Annual Report Oregon State University Turfgrass Program

Alec Kowalewski, Ph.D.
Turfgrass Specialist
alec.kowalewski@oregonstate.edu
(541)737-5449

Staffing:
Current team members: Brian McDonald, Senior Faculty Research Assistant

General Turf Program Comments:
The two permanent members of the OSU turf program include Turfgrass Specialist Alec Kowalewski and Senior Faculty Research Assistant Brian McDonald. In 2014, with the help of three M.S. Graduate Assistants, Clint Mattox, Brian Daviscourt and Micah Gould this team provided over 60 Extension teaching events, more than 20 site visits, 20 proceedings, 6 scientific abstracts, 8 presentations to peers within the scientific community, 11 industry publications, 7 press releases and 5 peer review journal publications.

The majority of the OSU Turf Program field research is conducted at the 6 acres of Turf Research Plots at the Lewis-Brown Farm, Corvallis, OR, as well as a handful of off-campus research projects hosted by golf courses in the Willamette Valley and Eastern Oregon. In 2014 this included over 30 industry and grant funded research projects, generating $229,701 in program funds for the year.

Undergraduate Turf Club activities completed in 2014 include, but were not limited to exhibitor events on a state and national level (3 events), guest speakers from professional associations and the state's turf industry (2 speakers), meetings with OGCSA focus groups, 1 golf outing and participation in the GCSAA Collegiate Turf Bowl Competition.

Teaching Program:
Current undergraduate enrollment (2015): 12 undergraduates
Trend in undergraduate enrollment over last 3 years: 16 students in 2012; 24 students in 2013; 18 students in 2014
Placement: 99%
Brief comments on teaching: For students with an interest in turfgrass management, Oregon State University offers undergraduate students a Bachelor's degree in Horticulture with a Turfgrass Management Option. Within this plan of study 5 courses are specific to Turfgrass Management. These courses include Principles of Turfgrass Maintenance (HORT 314), Irrigation and Drainage (HORT 360), Pesticide Applicator Training (HORT 405), Turfgrass Internship (HORT 410) and Golf Course Maintenance (HORT 418).

2014 Internship Hosts Included
Columbia Edgewater Country Club, Portland, OR
Eugene Country Club, Eugene, OR
Teton Springs Resort and Golf Club, Victor, ID
Pronghorn Golf Course, Bend, OR
Seattle Seahawks. Seattle, WA
Bandon Dunes Resort, Bandon, OR
Crocked Stick Golf Club, Carmel, IN

Research Program:

Faculty member: Alec Kowalewski

Current graduate student: Clint Mattox

MS or PhD: M.S.

Project(s): Turfgrass managers within Canada and the United States are facing increasing pesticide bans, restrictions and regulations. Considering this turf managers are seeking fungicide alternative management practices for pathogens like Microdochium patch. Previous research conducted at Oregon State University using the mineral oil Civitas One in combination with sulfur and/or potassium phosphite has shown promising results. The proposed research is intended to address concerns generated by this previous work, notably abiotic damage produced by Civitas One and the potential detrimental effects of repeated sulphur applications. Finally, as a means of continuing the search for alternative control practices, the effect of various charcoal sources and application methods will be explored. Graduation date: 2015

Collaborators: Gwen Stahnke, Walla Walla Community College and Nate Stacey, Washington State University

Funding Source: Oregon Turf Foundation, Oregon GCSA, Western Canada Turfgrass Association, Northwest Turfgrass Association and Western IPM Center, Golf Course Superintendents Association of America.

Current graduate student: Brian Daviscourt

MS or PhD: M.S.

Project(s): Cost-Benefit of Synthetic Infill and Natural Grass Systems – The objectives of this research are to analyze and compare the costs of installation and maintenance of synthetic infill and natural grass systems. Case studies will be used to develop a survey that will then be used to assess various athletic field systems on a state wide level. Projected outcomes will include an enterprise budget, user hours, cost per user and an assessment of seasonal playing conditions (ground cover, surface hardness and temperature).

Graduation date: 2016

Funding Source: Oregon State University Department of Athletics and Northwest Turfgrass Association.

Current graduate student: Micah Gould

MS or PhD: M.S.

Project(s): Oregon public school's need research on low maintenance ground covers and grasses in response to Oregon's school IPM law, which became effective July 1, 2012. The IPM law requires schools to reduce pesticide use to create a healthier environment for the preK-12 school communities. Other driving forces for this research include: pest infestations, contaminated ground water by pesticides, and budget cuts in Oregon's public school system.

Therefore, the objective of this research is to evaluate the establishment rate, drought tolerance, weed suppression, mowing tolerance, and visual quality of various ground covers and grasses in a low maintenance situation.

Graduation date: 2017

Funding Source: United States Department of Agriculture -NIFA (Secondary Extension Implementation Program Priority Area)

Current graduate student: Conner Olsen

MS or PhD: M.S.

Project(s):

1. Quantify the energy inputs and water storage capabilities of rainwater harvesting systems for use in homeowner lawn irrigation.

2. Evaluate the effects of varying irrigation rates with coincidentally varying timescales on established perennial ryegrass maintained as a home lawn.

