am and how I manage, I wanted to expand what was initially a single article into a series. I have had many ideas throughout my career of how to make the corners of my employees mouths go up. Some ideas have been good, some bad, but all showed effort on the managers part. I truly believe just making an effort to show appreciation goes a long way.

This installment I would like to talk about what you can do inside your maintenance facility to clean things up and make it as pleasant of a work environment as it can be.

First things first, all of what I'm about to say is irrelevant if there is not a regular cleaning schedule. Not every time has to be a deep, tile behind the toilet kind of clean, but a rotation of individuals responsible for sweeping, wiping, restocking, etc. We all have to take ownership of our environment, or things can go south in a hurry.

Utilizing space. First thing I would recommend is see if your shop is an effective use of space. What I mean is take stock of the layout of your shop. For example could adding a door in an area cut down on traffic in another? Could attic areas be utilized for storage by adding OSB? What is the most effective seating arrangement for the break room? How many lockers do we really need? How much more room for equipment could there be with a pallet rack system? Some or none of these questions may pertain to your particular situation, but the point is to get the wheels turning.

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President's Message

Swaying Phantoms



I am a golf superintendent by trade and the President of the Intermountain Superintendents Association (IGCSA) by election. But, I also spend a fair amount of time and practice at the noble vocation of being a Professional Westerner. As such, I tend to view the World and by extension my role within the IGCSA with a wind burned Western sensibility. My opinions about our organization's mission are heavy with lessons learned living amid the high-desert sun and salt winds that overlook and roam the isolated Western Lands.

The isolation of the Arid West in some ways creates an odd comfort and closeness – Kindred really - amongst the people that live and work there. Distance between towns and golf courses are often not measured in blocks or miles but in geography and time. Time spent traveling from outpost to outpost. Turfgrass salesman rolling over grey asphalt while summer heat creates a distant mirage of swaying phantoms. Seldom another truck – often just tumble weeds crossing the red sodic land unabated but for BLM juniper and wire fence. Time, rock, wind, heat – the wonderful isolation of the American West in which we make a living.

There is a certain direct thoughtfulness of action about folks that have gone from young to old in the West. Folks that know the rapid tingle hum of Michelin meeting metal cattle guard on a freeway onramp. Folks that hope for summer rain but most days settle for the fleeting relief of orographic white bubbles blocking July's consistent stalking. Folks that have walked in a field of alpine windflowers – purple lupine, blue flax, red paintbrush, an occasional unknown orange - while sheep limp about and snow hides below the remaining north shade. And I am thankful that so many of our members understand what it means to have these and other experiences uniquely peculiar to a Westerner.

As a golf superintendent I get up early - try to work hard and do a good job. At night I hug my kid before bed and go to sleep tired. Between - I hope that I am able to treat folks pretty square - laugh a little bit – maybe ski. I think the members of our organization and most Westerner's do pretty much the same in some form or another and I like that.

As president of the IGCSA I hope that I am able to do alright by our members. I hope I can, perhaps put our members in a better position to support their families now and in the years to come. It seems a simple goal - a sensible and honest goal - a Professional Westerner's goal.

Patrick M. Christoffer – 435-657-4061 – pat.christoffer@redledges.com
Red Ledge Golf Club
IGCSA President

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Juggling

Written by: Alan Davis, Superintendent—Willow Creek Country Club

This is the beginning of new series in the newsletter, highlighting IGCSA members with interesting hobbies, or unbelievable talents. Who to start with? What to look for? We found the answer sitting at the table with us at the last IGCSA board meeting. What to say about a lady that tends to the needs of 253 children, 3 of which are her own? Find meeting locations, make sales calls, answer emails, organize events, anything and everything all at once. That is just her IGCSA family.



Let me say, even being relatively new on the block, it is apparent she is a huge part of what makes this association great.

Natalie was born and raised in the Salt Lake Valley, with one older brother, one older sister, and a younger sister. She has married one her IGCSA “kids”, T.A, and they are raising three boys. One can only imagine what that the grocery bill coming out of that house would be. On that topic, Natalie is a self-proclaimed “health nut” as it pertains to diet and fitness. Her love of fitness is to the point that one day in the future she aims to become an in-

structor. In addition she enjoys traveling, hiking, dancing, and anything pink. Her hidden talent that deserves recognition is that she is extremely good at juggling. Not in the conventional sense, but nonetheless she has many things in the air at once. She will gladly accept in return for all she does for us the following payments: daisies, sugar cookies, pink things, and thank yous. One of those I’m sure you could come up with the next time you see her.

2017 IGCSA Educational Scholarship

Be on the lookout for the 2017 IGCSA Annual Education Scholarship email. This will be sent out at the beginning of April and packets must be received by May 15th. Forms can also be found on the igcsa.org website.

This year, the board voted on doubling the scholarship money. Therefore, two (2) \$1,000 scholarships will be awarded in the “Superintendent/Assistant Superintendent” category and two (2) \$1,000 scholarships will be awarded in the “all members/family members” category. If there are not enough applicants in one category, award money can be awarded to the other category. (For example, if there were only one applicant in the “Superintendent/Assistant” category, three (3) applicants could be awarded in the “all members/family members” category so \$4,000 is always given).

We hope you find this benefit valuable and encourage you and your family to apply if you qualify!

