

# International Turfgrass

The Newsletter of the International Turfgrass Society

May 2016 Edition

## Submission of Papers to ITSRJ, Crop Science and Agronomy Journal

by Dr. James Murphy, Editor-in-Chief  
Rutgers University, USA

Manuscripts of papers for the 13th International Turfgrass Research Conference (ITRC) in New Brunswick, New Jersey, USA (16-21 July 2017) are now being submitted. The final deadline for submitting manuscripts is 1 June 2016.

### Standards for Journals

When submitting a paper to the ITRC, all authors were asked to select a preference for submitting papers to Crop Science, Agronomy Journal, or International Turfgrass Society Research Journal (ITSRJ). Authors should note that the standards for Crop Science and the Agronomy Journal are more rigorous than the ITSRJ but also realize that both Crop Science and the Agronomy Journal have an impact factor whereas the ITSRJ does not. If you need more information on standards for each journal please review

*ITSRJ* (<http://www.turfsociety.com/2015/20151020Standards-for-Publishing-ITSRJ.pdf>)

*Crop Science* (<https://dl.sciencesocieties.org/files/publications/cs/cs-instructions-to-authors.pdf>)

*Agronomy Journal* (<https://dl.sciencesocieties.org/publications/aj/instructions-to-authors>)

### Submitting Manuscripts

Manuscripts are submitted and reviewed through the online system known as Manuscript Central. There are two URLs to use for submitting manuscripts.

1. Manuscripts for ITSRJ and Crop Science should be submitted at <https://mc.manuscriptcentral.com/crop>.

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Please remember that at least one author of each paper presented at the 13<sup>th</sup> ITRC must be a member of the International Turfgrass Society. An author cannot be the sole member on more than one paper submission.

If you don't know if you are a member, then go to <http://turfsociety.com/test/ismember.php> and type in your email address that you used when first registering for ITS, and you will receive an instant response if you are in good standing.

Also, if you have any newsworthy stories or information for readers of International Turfgrass, I hope you will consider submitting an article for the next newsletter in September 2016.

I hope you enjoy the very good articles in this edition.

Sincerely,  
Nathan R. Walker

### In this Edition

- Submission of Papers to ITSRJ, Crop Science and Agronomy Journal
- International Turfgrass Research Conference
- Zoysiagrass Symposium during ITRC in 2017
- News from Japan
- Red fescue management/Practical guide for assessing the multifunctional potential of golf courses
- In Memorial of Arden Albert Baltensperger
- Golf Course Industry Show and Greenkeeper-Conference in South Korea
- 2017 Graduate Student Competition
- ITS Membership Application
- Order form for past proceedings and journals
- ITS Board Members

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After login, the corresponding author begins the submission process at ‘Click here to submit a new manuscript’.

- a. Authors submitting to ITSRJ should select option ‘10. Int. Turfgrass Society Research Journal’ for the ‘Type’ of manuscript.
- b. Authors submitting to Crop Science should select option ‘11. Int. Turfgrass Society Conference Special Section in Crop Science’ for the ‘Type’ of manuscript

2. For ITRC papers to be considered for a special section in Agronomy Journal, submit manuscripts at <https://mc.manuscriptcentral.com/agron>. Authors should select the option ‘International Turfgrass Society Conference’ (9th option in the list) for the ‘Type’ of manuscript.

First time users of Manuscript Central should click on the hypertext ‘Register here’ located under the ‘New User?’ window to the right of the Log In window to setup your contact information (e-mail, name, address, user ID and password). Once registered, you can login and submit manuscripts.

### Page Charges

Page charges to authors will be as low as \$0 for articles that do not exceed the page length for the specific journal. Charges to authors will only occur for articles greater than 5 pages in the ITSRJ and 7 pages for Crop Science and Agronomy Journal. Details on page charges for paper exceeding these lengths are listed below.

