

Modern Cool Season Sport Turf Management

Copenhagen 12-13 th July 2022

The International Turfgrass Society (ITS) brings together turf grass researchers from all over the world every four year to present and discuss their new results.

We have examined more than a hundred conference reports and chosen a few top scientists and some upcoming stars to bring highlights from their field of expertise directly to practical turf grass managers. This seminar will be the most important venue for golf course and stadium managers in 2022. The Conference Theme this year is Development and Sustainability and we have put up five main topics for this seminar:

- Low in input management
- Stress management
- New technological tool
- Turf grass ecosystem services
- Pesticide-free future

You are invited to join three parts of the ITRC-2022 program:

1. Seminar at University of Copenhagen with presentations and short discussions.
2. Dinner party at Furesø Golf Club where you will mingle with the seminar lecturers and colleagues from many countries. The menu is based on the concept: "Eat your golf course", showing some of the multifunctionality of Danish golf courses.
3. Bus excursions (Wednesday) to interesting sports turf facilities in the district, ending up at a barbeque party at DLF research facilities. Here you will meet all delegates at the scientific conference and get an impression of grass breeding and testing.

Here is a short presentation of the lecturers and their topics.



Stacy A. Bonos is a Professor of Turfgrass Breeding in the Department of Plant Biology at Rutgers University. Her research focuses on the development of improved, pest resistant, and stress

tolerant, turfgrasses including native grasses. She has dedicated much of her research to improving bentgrasses for golf courses. She has developed or co-developed over 240 cool season turfgrass cultivars and has been recognized for her research through several awards including Golf Magazine's '40 under 40', Early Career Excellence in Plant

Low Input Turfgrass Species for Sports Turf:

What are their quality attributes and challenges?

There is a need to identify turfgrass species and mixtures for golf course fairways and sports turf applications that can be managed sustainably by reducing fertility, mowing, irrigation and pesticides. Which species provide the best quality under low input? What other factors need to be considered for choosing the optimum turfgrass species for input sports turf? Can some mixtures between species provide better quality than monostands of single species?

<p>Breeding – Plant Breeding Coordinating Committee; Young Crop Scientist Award – Crop Science Society of America (CSSA) and Fellow of CSSA.</p>	
 <p>Michael Bekken is a PhD candidate advised by Dr. Doug Soldat in the department of Soil Science at the University of Wisconsin-Madison. His research focuses on quantifying golf course resource use (water, energy, fertilizer, and pesticide) and helping golf course superintendents benchmark and evaluate resource use efficiency.</p>	<p>Carbon balance on golf courses: Golf course maintenance emits carbon dioxide to the atmosphere, but carbon is also sequestered from the atmosphere by the plant-soil system. Ideally, emissions from golf course maintenance can be reduced so that golf courses sequester more carbon than they emit (i.e., are carbon negative). This seminar will share tips to reduce carbon emissions at your facility.</p>
 <p>Ross Braun, Ph.D. is a lead research scholar at Purdue University. Dr. Braun has worked at three golf courses in the United States and has a research background in turfgrass science focusing on fine fescues, zoysiagrass, buffalograss and other low-input turfgrass systems, greenhouse gas emissions, and drought and traffic stress.</p>	<p>Monitoring traffic during drought stress: How important is it to monitor traffic during drought stress? What are the impacts traffic during stress on turf canopies as well as soil and roots in the upper soil profile? In addition, are there differences among turf species and mowing heights in response to traffic during drought stress?</p>
 <p>Dr. Dale Bremer, Ph.D., Professor of Turfgrass Science, Kansas State University. Dale Bremer conducts research in water conservation, drought stress management, greenhouse gas emissions from turfgrass, and in the use of new technologies such as drones, remote sensing, and soil moisture sensors to improve turfgrass management practices. He advises and teaches graduate and undergraduate students in turfgrass science.</p>	<p>Strategies to keep turf alive when severe drought and water scarcity: With a focus on water conservation and drought stress, these questions will be considered: How can turfgrass managers balance water conservation with maintenance and survival of turfgrass during severe droughts and restrictions on turfgrass irrigation? Can new technologies such as drones, remote sensing, and soil moisture sensors be practically incorporated to enhance effectiveness, efficiency, and environmental stewardship of turfgrass management?</p>



Adam Thoms is an Assistant Professor of Commercial Turfgrass in the Department of Horticulture at Iowa State University. He focuses on applied research studies for athletic field managers and golf course superintendents as well as ways to lower turfgrass management inputs. He teaches two undergraduate classes and advises turfgrass students.

Hybrid turfgrass systems for football/soccer:
How can you get more use out of athletic fields in high wear areas? Does a hybrid (combination of synthetic and natural turfgrass) system perform like natural grass? What are the different types of hybrid systems that exist? A quick and practical presentation on hybrid turfgrass systems.



Etienne Abelard is an apprentice engineer. In other words, he is both a 5th year student in the engineering cycle by apprenticeship at the ESA (Higher School of Agriculture) in ANGERS and at the same time assistant-breeder, for 3 years now, within the company DLF Recherche in France, alongside Christophe Galbrun.

Light therapy. Update on lamps and their effects on different grass species.
The use of luminotherapy in major stadia around the world is becoming more and more common and is now considered a necessity in the production of high-quality turf playing surfaces.
We can then ask ourselves:
What types of lamps to use? HPS or LED?
Which species are most suitable under HPS lamps? Under LED lamps?