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research

**Article originally published in GCM Magazine—February 2007*

Using PGRs to reduce *Poa annua* competition

Over a period of years, some plant growth regulators can reduce the presence of annual bluegrass to 5% to 15% in a creeping bentgrass stand.



Plant growth regulators have received considerable attention as a method to diminish the amount of annual bluegrass in a mixed stand of creeping bentgrass and annual bluegrass (1,2,4). When PGRs were initially introduced, they were applied once in the spring and again in late summer to reduce growth when conditions were best for grass growth. As superintendents worked with the PGRs, they realized that more consistent growth regulation could be obtained by applying them regularly throughout the growing season.

Some confusion has arisen over which PGRs can be used to reduce annual bluegrass and the optimal way to use these PGRs. Our research can provide some guidance for superintendents.

Basics of PGR usage

Different types of PGRs yield different growth-suppression characteristics. The most widely used PGRs suppress the production of the plant hormone gibberellin. These PGRs exist in many chemical forms. Three are currently labeled for use on golf course turf: Trimmit or Turf Enhancer (paclobutrazol), Cutless (flurprimidol), and Primo (trinexapac-ethyl). All these PGRs work in the same manner — they suppress the production of gibberellic acid, the hormone responsible for cell elongation. Following treatment with these PGRs, growth is initially suppressed for about two weeks; then, the turf begins to grow more rapidly but is still suppressed (this phase lasts approximately two more weeks); finally, the turf resumes normal

growth unless another PGR application is made. If the PGR application is not made or is delayed too long, the turf can grow at a rate faster than untreated turf; this has been termed “rebound growth.” Each PGR follows this pattern, but some are more effective — that is, they maintain longer periods of growth suppression — than others.

Other PGRs have different modes of action than the anti-gibberellins mentioned above, but the anti-gibberellins are widely used on golf courses because of their turf safety and consistent performance. In a sense, these products alter turfgrass growth and reduce clippings while often improving turf quality. PGRs can increase chlorophyll content in turfgrass plants, thereby producing a darker green turf.

PGRs and *Poa annua* control

Although the first PGRs used in turf were evaluated for growth regulation, the first commercially successful turf PGRs were growth regulators used primarily for annual bluegrass control. Annual bluegrass is the worst weed problem in turf and for many years there were no post-emergence controls. Two active ingredients introduced in the late 1980s, flurprimidol and paclobutrazol, appeared to offer some control of annual bluegrass and are the focus of this article.

The purpose of this research was to determine the relative response of two turfgrass species, annual bluegrass (perennial type) (*Poa annua* var. *reptans* (Hausskn.) Timm) and creeping bentgrass

Bruce Branham, Ph.D.
William Sharp

Get to Know Your 2017 IGCSA Board of Directors



Pat Christoffer, President
Superintendent—Red Ledges Golf Club

Pat Christoffer has turned a summer job at a small Country Club outside of Seattle, WA into a 20 year adventure in turfgrass management and research. Currently, Pat works for Troon Golf as the Director of Agronomy at Red Ledges in Heber City, UT. Earlier in his career Pat earned his B.S. and M.S. from Washington State University (Go Cougs) while overseeing a team from Monsanto and The Scotts Co. researching GMO Bentgrass. Pat is always looking for innovative and fun ways to manage turfgrass. Away from the course, Pat is avid sportsman - spending time telemark skiing, captaining his drift boat, and playing shortstop on a below average coed softball team. Pat lives with his beautiful wife, wonderful young son, and awful dog in Midway, UT.

Ben Timmons, Vice President
Superintendent—Jeremy Golf & Country Club

A native of Fredonia Kansas, a rural community in southeast Kansas and graduate of Kansas State University. I moved to Park City directly after graduation from Kansas State with a degree in Horticulture with an emphasis in Golf Course Management, to work at Glenwild Golf Club as the second assistant. After nine seasons at Glenwild as second assistant then first assistant I accepted the job as Golf Course Superintendent at Jeremy Ranch Golf and Country Club in July of 2014. I was 19 the first summer I worked on a golf course and have been involved in golf course maintenance every year since for a total of 16 years and looking forward to many more. I married my lovely wife in December of 2013 and our first born daughter arrived in February of 2014. Our second daughter is expected to arrive in March of 2017.



Justin Jeffery, Secretary/Treasurer
Superintendent—Victory Ranch

First I would like to mention that it is an honor and am humbled to serve as Secretary/Treasurer of the IGCSA and be a part of this great Board. Like most of you I got involved with GCM due to my love of the game and being outdoors. Stating that, a majority of my hobbies are outdoors. I am an avid fly fisherman, hunter, camper, hiker, trail runner, softball player, horse trail rider, explorer, use to ski before kids and really just an outdoors enthusiast. Living in the mountains of Utah has been great for me. Since I have lived here I was married and have two beautiful daughters 4 & 6. I thoroughly enjoy getting them out to learn in the mountains fishing and hiking as well. While not on course, I am either doing things around the house or exploring the outdoors. It would typically include time on my two horses or bringing my two Irish Red and White Setters along with the family on our trips.