Publication	Page Length with No Charge to Author	Page Charges to Author
ITSRJ	\$0 for 5 pages	\$100/page for Pages 6+
<i>Crop Science</i>	\$0 for 7 pages	\$50/page for pages 8+ for CSSA member and nonmember
<i>Agronomy Journal</i>	\$0 for 7 pages	\$100/page for pages 8+ for ASA member and \$200/page for pages 8+ for nonmember

### Short Communications for 2017 ITRC

The ITS Board agreed to allow members the opportunity to publish ‘late breaking developments’ in their research program as short communications at the ITRC and in ITSRJ. Short communications represents a category of papers that describe unique experimental techniques and apparatus, recent observations of unique phenomena, or other trial information. It also provides authors the opportunity to submit papers addressing unique work that is in progress, exploratory, or hypothesis-testing. These articles typically will be shorter than research papers; for example, not more than four printed pages. [Click here for details on ITSRJ journal standards.](#) Additionally, Crop Science publishes short communications and Agronomy Journal publishes notes. Please review the respective journal standards (see previous URLs) for more information.

Thus, to get ‘late breaking’ presentations into the 2017 ITRC scientific program the Confex web site has been re-opened to allow title-summary submissions of short communications at the 2017 ITRC. [Click here to access the Confex system](#) and submit a title-summary for a short communications (note that you will only be able to select ‘short communications’ for submitting title-summaries at this time). You will be setup for late access to Confex in the case that you need to make changes to the submission in the coming months. Please note that the manuscripts for short communications must be submitted by October 1<sup>st</sup> through the Manuscript Central web site (<https://mc.manuscriptcentral.com/crop>). Reminders on this deadline will be sent out and posted on the [2017 ITRC web site](#).

Additionally, we anticipate that some authors who have already submitted a title-summary for a full research paper (to be published in Agronomy Journal, Crop Science or ITSRJ) may have decided that they now prefer to publish a short communications of that work. Please contact [Bingru Huang](#) if you are interested in changing your manuscript type to a short communication.

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## Updated Review and Publishing Timeline

	Paper Type	
Time line	Research, Review, Issue and Case Study	Short Communications and Notes
<b>2016</b>		
1 June	Final date for manuscript submission	
1 Aug	Manuscript reviews due back to authors	
1 Oct.	Revised manuscript (if necessary) due	Final due date for Short Communication manuscript submission
1 Dec.	Revised manuscript reviews due back to authors	Short communication reviews due back to authors
<b>2017</b>		
1 Feb.	Final manuscript versions due	Final version due
1 July	ITRC registration confirmed before papers published	ITRC registration confirmed before papers Published
16 July	Published on USB drive and handed out to delegates on 16 July <sup>t</sup>	Papers Published

<sup>t</sup>All papers published in the ITRC, Crop Science and Agronomy Journal will also be included on an electronic (flash drive) proceedings provided to delegates at the conference. The electronic proceedings will also be available through members-only section of the ITS website.

### Frequently Asked Questions

**Question 1:** Will authors have the opportunity to publish any paper not accepted by Crop Science or Agronomy Journal in the International Turfgrass Society Research Journal?

Answer: Yes, authors may choose to have any paper that is not accepted by Crop Science or Agronomy Journal to be considered for publication in the International Turfgrass Society Research Journal?

Note: More details on the review and publishing process will be provided as we move further along with manuscript submissions and reviews. Authors are strongly encouraged to review the guidelines of each journal before deciding which journal to submit their papers (see the URLs below).

**Question 2:** Assuming acceptance by Crop Science or Agronomy Journal, will the papers be published in 2016 or withheld until 2017?

Answer: If/when the papers are accepted, they will be copyedited/typeset and made available on the journal's Just Published page (ex. [dl.sciencesocieties.org/publications/cs/justpublished](http://dl.sciencesocieties.org/publications/cs/justpublished)). These accepted papers on the Just Published page will be assigned a DOI name (digital object identifier), thus allowing these to be cited in curriculum vitae and similar documents.

Note: The current plans are to have the entire group of ITRC papers finish the review/processing process and then assign these to an issue of the journals in 2017. The DOI name for an accepted paper will remain the same even after it is assigned to a specific journal issue.