Graduation date: 2017

Funding Source: Oregon GCSA and Oregon Turf Foundation

Other notable research projects:

Title: Effects of Pseudomonas fluorescens WH6 on annual bluegrass establishment

Description: Research in collaboration with the USDA – Forage Seed and Cereal Research Unit evaluating the pre-emergence effects of P. fluorescens WH6 on annual bluegrass in an established perennial ryegrass stand was initiated on March 11, 2013 at the Lewis-Brown Horticulture Farm, Corvallis, OR. Pseudomonas applications were made twice annually (spring and fall) at varying rates on a perennial ryegrass stand in March and again in October. Prior to fall Pseudomonas applications P. annua seed was applied to the plots. Currently, P. annua germination rates, as well as perennial ryegrass health and vigor are being assessed in the field.

Funding Source: Agricultural Research Foundation

Title: 2014 National Fine Fescue Test

Description: Oregon State University is currently a host to the 2014 National Fine Fescue Test, which is a collaborative effort including universities across 15 U.S. states (NC, NJ, MO, WA, MD, IL, MI, MN, ND, MN, CT, CA, MA, OR and IN) and two countries (USA and Canada).Victor Collaborators:

Funding Source: National Turfgrass Evaluation Program

Title: Effects of Sulfur, Calcium Source and pH on Microdochium Patch

Description: The objectives of this research are to first, determine if elemental sulfur applied with and without various calcium sources can effectively mitigate the number of annual fungicide applications necessary to manage Microdochium patch on annual bluegrass. The second objective of this research is to evaluate the effects of various sulfur applications rates on annual bluegrass health and vigor. The final objective is to explore potential correlations between soil pH, turf health and Microdochium patch incidence.

Funding Source: United State Golf Association

Title: Effects of Mowing Timing on the Efficacy of Proxy PGR to Reduce Annual Bluegrass Seed Head Production

Description: Annual bluegrass seed head production on putting greens results in a number of detrimental effects including, but not limited to reduced putting speed and consistency, and reduced aesthetics. To provide a more consistent putting surface those maintaining greens with annual bluegrass present have used a number of cultural practices such as the application of herbicides and plant growth regulators, to suppress seed head flushes. Research and practical application have shown that Embark (mefluidide) and Proxy (ethephon) provide the best reduction is seed head production. However, due to the phytotoxicty associated with the plant growth regulator Embark, Proxy is often the product of choice for suppression of annual bluegrass seed head production. Recent research has determined that Proxy absorption and transportation from the flag leaf contributes substantially to seed head suppression. However, mowing, a critical practice on golf course putting greens, removes the flag leaf. The objective of this research would be to determine if mowing delays prior to and following the application of Proxy will affect the seed head suppression of annual bluegrass during the spring flush.

Funding Source: United State Golf Association

Sample of Recent Publications:

1. Grimshaw, A.L., B.M. Schwartz, P.L. Raymer, A.R. Kowalewski and T.L. Grey. 2015. Influence of soil type on nitrogen leaching of controlled release fertilizers. Florida State Horticultural Society. In Press, Accepted Feb 15, 2015.

2. Kowalewski, A.R., B.M. McDonald and C.M. Mattox. 2015. Evaluation of sulfur rates and calcium sources on Microdochium patch and Anthracnose of an annual bluegrass putting green in western Oregon, 2013 – 2014. In Press, accepted Feb 12, 2014. Plant Disease Management Reports.

3. Mattox, C.M., A.R. Kowalewski, and B.W. McDonald. 2014. Evaluation of winter fertility practices in combination with simulated traffic in order to determine their effects on the suppression of Microdochium patch and turfgrass recovery on annual bluegrass in western Oregon, 2013-2014. Plant Disease Management Report. Report No. 8:T043. pg 1.

4. Mattox, C.M., A.R. Kowalewski, and B.W. McDonald. 2014. Evaluation of fungicide alternatives for the control of Microdochium patch on annual bluegrass in western Oregon, 2013-2014. Plant Disease Management Report. Report No. 8:T042. pg 1.

5. McDonald, B.W., and A. R. Kowalewski. 2014. Evaluation of fungicides for preventative control of gray snow mold in central Oregon, 2010 – 2011. Plant Disease Management Report. Report No. 8:T040. pg 1-2.

6. Mattox, C., A. Kowalewski and McDonald. 2014. Research Update: Effects of Alternatives to Traditional Fungicides and Winter Fertilization Practices on Microdochium Patch. Western Canada Turf Association (Online). Retrieved May 22, 2014. http://wcta-online.com/turfgrass-research/item/965-research-update-effects-of-alternatives-to-traditional-fungicides-and-winter-fertilization-practices-on-microdochium-patch

7. McDonald, B., A. Kowalewski and C. Mattox. 2014. Evaluation of Fungicide Rotation Programs for the Control of Anthracnose. BeaverTurf.com. Oregon State University. Retrieved March 21, 2014. http://horticulture.oregonstate.edu/content/2013-evaluation-fungicide-rotation-programs-control-anthracnose-and-effects-turf-quality-annual-blue

8. Kowalewski, A.R., B.M. Schwartz, A.L. Grimshaw J.N. McCrimmon and J.M. Layton. 2014. Mowing Requirements and Costs to Maintain Bermudagrass is Influenced by Cultivar Selection and Trinexapac-Ethyl Use. Applied Turfgrass Science. Accepted April 25, 2014.