David Carruth, Director
Superintendent—Murray Parkway Golf Course

Like many of you, I've been fortunate to be able to make a career out of something that I love doing and from the qualities taught me from two of my heroes. My father who taught me the value of hard work and my grandfather who gave me a love for the game of golf and an appreciation for the field on which it is played. I began working at the Ogden Golf and Country Club in the summer of 1983 for legendary Superintendent Ken Stirland and my first day on the job I remember saying to myself, "I could do this for a living." In 1986, I moved my young family to Murray and began working as the Mechanic for the newly opened Murray Parkway Golf Course. One year later I was awarded the position to be the Assistant Superintendent for Ken Stirland who continued to teach me the fine details of turf management. In 1996, I was given the opportunity of a lifetime by then Murray Mayor Lynn Pett to be the Superintendent at Murray Parkway (known by some as "The Hub"). I have been married to the girl of my dreams for 31 years and have four terrific children with two grandchildren and two more on the way! Maybe some future Superintendents in there somewhere? In spite of serving previously on the IGCSA Board of Directors and one year as President, I feel that I am at a point in my life that maybe I have a little more to give back to the Association that has been such a large part of my career where I have gained valuable education, made lifetime friendships and helped me realize that you don't have to be the best at golf, just enjoy what positive influence it can have on life.



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Chapter Executive's Corner

Natalie Barker

Hi Everyone! Happy SPRING!! "Spring is nature's way of saying—Let's Party!" This is one of my favorite times of the year simply because of the warmer weather, blooming flowers, Easter and walks with my boys. I'm sure you are all busy around your courses doing winter cleanup and making things GREEN! Cheers to everyone for a successful, productive and HAPPY season! Here are a few reminders and items of interest...

- Membership applications have been mailed out to address you have on file. (Our year runs from April 1st—March 31st.) Please make sure to renew by the end of the month. Applications can be downloaded from the IGCSA website. Membership cards will look a little different this year—I hope you like them!
- Be on the lookout for the IGCSA Educational Scholarships coming out in the next few days. This year we will offer two (2) \$1,000 scholarships for a Superintendent/Assistant Superintendent and two (2) \$1,000 scholarships to all other members/family members.
- Remember to tune into ESPN 700 AM on Saturday mornings from 8 am -10am for the Utah Golf Weekly radio show. Our very own TA Barker, CGCS (Fore Lakes Golf Course) is a permanent co-host on the program. You also listen online at espn700sports.com.
- We are always looking for golf courses and venues to hold our meetings and events at. If your course is willing to work within our budget and time frame contact me!
- In order to remain affiliate with GCSAA, we had to amend our bylaws to reflect the change from SM to B classification. Updates have also been made to our classifications to match what we currently have. These changes will be voted on at the Chapter Championship in July. Be on the lookout for an email from me with those changes.



(*Agrostis stolonifera* L.), to three plant growth regulators. In order to determine the relative response of each species, separate, pure stands of either annual bluegrass or creeping bentgrass were treated with various PGR regimes.

Materials and methods

The trials were conducted during the 2003 and 2005 growing seasons. In 2003, only Primo and Trimmit were included in the trial. In 2005, Cutless was added to the trial. Three rates of each PGR were applied to separate stands of either annual bluegrass or creeping bentgrass mowed at 0.5-inch height of cut, generally with a three-week application interval. In 2003, treatments were first applied on April 18; the last application was on Sept. 12. In 2005, the first application was made on April 28, and the last one was on Sept. 1. All treatments were applied using a backpack CO₂-pressurized sprayer.

In 2003, the trial was conducted on Dominant Plus, a blend of three creeping bentgrass cultivars (64% Providence, 20% SR 1020 and 16% SR 1119), and in 2005, the trial was conducted with Backspin creeping bentgrass.

The annual bluegrass was a wild type that has been prevalent at our research center for many years. The research center was established at the present site in the 1960s and has been under continuous turf production ever since. The annual bluegrass exhibited morphological characteristics similar to perennial-type *Poa annua*.

Clippings were collected twice per week, and fresh and dry weights were recorded. Data on visual turf injury and turf quality were collected weekly. Within each species, the experimental design was a randomized complete block design with three replications.

Results and discussion

We have presented most of the data as a percentage of the control by species (that is, when clippings collected from a PGR-treated plot weighed the same as those from the untreated plot, the PGR treatment would be 100% of the control). This means of expressing the data removes the control and permits us to compare treatments directly, so we can see how each species responds to the different PGRs (Table 1).

Primo

Primo appears to regulate both species to approximately the same degree. Primo is a very good growth regulator, but its use in an annual bluegrass reduction program will not produce a significant reduction in the annual bluegrass pop-

ulation. In fact, recent research has shown that Primo may increase annual bluegrass populations by improving the health of the annual bluegrass plants (3). Therefore, where annual bluegrass is a desirable component of the turf, a growth regulator program using Primo will be beneficial.

Trimmit and Cutless

The two other PGRs, Trimmit and Cutless, both reduce annual bluegrass growth more than creeping bentgrass growth (Table 1). Over time, this allows creeping bentgrass to grow more than annual bluegrass and to increase its population in the stand. Examination of a typical season-long growth response curve (Figure 1) reveals some important points.