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**Question 3:** Are supplemental data submissions possible for papers published from the 2017 ITRC? For example, studies that have mined sequencing data of a grass species would like to report a large number of genetic/molecular markers as genomic resource for breeders/geneticists in a detailed (large) supplementary file or table.

Answer: Yes, journals of ACSESS Digital Library (publisher of *Crop Science*, *Agronomy Journal* and *ITSRJ*) will accept supplemental material that will enhance and support your research. Supplemental files will appear online and will be accessible from the issue table of contents and article-level pages. Authors are encouraged to submit materials that contribute to the content and quality of the article, or to use supplemental material as a means to shorten the text of manuscripts. For more details see SUPPLEMENTAL MATERIAL (page 1-10) at <https://dl.sciencesocieties.org/files/publications/style/chapter-01.pdf>

The above and additional information on submitting manuscripts is posted under the ‘paper submission’ tab at the [ITRC2017 website](#). You may also contact [Jim Murphy](#) for questions on submitting manuscripts to *ITSRJ*, *Crop Science* or *Agronomy Journal*.

## The 2017 International Turfgrass Research Conference will be Packed with Educational and Social Activities

by Dr. Bruce Clarke, ITS President  
Director, Center for Turfgrass Science,  
Rutgers University, New Brunswick, NJ USA

Plans are progressing rapidly for the 13<sup>th</sup> International Turfgrass Research Conference (ITRC; <http://www.turfsociety.com/itrc2017/?p=home>), one of the most anticipated events in 2017! This is one conference that you will not want to miss.

The ITRC will be held at the Hyatt Regency Hotel located in New Brunswick, NJ USA from 16-21 July, 2017; the first time the conference has been held in the US since 1993. The Hyatt is a state-of-the-art hotel and conference center that is in close proximity to three international airports and a short train ride to the heart of New York City.



### ITRC 2017 Highlights

The Conference will kick off with a grand reception on Sunday night featuring a Dixieland band that the entire family will enjoy. This will be followed by a week packed with educational and social opportunities (<http://www.turfsociety.com/itrc2017/pdf/Preliminary-Meeting-Schedule.pdf>) that will allow you to reengage with old friends and network with new acquaintances from all over the world.

Some of the highlights of the 2017 ITRC will include keynote addresses from internationally renowned scientists, a graduate student oral and poster competition that will showcase some of the future stars in our discipline, and an evening reception to recognize Dr. Jim Watson - one of the pioneers in the turfgrass industry. A full day of technical tours is planned for Wednesday that will highlight the extraordinary range of turf venues in the NJ/NY city region and will conclude with an American-style BBQ at the Rutgers Turf Research Farm at Hort Farm 2. Thursday night will feature a Twilight Dinner Cruise of the NY/NJ Harbor and Statue of Liberty with awesome views of the NY City skyline that your entire family will want to see.

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A full day of technical tours is planned for Wednesday including a stop at the USGA

The last day of the conference will include a Zoysiagrass Symposium Friday morning (<http://www.turfsociety.com/itrc2017/pdf/Symposium.pdf>) showcasing invited speakers who will give a world-wide perspective on this important and underutilized turfgrass species. The Conference will conclude with an optional afternoon tour of the world-famous Rutgers Breeding Program's Adelphia Research Farm.



Another technical tour stop is Bayonne Golf Club

### **Bring the Family**

Accompanying persons will have a full range of enjoyable activities to choose from during the week (<http://www.turfsociety.com/itrc2017/pdf/Accompanying-Persons-Tours.pdf>) such as Broadway matinees, New York City bus tours, trips to museums and planetariums, shopping at local outlet malls, local zoos and aquaria, and even a day trip to beautiful white sand beaches of the state.

So, join us for one of the largest and most comprehensive gatherings of turfgrass professionals anywhere in the world. Learn about the latest discoveries in turfgrass science and get inspired by the scientific sessions, field tours, and stimulating discussions. Share your research with colleagues from throughout the world, meet friends, network, and see all that the New York City/New Jersey area has to offer.