9. Grimshaw, A.L., B.M. Schwartz, T.L. Grey, P.E. McCullough, P.L. Raymer, T.M. Webster, A.R. Kowalewski, T.M. Tate and W.A. Parrott. 2014. Acetyl-CoA Carboxylase Herbicide Tolerance in Bermudagrass. Agronomy Journal. 106(3): 1-6.

Extension Program:

Recent State Conferences: 2015 OGCSA Annual Meeting - May 20, 2015; 2015 OSTMA Membership Drive - March 3, 2015; 2014 OGCSA Annual Pest Management Seminar - December 3 and 4, 2015.

Other Recent Extension Activities: 2014-2015 School IPM Coordinator Training; 20 events from October 3, 2014 to June 11, 2015; Cumulative Attendance 268.

Websites and Social Networks:

http://horticulture.oregonstate.edu/group/beaverturf;
http://horticulture.oregonstate.edu/content/alec-kowalewski
http://community.beaverturf.com/
https://twitter.com/OSU_TurfClub

Sample of Recent Press Releases:

1. A Place Where Watching Grass Grow Is Anything But Boring. By Tom Banse. Northwest News Network/Oregon Public Broadcasting. Retrieved June 8, 2015. http://www.opb.org/news/article/npr-a-place-where-watching-grass-grow-is-anything-but-boring/

2. Grass-free backyard makeover (Show us your remodel). By Janet Eastman. The Oregonian/OregonLive. Retrieved May 28, 2015. http://www.oregonlive.com/hg/index.ssf/2015/05/grass-less_backyard_makeover_s.html

3. Lawn-Care Basics: How Much to Cut, Irrigate, Fertilize. By. Dean Fosdick. Associated Press. May 4, 2015. Circulation as of May 6, 2015. 95 million. Traditional News Distribution as of May 6, 2015…
   - ABC News, Lawn-Care Basics: How Much to Cut, Irrigate, Fertilize (UMV: 27,996,579)
   - Aurora Sentinel, Lawn-Care Basics: How Much to Cut, Irrigate, Fertilize (UMV: N/A)
   - Big News Network.com, Lawn-Care Basics: How to Cut, Irrigate, Fertilize (UMV: N/A)
   - Cute Daily.net, Lawn-Care Basics: How to Cut, Irrigate, Fertilize (UMV: N/A)
   - Madison.com, Lawn-Care Basics: How to Cut, Irrigate, Fertilize (UMV: 678,716)
   - Tulsa World.com, Lawn-Care Basics: How to Cut, Irrigate, Fertilize (UMV: 558,254)
   - Yahoo News, Lawn-Care Basics: How to Cut, Irrigate, Fertilize (UMV: 65,480,961)

4. Turfgrass specialist makes lawns, sports fields greener. By. Denise Ruttan. Capital Press. Retrieved March 14, 2015. http://www.capitalpress.com/SpecialSections/Seed/20150313/turfgrass-specialist-makes-lawns-sports-fields-greener

5. Lawn maintenance plan can be affordable. By. Kathleen Alaks. The Daily Astorian. Retrieved March 8, 2015. http://www.dailyastorian.com/lawn-maintenance-plan-can-be-affordable-da-ap-webfeeds-news-real-estate28ee078811a8431eaf9f26854a316d50

6. What is the best driveway grass? By. Alec Kowalewski. Oregon State University Extension Service. Retrieved January 8, 2015. http://extension.oregonstate.edu/question-of-the-week/what-best-driveway-grass

7. Parts of the Whole: Creating Urban Landscapes. By: Erin Martin. Oregon's Agricultural Process. Oregon State University Agricultural Experiment Station. Winter 2015. Retrieved January 20, 2015. http://oregonprogress.oregonstate.edu/winter-2015/creating-urban-landscapes

Brief comments on Extension:

Major Extension efforts include the development of the following programs…

- Schools IPM Landscaping Project – In collaboration with the OSU Integrated Plant Protection Center, this ongoing project includes the development and implementation of curriculum and workshops on IPM for School Turf and Landscape Management which was and is being offered to schools across the state of Oregon.
- OSU Turf Field Day - The curriculum currently includes a program update presentation, which I deliver during the opening remarks. As well as a take-home proceedings booklet, which includes the objectives, plot maps and findings from the featured projects (15 presented in 2014), as well as contact information for industry booth and equipment exhibitors. A field tour was also offered and included presentations by OSU faculty, staff and graduate students allowing the industry an opportunity to interact with the programs current members.

Industry booths and equipment exhibitors were a new component offered this year which we are hoping to grow in the future. This year, the field day, which is Sept 3, 2015, will include ODA pesticide applicator CEU credits, a golf outing and dinner at the Trysting Tree Golf Course.