Application intervals. First, note the length of time between spring applications. The interval between applications was supposed to be three weeks, but turf injury on annual bluegrass from the highest rates of Cutless and Trimmit was so severe that repeat applications were delayed for an additional three weeks, for a total of six weeks between the first and second application in 2005 and between the second and third application in 2003. All PGRs seem to exhibit more growth regulatory activity in spring than in the warmer summer months. Initial rates of application of Trimmit and Cutless should be reduced in spring or injury to annual bluegrass will be excessive. When applying these products for the first time in the spring, we recommend rates of 4-8 ounces/acre (0.029-0.058 milliliter/square meter) for both Trimmit and Cutless. If the *Poa annua* percentage has been reduced by previous PGR usage, then

PGR	Rate (ounces product/acre)	% control, season average			
		2005		2003	
		Creeping bentgrass	Annual bluegrass	Creeping bentgrass	Annual bluegrass
Control		100	100	100	100
Trimmit	8	97	68	96	84
Trimmit	16	74	38	79	51
Trimmit	24	59	24	65	31
Primo	2.2	106	111	103	100
Primo	6.5	81	98	79	77
Primo	10.9	89	83	70	74
Cutless	8	93	69		
Cutless	16	75	55		
Cutless	24	60	41		
Trimmit	8,16,24	72	39		
Trimmit	8, 16 at 4-week interval	103	49		
LSD	17	10	21	29	

Table 1. Effect of repeated PGR applications on the growth of annual bluegrass and creeping bentgrass. Data are presented as a percent of the control (untreated turf).



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research

initial rates of 8 ounces/acre (0.058 milliliter/square meter) should still be sufficient.

Spring activity. Second, note that in spring 2003, Trimmit shows little differential growth suppression at 8 ounces/acre (0.058 milliliter/square meter) (Figure 1). Both species show very similar levels of growth suppression throughout the spring. The spring applications do not seem to benefit either species very much. In 2005, the six-week delay between the first and second application

permitted the creeping bentgrass to come out of regulation, and a difference in growth suppression between the two species was observed (Figure 1).

Selective species regulation. The third point is the length of time after an application that the growth of a species is below the growth of the control, that is, below 100%. In Figure 1, at the lowest rate of Trimmit used, annual bluegrass rarely goes above 100% (that is, it rarely grows at the rate of the control) for the entire period of the experiment. Conversely, for about half of clipping measurements, Trimmit-treated creeping bentgrass is growing faster than untreated creeping bentgrass. Annual bluegrass is not only regulated more severely, but it also takes longer to come out of regulation than does creeping bentgrass.

Cutless appears to regulate both species a little better in spring, but the ability of Cutless to regulate annual bluegrass seems to wane when temperatures rise in summer (Figure 2). In addition, at 8 ounces/acre (0.058 milliliter/square meter), Trimmit and Cutless provided similar seasonal suppression of growth for both species, but Trimmit appeared to provide better growth regulation of annual bluegrass at 16 and 24 ounces/acre (0.117 and 0.175 milliliter/square meter) (Table 1). Both Trimmit and Cutless have the same mode of action, but they are not the same product and some differences in activity should be expected.

These graphs show that most of the selective species regulation occurs in the summer, and that spring applications do not give the same level of selective regulation. Therefore, using higher rates of these products in spring would be counterproductive — not only would there be more turf injury, but creeping bentgrass also would not benefit as much because it is nearly as well regulated as annual bluegrass in spring. However, I still believe these products should be used in spring, even though both species are regulated to about the same extent. The growth data for untreated creeping bentgrass and untreated annual bluegrass show that untreated annual bluegrass has a bit of growth spurt in spring that most likely permits it to gain some ground on untreated creeping bentgrass.

Putting it into practice

How can superintendents use this information? How should they modify their current PGR programs?

Application intervals

First, our data indicate that annual bluegrass and creeping bentgrass differ significantly in their responses to Cutless and Trimmit. To maximize

Trimmit, 2003 and 2005

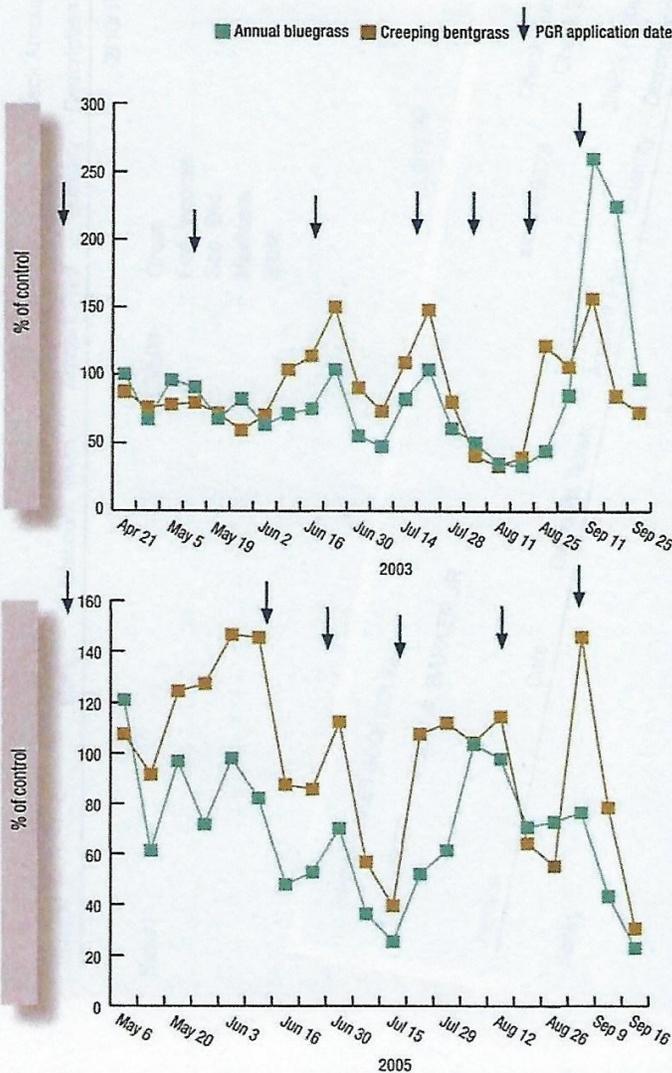


Figure 1. Seasonal growth responses of annual bluegrass and creeping bentgrass in 2003 and 2005 to sequential applications of Trimmit at 8 ounces/acre.