Atle Revheim Hansen is Golf Course Manager at Bærheim Golfpark in Norway. He has 38 years' experience as greenkeeper, Golf Course Manager, Designer and Constructor. Atle is passionate about innovation in the Norwegian golf industry.

Robotic mowers. Experiences from 5 years full scale testing:
Atle was the first Golf Course Manager to implement robot mower technology on a full-scale golf course. But even more: He is virtually maintaining a lot of the golf course through his smartphone. Atle will talk about the process and share some experience.



Dr. Terri Billeisen is an Extension Associate in the Department of Entomology and Plant Pathology at NC State University. Her current research focuses on insect pollinator population dynamics in turfgrass systems and evaluating options for biological control of red imported fire ants.

Strategies for Insect Pollinator Community Augmentation and Conservation in Managed Turfgrass:
Insect pollinator diversity and abundance in managed turfgrass systems are impacted by a number of environmental factors including landscape composition and complexity and pest management approaches. This presentation will specifically focus on the impact of wildflower establishment and pesticide input level on bee community dynamics.



Paige Boyle is a Presidential Doctoral Research Fellow at Utah State University. She earned a B.S. in Environmental, Soil, and Water Sciences and M.S. in horticulture from the University of Arkansas. Her research background includes stream restoration design, in-vessel compost processing, earthworm management on golf course turf, and clover lawns.

Earthworm castings:
In turfgrass systems, earthworm casts can cause issues with turf growth and management. Earthworm control is difficult because earthworms are still not well understood, and no pesticides are labeled for earthworm management. Turf managers usually rely on cultural practices to mitigate casting, with limited or varied efficacy. This presentation will walk you through earthworm biology, ecology, and various management options.



Emily Braithwaite is a faculty research assistant and graduate student at Oregon State University. She earned her B.S. in Plant Biology from Rutgers University. Her research background is management of turfgrass diseases, primarily Microdochium patch, yellow patch, and anthracnose. Her dissertation research focuses on plant pathogenic nematodes in the PNW.

Broadleaved weed control on golf course fairways without:
Restrictions on herbicide use on golf courses and athletic fields has increased over the last decade in the United States. In Europe, these restrictions have been in place for much longer, but challenges still arise in weed management on golf courses in the absence of herbicides. This presentation will present a review of alternative approaches to traditional broadleaf weed control.



Paul Koch, PhD, is an associate professor in the Department of Plant Pathology at the University of Wisconsin – Madison. Paul’s research focuses on developing precision disease management strategies for snow mold and dollar spot in turfgrass and investigating the fate and impact of turfgrass pesticides in the environment.

Alternative, non-chemical solutions for dollar spot control:
Dollar spot is one of the most common turfgrass diseases worldwide. Few fungicides are available for use on turfgrass in northern Europe and Scandinavia, and in this presentation, we will briefly talk about the latest research on non-fungicide alternatives for dollar spot control such as iron sulfate, poaic acid, and increased nitrogen fertility.



Wendell Hutchens is a PhD student at Virginia Tech University. His research is predominantly on the warm-season grass disease spring dead spot (*Ophiosphaerella* spp.), but he also studies non-fungicidal management techniques for cool-season grass diseases such as dollar spot (*Clarireedia*

Technology to fight dollar spot: a new way of disease management:
Dollar spot (*Clarireedia* spp.) is difficult to manage without fungicides. Furthermore, resistance to most of the traditional dollar spot fungicides has now been documented. This has led researchers and turfgrass professionals to explore new ways of managing and preventing the disease. Who would have thought drones, thermal cameras, GPS-guided sprayers, and wetting agents would be used for dollar spot management?

spp.) and brown patch (<i>Rhizoctonia</i> spp. and <i>Ceratobasidium cereale</i>).		
 <p>John E. Kaminski, Ph.D., is a Professor of Turfgrass Science at The Pennsylvania State University. John earned his B.S. in turfgrass science from The Pennsylvania State University and his M.S. and Ph.D. from the University of Maryland. Dr. Kaminski's research focuses on optimization of chemical and cultural management strategies for turfgrass diseases and weeds. John also serves as the Director of the Golf Course Turfgrass Management Program (2-Year Program) and runs Penn State's international turfgrass diagnostic lab at Penn State.</p>	<p>Controlling Clover and Dandelions with Iron: What is chelated iron and how does it affect weeds and turfgrass? Chelated iron may be used as an organic herbicide targeted toward broadleaved weeds such as dandelion and clover. Unlike many other organic or natural products, use of iron herbicides results in minimal injury to turfgrass. Iron is a promising weed control tool in areas with restricted pesticide use.</p>	
 <p>Jason Henderson is an Associate Professor of Turfgrass and Soil Sciences in the Department of Plant Science and Landscape Architecture at the University of Connecticut. Dr. Henderson earned his Ph.D. degree from Michigan State University in Crop and Soil Science specializing in the physical properties of turfgrass soils.</p>	<p>Let the Robot Pick the Weed: Management strategies when pesticides are not an option. Laws have removed conventional tools for managing pest populations in many areas of turfgrass management. Attendees will appreciate an unconventional perspective while realizing the themes of pesticide-free management; fundamentals are imperative, intensity of management will increase, and windows of opportunity will decrease. A new device for turfgrass management will be introduced for selective, mechanical weed control while mowing.</p>	

Seminar costs

Seminar fee: € 190 included bus transfer and dinner at Furesø Golf Club

Seminar only: € 150

Webinar link to the seminar: € 100

Additional: Technical Tour on Wednesday: € 60

Registration

Adapted to the Conference system.