### **Online Conference and Hotel Registration Opens 1 October 2016**

Conference and Hotel Registration (<http://www.turfsociety.com/itrc2017/?p=reg>) opens 1 October 2016. So, mark your calendars now to join the more than 500 participants from 26 countries who are anticipated to attend the 13th ITRC in New Brunswick, New Jersey, USA from 16 to 21, July 2017.

### **Become a 2017 ITRC Sponsor**

More than a dozen organizations including Syngenta, Bayer, Aquatrols, the USGA and the New Jersey Turfgrass Association/Foundation (<http://www.turfsociety.com/itrc2017/?p=reg%20-%20sponsors#sponsors>) have already pledged their support for the 2017 ITRC and plenty of excellent sponsorship opportunities are still available (<http://www.turfsociety.com/itrc2017/pdf/ITRC-Sponsorship.pdf>). So show your organization's support of turfgrass research and become a 2017 ITRC Sponsor today!



# Zoysiagrass Symposium Scheduled for Friday of International Turf Research Conference in 2017

by Jack Fry, Ph.D.,  
Kansas State University  
Manhattan, KS, USA

## Short communications still being accepted for the accompanying poster session

There is worldwide interest in zoysiagrass (*Zoysia* spp.). In 2015, an International Zoysiagrass Symposium was held in Okinawa, Japan with speakers from Japan, Korea, China, and Australia. Interest arising from this gathering led to an informal meeting of those involved with zoysiagrass research and management at the Golf Industry Show in San Diego in 2016 at which individuals from eleven countries attended.

We will continue building on this interest by holding a half-day zoysiagrass symposium on the morning of Friday, July 21, 2017 at the International Turf Research Conference (ITRC) in New Brunswick, NJ USA. Invited speakers will provide a worldwide view of zoysiagrass research, use, and culture. In addition, a panel including industry professionals will offer their perspective on zoysiagrass management. Before and after the symposium, and during a one-hour break, attendees will have an opportunity to view posters and interact with others conducting research on *Zoysia* spp. Those presenting research on zoysiagrass at the ITRC in an oral session earlier in the week have the additional option to create a poster for viewing during the symposium, and those presenting a poster earlier in the week can show their poster again during the symposium (there is no need for these authors to submit an additional title summary).

Additionally, if others have interest in presenting a poster for the symposium they should consider submitting a short communication (due September 1, 2016) through the Manuscript Central web site (<https://mc.manuscriptcentral.com/crop>) for publication in the ITRJ, Crop Science, or the Agronomy Journal. If you have questions, contact Jack Fry (USA) at Kansas State University: [jfry@ksu.edu](mailto:jfry@ksu.edu); 785-532-1430.

Tentative titles and presenters:

Implications of *Zoysia* Species, Distribution and Adaptation for Management and Use of Zoysiagrasses  
Don Loch, The University of Queensland, Brisbane, Queensland Australia

Evaluation and Breeding Zoysiagrass using Japan's Natural Genetic Resources  
Masumi Ebina, Forage Crop Genome Unit, Institute of Livestock and Grassland Science, Tochigi, Japan

Zoysiagrass Use and Culture in Europe  
Marco Volterrani and Simone Magni, University of Pisa, Pisa, Italy

Occurrence, Distribution and Introduction of *Zoysia* spp. and their Management and Current Use in Australia  
Peter McMaugh, Turfgrass Scientific Services, Carlingford, New South Wales Australia

Zoysiagrass (*Zoysia* spp.) History, Utilization, and Improvement in the United States: A Review  
Aaron Patton, Purdue University, West Lafayette, Indiana USA

Molecular Advances in Zoysiagrass  
Ambika Chandra, Texas A&M AgriLife Research, Dallas Texas USA

Panel Discussion – several industry professionals

# News from Japan

by Hideaki Tonogi  
Head, International relations committee  
Japanese Society of Turfgrass Science

## News tip No.1

### Successful genome sequencing of Zoysiagrass, for the very first time

This means there is a greater possibility for zoysiagrass development with high potential and can be done faster.