Chin up: The Crew Morale Series (Continued from cover)

Knocking walls down could open things up, or putting one up could give an employee a sorely needed work space or break area. Use your imagination and walk around your shop and audit your space. Another thing to think about is possibly utilizing other buildings on your property. Is there room in a pump house to store supplies? Sometimes the club house cart barn could come in handy for at least winter storage of vehicles or other pieces of equipment. Odds are there is more space than you ever realized. Knocking walls down could open things up, or putting one up could give an employee a sorely needed work space or break area. Use your imagination and walk around your shop and audit your space. Another thing to think about is possibly utilizing other buildings on your property. Is there room in a pump house to store supplies? Sometimes the club house cart barn could come in handy for at least winter storage of vehicles or other pieces of equipment. Odds are there is more space than you ever realized.

Cleaning house. “We may need this one day.” “We can use this one for parts.” Sell it, trade it, give it away. Say it with me. What starts out as an honorable, money saving technique for your club, inevitably turns into a bone yard. The triplex that was set out back many years ago has long since been parted out, and all that remains is the frame. We are all guilty of it to different extents, but there is a value to be put on a tidy shop yard. Take stock of what you use in a given season and be open minded to letting go of unused items. As it pertains to equipment, if it is still in descent working order, put a posting on the IGCSA, or simply call around to fellow superintendents and see if anyone is in need. Course accessories are always in high demand. If you are changing rakes on the course put a fair price on your old ones, or simply give them away. There is no need to have 108 flagsticks unless you are...never-mind there is no unless. Same thing with cups, coolers, traffic stakes, etc. Someone can use them, and wants to, you just have to find them.

Lipstick on the pig. Some of us may have maintenance facilities that if we had to choose an animal to liken it to, it would be a pig. So the attitude sometimes is, why would I sink any money into this, a pig will always be a pig. True, until you realize how little lipstick you actually have to put on it to change things. If you have a break area for the employees, take stock of the last time you put any money into it. This is an area that your employees visit every day and sometimes more than once a day. Are you taking care of the people taking care of your golf course? I bet some of us would be surprised at how inexpensive a renovation can be. Unfinished cabinetries are less than \$100 for a large unit, or if you have some talent on the winter crew, make some. Countertops can come in under \$200 for a 9' section. Chairs and tables can be unbelievably cheap if you shop around used office supply stores. So are desks, lockers, filing cabinets, and shelving. Classified ads and some of the online auction sites sell bigger ticket items such as refrigerators, microwaves, washers and dryers for what seems like pennies on the dollar. There are many resources out there you can use to put a new coat of polish on your shop area. What you'll find is that with enough lipstick it really doesn't look like a pig anymore.

In summary I would simply suggest to make a plan of action. Some of what I've mentioned here doesn't cost a dime, just a little time and effort, but it makes a huge difference to all involved. Please feel free to contact me if you need any recommendations on the particulars of getting your own “design on a dime” project going.



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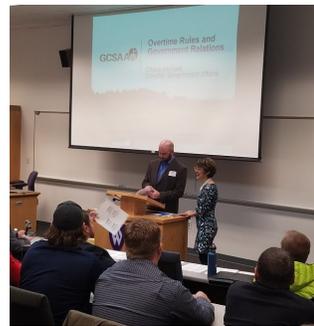
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January 19th, 2017—Winter Education Conference

Huge THANKS to everyone that braved the storm and attended the Winter Education Conference at Weber State University. We had record attendance at this meeting and AWESOME speakers! First up, Chava McKeel, Director of Government Relations, GCSAA, discussed the pending overtime rules and hot topics that GCSAA is currently working on. Next Thomas Bastis, CGCS, from the California Golf Club kept the group entertained with his stories of ultra-distance running, kayaking, mountain biking and his use of drones on the course. After lunch, Jay Hill, Head Football Coach of Weber State got the crowd motivated with his presentation on trials, tribulations and teamwork. We ended the day with PAT (Peer Approved Training) talks. Brandon Haddick, Mile High Turfgrass talked about going from a superintendent to a salesman. Dan Farnes, Director of Fields and Grounds at Rio Tinto Stadium talked about how him and his crew maintain the RSL soccer field and finally Pat Christoffer, Superintendent at Red Ledges Golf Club talked about his new 12 hole golf park where anything goes. We truly appreciate your support and participation at these meetings!



Left: Pat Christoffer introducing Chava McKeel



Thomas Bastis, CGCS



Coach Jay Hill, WSU



Brandon Haddick, Mile High Turfgrass

Right: Dan Farnes, Real Salt Lake



L-R: David Phipps, Thomas Bastis, CGCS, Brandon Haddick, Justin Woodland, Pat Christoffer, Scott Allen, Chad Severtson and Ben Timmons



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Alan Davis, Director

Superintendent—Willow Creek Country Club

I am originally from North Carolina. Have lived in Utah a total of 8 years, off and on. I have been playing golf since I was two years old. My hobbies include trail running, backpacking, SKIING, and golf. I have a wife of 9 years named Kara, a son named Micah who is 3.5, and an Alaskan malamute named Ruby who is 6. My family and I are possibly some of the biggest Green Bay packer fans this side of Wisconsin.

Eric Gifford, Director

Superintendent—Riverside Country Club

Hello, my name is Eric Gifford and I am the Golf Course Superintendent at Riverside Country Club in Provo. I have been in the golf industry for 17 years, first introduced back in 2000 at Hillcrest Country Club, a Perry Maxwell designed course in my home town of Bartlesville, Oklahoma. I worked for Oklahoma Turfgrass Hall of Fame Member Ed Brookshire, who inspired me to want to be a Superintendent and to go to college for turf management. I attended Oklahoma State University, where I received my BS in Horticulture & Turfgrass Management. Over the past 17 years I have worked on courses all across the country from California to New Jersey but decided to put roots down in my wife's home state of Utah. My wife Olga and I have been married for 4 years and we have two sons, Maksim and Nikolai ages 1 & 2. I love golf course architecture, specifically the "Golden Age" designs of George Thomas, Seth Raynor, Perry Maxwell and Alister MacKenzie. My top 5 favorite courses are Pine Valley GC, Cypress Point, The Riviera CC, Oak-



Paul Stokes, Director

Superintendent—Logan Golf & Country Club

After graduating with a Bachelors of Landscape Architecture, I just never could find exactly what I wanted to do. I had a great job when I graduated but never really loved that job, so from the suggestion of a friend I went back to school and got a 2 year certificate in Turfgrass management from Rutgers University. Once I finished turf school and an internship it was time to start looking for jobs. The turf industry has taken me from Virginia to Arizona, to Heber City and now Superintendent at Logan Golf and Country Club. Having grown up in Utah it has been great to be able to come home and enjoy my career in turf management. It has been a great journey and I love growing grass in my 120 acre office. I've been married almost 17 years and have 3 wonderful kids, a 9 year old boy and two 4 year olds; yep I have twins, a boy and a girl. They are awesome and I love spending time with my family. When I am not at work, I still enjoy all things outdoors and sports, watching and attending. I love growing a vegetable garden in the summer, riding my motorcycle, camping, golfing, and hiking.

Justin Woodland, Director

Superintendent—The Barn Golf Course

Justin Woodland is a Superintendent at The Barn Golf Club in Pleasant View, UT. He started at the golf course when he was 15, working on changing cups and spot watering. Years of working his way up the ladder he became the Assistant Superintendent which was a position he held for almost 20 years. The last 4 years of being Superintendent he has taken pride in the course and tries to come up with ways to be more productive, efficient, and save money with a goal of providing his patrons with the best golfing experience for their money. He has one wife Dana (Utah joke) three daughters, three stepdaughters, three son in laws, and two grandchildren. When not working on the golf course you can usually find him supporting his daughters in their sports and activities. Hobbies include, golfing, BBQing, brewing beer, and going on trips with no plans or agenda and just seeing where the road leads. In the fall/winter you'll usually see him in red or purple cheering on the University of Utah Football and/or Weber State University Basketball.





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**Brandon Neiman, Assistant Director
Assistant Superintendent—South Mountain Golf Course**

I have been in the golf business since 2000. I started at South Mountain and moved over to Old Mill in 2011. I was at Old Mill for five years and am now back at South Mountain as the first assistant. My wife Rhonda and I have two children—Lance and Micah. We love to go to Moab, Lake Powell, and Cancun. We just bought a motor home a year ago and love to travel.

**Eric Allred, Affiliate Representative
Green Source, LLC.**

Hello fellow IGCSA members, I am Eric Allred and I am currently a Vendor Liaison to the Board of Directors. I have been married 10 years and have 3 wonderful kids (ages 6, 4, 1 1/2). We enjoy doing anything outdoors from mountain biking, kayaking at the local lakes, hunting and fishing. I am an avid big game hunter and always look forward to the fall hunts.



***Brandon Haddick, Affiliate Representative
Mile High Turfgrass***

Brandon works for Mile High Turfgrass as a sales consultant. He has been in the golf business for 30 years, ten of which have been in at Glen Eagle Golf Club. He grew up at Seven Spring Resort in Pennsylvania where his father was the Director of Golf / PGA pro. Brandon attended Johnson State College in Vermont and has a BA in Business Management and also has Advanced Certificate in Turfgrass Management from Penn State University. His golf course management history includes the Northeast, Mid-Atlantic, Southern California, high altitude and high desert. Brandon enjoys family, skiing and also skiing. Brandon and his wife Monique are the parents of Will (21) and Stellan (19).

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the differential growth response between the two species, application rates and intervals between applications should be changed based on the season. Changing the interval between applications from three to four weeks allows the creeping bentgrass to come out of regulation and grow more rapidly while annual bluegrass remains regulated and is usually growing more slowly than untreated annual bluegrass (Figure 3).