It was announced that the joint group Miyazaki University and Kazusa DNA research institute sequenced the genome of zoysiagrass for the first time on the 15<sup>th</sup> of March, 2016. They sequenced the whole genomes of three species of zoysiagrass including *Zoysia japonica*, *Z. matrella* and *Z. pacifica*, and this will allow for much higher development with high potential zoysiagrass as a result of this effort. This effort was supported by Tohoku University, Toyota Company, and Fuji Chemical Company. Dr. Tanaka who works at Miyazaki University presented part of these results at the 2015 International Zoysiagrass Symposium as a speech contest.

Please see further information as follows:

<http://dnaresearch.oxfordjournals.org/content/early/2016/03/11/dnares.dsw006.abstract>



Overview of Manzamo, Okinawa.



Survival of zoysiagrass at Manzamo.

## News tip No.2

### 2016 Japanese Society of Turfgrass Science Annual Meeting 27-29 May, 2016 at Chiba University

The 2016 Japanese Society of Turfgrass Science Annual meeting will be held from 27 to 29 May, 2016 at Chiba University, Chiba, Japan. There will be a bus tour starting from Chiba University visiting research therapy project using plants, Kashiwa Soccer complex and Izumi Country Club for half-day tour on the 27<sup>th</sup>. Also, we will have a Golf tour at Takanodai country club which held the Japan Open tournament previously. In 28<sup>th</sup>, we will have a group meeting including people from golf, school yards, parks and ground cover plants industries. We will have intensive discussions on applying bio-stimulant products on putting green and fairway, so many of superintendents will introduce their efforts, specially. After the group meeting, we will have a Symposium which the title is "Meeting Together on Turfgrass". We have asked a novelist who writes about soccer and turfgrasses to be the special speaker. We will have exciting discussions on why many people meet together on turfgrasses based on observations by the novelist. We will have both oral and poster presentation on the 29<sup>th</sup> and a committee meeting will be held that will include discussions on international relations.

Please contact: [jsts@jcom.home.ne.jp](mailto:jsts@jcom.home.ne.jp)

# Red fescue management Guidelines based on new research results and greenkeepers' experiences

by Maria Strandberg  
STERF, Sweden

Red fescue is a widespread native grass species in the temperate zone that probably dominated the first links courses on the British Isles where it resisted summer drought, play and very low inputs of fertiliser and water. In these times of promotion of sustainability and reduction of resource use, traditionalists use this as an argument for reintroducing red fescue.

Increasing interest for more sustainable golf course management and also advocacy from golfers who want to play “the running game” are a part of the argument, but even stronger support has recently come from EU and national authorities who prohibit chemical pesticides and restrict the amount of water and nutrients that can be applied on golf courses.

Red fescue has proved to be a good alternative under these limitations, but it is not the only answer to the aforementioned challenges. Bent grasses (*Agrostis* sp.) can be managed with low input of fertiliser and water, and specific varieties have shown good resistance to disease. Traditionally red fescue has been seeded in a mixture with browntop bent (*Agrostis capillaris*). Annual meadow-grass (*Poa annua*) is probably the only grass species that cannot successfully be grown on golf greens without access to chemicals.

STERF's new handbook, Red fescue management is based on results from the research project “FESCUE-GREEN: Best management of red fescue (*Festuca rubra*) golf greens for high sustainability and playability”. The project started in 2011 and was concluded in 2015. The aim of the handbook is to present ready-to-use results and practical experiences that can contribute to more sustainable golf course management without compromising the quality of surfaces produced for the sport of golf.

The handbook and information about and reports from the research project can be found on the [www.sterf.org](http://www.sterf.org)





# A practical guide for assessing the multifunctional potential of golf courses

by Maria Strandberg  
STERF, Sweden

We hope that this handbook will inspire golf facilities to take initiatives, work proactively and thus demonstrate the societal benefits of golf. The handbook is intended as a tool to visualize the multifunctional potential of golf facilities and to start the process of developing multifunctional values.