Note that in late July and early August, both species came out of regulation in a big way. Creeping bentgrass was actually growing at four times the rate of the untreated creeping bentgrass turf! And annual bluegrass treated with Trimmer was growing at nearly twice the rate of untreated annual bluegrass. This program was effective in allowing creeping bentgrass to outgrow and out-compete annual bluegrass throughout the summer, but growth regulation was lost. Higher rates would be needed to reduce growth rates.

When the interval between applications is increased to four weeks, treated creeping bentgrass is often growing faster than untreated creeping bentgrass (that is, greater than 100% of control) and should be able to crowd out annual bluegrass more effectively. The three-week application interval has been developed, mainly through experimentation by superintendents, to provide consistent regulation of creeping bentgrass. However, if the goal is to reduce the amount of annual bluegrass in fairways, consistent regulation is not as important as attaining maximum differential growth to permit the creeping bentgrass as much advantage as possible. Lengthening the period between applications to four weeks should make creeping bentgrass more competitive, as long as you can keep up with the mowing.

Application rates

The second point to consider is varying the rates of application throughout the growing season. Early spring applications can cause serious turf injury, particularly to annual bluegrass. Creeping bentgrass also can be discolored in the spring when rates of Cutless or Trimmer are too high. When initiating a program in April or May, remember that temperatures can be highly variable. Beginning such a program at rates above 8 ounces/acre (0.058 milliliter/square meter) may not cause a problem if the spring conditions are warm, but if temperatures are unseasonably cool, turf injury could result. Better to be safe and always keep the first application at 8 ounces/acre (0.058 milliliter/square meter) or less. Summer applications are rapidly metabolized by both species, and higher rates are tolerated, and needed, to



maintain consistent growth regulation. However, after Aug. 15, nights are getting longer and cooler, and rates may need to be reduced to avoid over-regulation in the fall.

In our trial, application rates of Trimmer were increased from 8 to 16 to 24 ounces/acre (0.058 to 0.117 to 0.175 milliliter/square meter) over the growing season. The first two applications were at 8 ounces/acre (0.058 milliliter/square meter), the next two were at 16 ounces/acre (0.117 mil-

Both Trimmer and Cutless will increase leaf blade width with repeated use. This photo shows the effects of repeated applications of Trimmer at 24 ounces/acre (left) compared to untreated turf (right). The creeping bentgrass in the Trimmer-treated plot has noticeably wider leaf blades.
Photos by B. Branham

Cutless, 2005

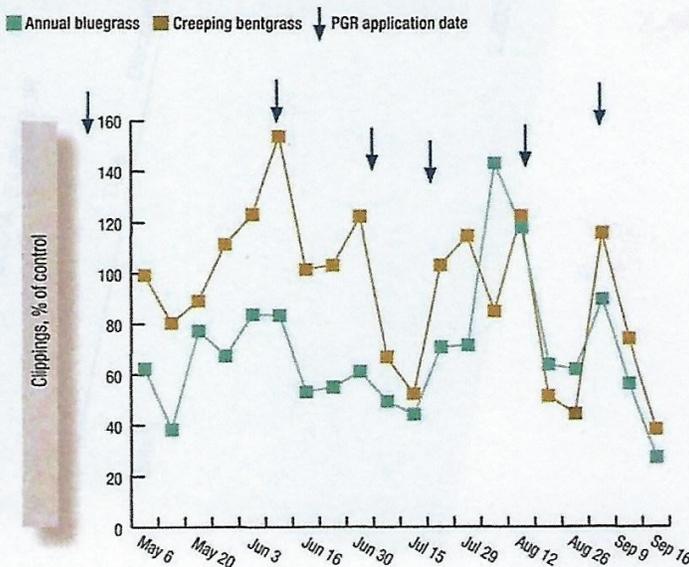


Figure 2. Seasonal growth responses of annual bluegrass and creeping bentgrass in 2005 to sequential applications of Cutless at 8 ounces/acre.

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liliter/square meter), and the final two were at 24 ounces/acre (0.175 milliliter/square meter). This approach yielded better turf quality while limiting early-season turf discoloration. Turf quality was rated weekly over the course of the experiment, and annual bluegrass treated with constant rates of 8, 16, or 24 ounces Trimmit/acre (0.058 to 0.117 to 0.175 milliliter/square meter) had average turf quality ratings of 7.0, 6.3, or 5.0, respectively, on a scale of 1-9, where 9 is the best quality. However, with the variable rate approach, average annual bluegrass turf quality was 6.7. Thus, higher overall quality was achieved, even though Trimmit application rates reached 24 ounces/acre (0.175 milliliter/square meter) by the middle of the summer.

Percent annual bluegrass

Finally, application rates should vary based on the amount of annual bluegrass in the turf. The rates recommended provide excellent growth regulation of creeping bentgrass but overregulate annual bluegrass. Thus, Cutless or Trimmit can seriously reduce annual bluegrass quality, whereas they do not affect and may improve creeping bentgrass quality. At the beginning of an annual bluegrass reduction program when annual bluegrass populations are relatively high, use lower rates of

these PGRs, particularly in the spring, to avoid serious reductions in turf quality. We recommend rates as low as 4 ounces product/acre (0.029 milliliter/square meter) for an initial spring application on turf that contains 50% or more annual bluegrass. Spring applications may need a wider interval between applications — four or even five weeks — to allow the turf to recover before additional applications are made. As the conversion proceeds, higher rates can be tolerated, because the proportion of annual bluegrass in the turf will have decreased.

We view this approach as a multiyear process that, if regularly followed, can reduce annual bluegrass populations to the 5% to 15% range. Once annual bluegrass populations reach this low level, the PGR program should be tailored exclusively for creeping bentgrass. Higher rates in the summer should be a part of the program. These growth regulators offer the possibility of a seamless transition, without turf loss, from a turf that may contain mostly annual bluegrass to one in which annual bluegrass is a minor component. Using selective herbicides to remove annual bluegrass is often impractical when annual bluegrass is present in amounts greater than about 20% of the turf. These growth regulator programs offer an option to effectively reduce annual bluegrass populations while maintaining good turf quality.

4-week intervals

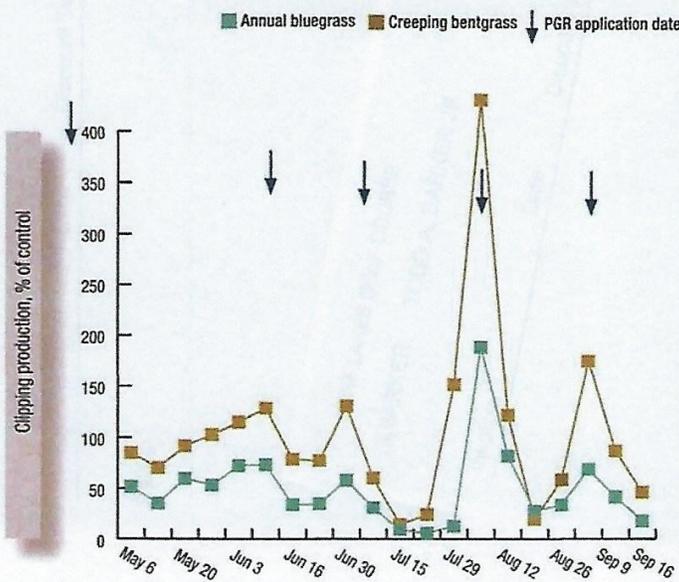


Figure 3. Response of annual bluegrass and creeping bentgrass to Trimmit applied on four-week intervals, with an initial application of 8 ounces/acre and subsequent applications of 16 ounces/acre.

Putting greens

This research was conducted on fairway-height grasses. What will happen on putting green turf? We can speculate that the same principles will be in effect, although the transition will be slower than it is on fairways because of the lower mowing heights and increased mowing frequency. Regardless of the height of cut, creeping bentgrass still must outgrow annual bluegrass. This is more difficult on greens because mowing six to seven times each week effectively reduces the rate at which creeping bentgrass can crowd out annual bluegrass.

Although the same principles apply, the concerns about reduction in turf quality are even greater for putting greens. Using Trimmit or Cutless will reduce annual bluegrass on greens, but the process may be slower than it is for fairways. Differential regulation on greens may cause additional problems for superintendents. Severely regulating annual bluegrass in the spring can cause seedheads to remain below the height of cut, resulting in bumpy putting surfaces. In addition, differential regulation can result in a bumpy putting surface when creeping bentgrass outgrows annual bluegrass. On putting greens, letting the



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Annual bluegrass can be injured from late-season applications of Trimmit, but Primo does not cause the bleaching seen here. The third plot from the right and the plot on the far right are controls, and the third plot from the left was treated only with Primo. The other plots were treated with Trimmit alone or a combination of Trimmit and Primo.

creeping bentgrass come out of regulation is not a good idea because of the effects on putting quality. Until annual bluegrass becomes a minor component of the turf, the application interval on greens would be best kept at three weeks.

Fall applications

How late in the fall can Trimmit or Cutless be applied? The answer depends on the amount of annual bluegrass present. Late-fall applications of Trimmit or Cutless can bleach annual bluegrass for the remainder of the fall and into the next spring. However, we have not observed this bleaching on creeping bentgrass. Where the majority of turf is creeping bentgrass, applications of Trimmit and Cutless can be made as late as early October in central Illinois. However, avoid using higher rates in fall applications to prevent overregulation of the turf.

Caveat

Finally, one caveat regarding our research. We measured clipping production but not creeping bentgrass stolon growth. We assumed that clipping production and stolon growth are highly correlated, but if that is not the case, then some of our conclusions may be incorrect.

Funding

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Bruce Branham (bbranham@uiuc.edu) is an associate professor and William Sharp is a research specialist in agriculture in the department of natural resources and environmental sciences, University of Illinois, Urbana-Champaign.



The research says

→ Although PGRs suppress growth, two in particular, Cutless and Trimmit, are used to selectively suppress annual bluegrass in creeping bentgrass.

→ In spring, initial rates of Cutless and Trimmit should be 8 ounces/acre (0.058 milliliter/square meter) or less to avoid turf injury. Rates can be increased in the summer when high temperatures result in reduced PGR activity.

→ To promote differential species growth, application intervals of four weeks may be effective.

→ Where annual bluegrass is 50% or more of the turf, application rates should be reduced to avoid serious reductions in turf quality.

→ Following a multiyear program of PGR use can reduce annual bluegrass levels to 5% to 15%.



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