Golf courses are currently an underused multifunctional resource. If golf courses can be used in a more multifunctional way, a range of important services required by society can be supplied. In addition to offering a high quality arena for golf, courses can, for example, also contribute to improving biological diversity, conserving natural and cultural environments, and providing areas for recreation and outdoor life that are open to everyone. Many golf courses are currently experiencing financial problems and are trying to find new ways to maintain and expand their operations. Multifunctionality can provide an opportunity for alternative income, better anchoring within the community through work on environmental conservation and sustainable development, better collaboration and, in many cases, shared costs with authorities, environmental and leisure organisations and other sports clubs and societies. This, in turn, can lead to better public opinion and greater political support.

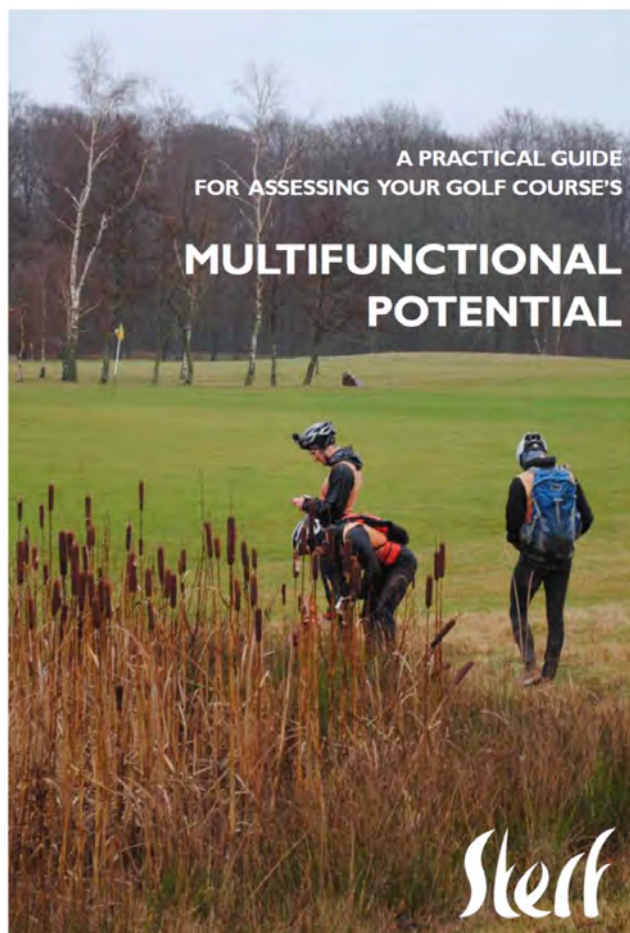
This handbook presents a systematic process to create a multifunctional approach, and a tool for identifying multifunctional values and assessing possible benefits of multifunctionality at golf courses. There are three main steps that have to be considered in this process:

1. Discussion of the goals of developing a multifunctional approach, e.g., to attract new club members, to improve our relation to the local community, etc.
2. Description of the potential of the course by using the mapping tool.
3. Discussion with club members to identify what they want.

The handbook is based on a STERF research project – *Experience mapping and multifunctional golf course development - enhanced possibilities for increased and more varied use of golf courses.*

The goal of the four-year project was to describe the development of a method for mapping and description of recreational experiences on golf courses. The objective was to provide a planning tool that can facilitate development of a broader multifunctional use of the golf course landscape.

The handbook can be found on: [www.sterf.org](http://www.sterf.org)



# In Memorial of Arden Albert Baltensperger

by Bernd Leinauer, Roch Gaussoin, Cathey Manning, and Rebecca Baltensperger



Arden Albert Baltensperger, Professor Emeritus of New Mexico State University (NMSU) and a native of Western Nebraska died Tuesday October 6, 2015. He is survived by his daughter Cathey Manning, sons Bruce, Paul, and Carl, plus 13 grandchildren and eight great grandchildren.

Arden was born 25 Dec 1922 in Kimball, NE to Fred J. and Louise Manz (a native of Switzerland). He attended grade school in a (often joked about) one room school house – Dist. 22. He Attended high school in Kimball, NE, received a B.S. and M.S. degree from the University of Nebraska in 1947 and 1949, respectively and his Ph. D. from Iowa State University in 1958. The extended formal education was partially because he said he was a slow learner, but also because of his military service (1943-1946; officer in the Field Artillery in the Pacific Theater) and farming (1949-1953; managed a stock farm near Denton, TX for his father in law (Paul Schlosser) and conducted soil fertility research at the Texas A&M Denton Branch Station).

Much of Arden's life was devoted to teaching and plant breeding. He taught and conducted sorghum and bermudagrass research at the University of Arizona. In 1963 he accepted the Agronomy Department Head Position at NMSU, which he held for 12 years. In 1975 he took a faculty position as

professor of Agronomy until his retirement in 1988. From 1988 until 2010 he served as Research Director and later as consultant for the Pennington/Seeds West Co. in Yuma, AZ.

Arden was active in many agronomy and turfgrass organizations, such as the American Society of Agronomy (for which he served as president in 1990), The Crop Science Society of America, the International Turfgrass Society, and the Southwest Turfgrass Association. He was also active on many NMSU committees, including the honorary Agriculture Fraternity 'Gamma Sigma Delta' (for which he served as president in 1979), Kiwanis and Vos Vaqueros, and in the Presbyterian Church (as Elder and teacher).

Dr. Baltensperger's academic achievement has been recognized worldwide through his breeding of turf-type and forage bermudagrasses, which began in 1978 at NMSU. His efforts led to the release of NewMex Sahara, the first improved seed propagated turf type bermudagrass. Over the course of the next 15 years, 6 additional seeded varieties, including 'Princess 77' were released. Royalties returned from the sale of NuMex Sahara returned more money back to the New Mexico State University than all other breeding programs combined. His bermudagrasses are grown for recreation and to feed livestock in Africa, Asia, Australia, Hawaii and in 21 US states. At many of the overseas locations, soil conditions, water quality, and water availability would have prevented the use of improved grasses if Dr. Baltensperger's seeded bermudagrasses had not been available. More recently, Princess 77 was used as the foundation of the playing surface used in the NFL's Super Bowl in 2004 and 2005. Arden's last article on seeded bermudagrasses 'A century of seeded bermudagrass production — and more to come' was published in November 2014, when he was 91.

Arden was a mentor to many and was a gentleman in the truest sense of the word. Slow to anger and quick to compliment, he leaves a professional legacy of successful students and plant improvement. If desired, contributions may be made to the Arden and Elsie Endowed Scholarship at New Mexico State University, P.O. Box 3590, Las Cruces, NM 88003.

# Golf Course Industry Show and Greenkeeper- Conference in South Korea

by Fritz Lord  
COMPO Expert GmbH, Germany

The Korean Golf Course Industry Show (KGCIS) took place from 20.01. – 22.01.2016 in Daegu, South Korea (Photo 1). This technical exhibition covers all issues of golf course maintenance like fertilization, irrigation, biostimulants and machinery presented by 72 exhibitors, mainly from Asia. More than 1,500 Greenkeepers and visitors joined this event. There is also a special education program during the KGCIS organized by the Golf Course Superintendents Association of Korea (GCSAK). The concept of an integrated education program is of course much smaller but similarly to the GCSAA or the BIGGA seminar programs with different topics and credit points for visited seminars. At the end the Korean Greenkeeper can use these certificates for their qualification.



Photo 1: Entrance to KGCIS in the EXCO Conference Center in Daegu.

At invitation of the GCSAK Dr. Fritz Lord (ITS officer, Germany) gave a seminar regarding the input of nutrients and biostimulants to turf vitality and stress physiology (Photo 2). With nearly 250 participating Greenkeepers this seminar was fully



Photo 2: Key Speaker Dr. Fritz Lord with GCSAK President Kim Kunwoo.

booked. Stress maintenance is an important issue in Korean greenkeeping due to the intensive wear on the greens and fairways during the whole year (Photo 3). Many courses have = 40.000 flights a year. To handle this high traffic some golf courses a using huge double greens (500-800 m<sup>2</sup> each). The climate is an extreme one; very cold winter and high temperatures in the summer. On the greens you find Bentgrass and *Poa annua*, on the fairways the warm season grass *Zoysia japonica* which enters dormancy during winter (Photo 4).



Photo 3: Turf Vitality Seminar Dr. Fritz Lord, COMPO EXPERT.

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Photo 4: Double Bentgrass Greens in a dormant Fairway in January.

An adapted and differentiated Greenkeeping concept that takes into consideration the impact of abiotic stress factors is of the utmost importance. Fertilization is focused on nitrogen for regeneration growth but also on potassium, magnesium, trace elements and frequent applications of silicon to enhance the stress tolerance of the turf.

Of course there are also biotic stress factors like fungal diseases e.g. Leaf Spot, Dollar Spot and Pythium. Samples were taken from greens in the South East of Korea end of January and analyzed by DNA Micro Array Tube method (RASOS).

The samples were positive for presence of *Microdochium bolleyi* and *Ascochyta phleina*, diseases which are also correlated to abiotic stress (weak plants). The results are shown in Table 1.

Table.1 Signal Intensities by RASOS DNA Diagnosis; Samples taken from Greens with symptoms (Lord; 22.01.2016)

Sample	Test positive <sup>1</sup>	Signal intensity
Green	<i>Microdochium bolleyi</i>	0,723
	<i>Ascochyta phleina</i>	0,672
	Verticillium d.	0,202

<sup>1</sup>Signal intensities > 0,05

South Korea is an enthusiastic Golf nation with more than four million active players. That are approximately 10% of total inhabitants. In 1965 the Korean Professional Golf Association (KPGA) was founded and became a member of the International Golf Federation (IGF) in 1968. Today South Korean Golf Resorts like Anyang Country Club, Nine Bridges Golf Course, or the Jack.

The next Korean Golf Course Industry Show will take place in January 2018 in Seoul.

## Re-announcing the Graduate Student Competition at the 2017

### ITRC

Paul Koch<sup>1</sup> (chair), Erik Ervin<sup>2</sup>, and Kelly Kopp<sup>3</sup>  
ITRC Graduate Student Competition Committee

<sup>1</sup>University of Wisconsin, Madison, WI

<sup>2</sup>Virginia Tech, Blacksburg, VA

<sup>3</sup>Utah State University, Logan, UT

The ITRC will host a graduate student competition for both oral and poster presentations. Students can submit manuscripts for consideration as an oral or poster presentation under any of the following categories: 1) Pest management strategies, 2) Turfgrass physiology and soil health, 3) Genetics and breeding, and 4) Environmental aspects of turfgrass management. Contestants will be judged on the innovativeness of their research goals, the

robustness of their scientific methods, and the delivery of their oral presentation or appearance of their poster. Modest cash prizes and a complimentary ITS membership will be made available to the top three contestants in each category. Only one submission per student is allowed, and contestants must be enrolled as an active graduate student at the time of the meeting to be eligible for the competition.

## Announcing a faculty position in Sustainable Turfgrass

### Management at Hochschule Osnabrück

Click [here](#) for more information

INTERNATIONAL TURFGRASS SOCIETY  
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PLEASE CHECK MEMBERSHIP TYPE DESIRED:

Regular Membership Fee (2014-2017)	\$325.00 USD
Sustaining Membership Fee (2014-2017)	\$1000.00 USD
Student Membership Fee (2014-2017)	\$150.00 USD*

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\* Student member must have confirmation letter from major faculty advisor.

\*\* To avoid heavy collection fees, only checks from U.S. affiliated banks will be accepted.

Please make check payable to: *International Turfgrass Society*.

MAIL OR E-MAIL THIS COMPLETED FORM, ALONG WITH 1) YOUR CHECK OR 2) YOUR PAYPAL INFORMATION OR 3) THE WIRE TRANSFER INFORMATION TO:

Dr. John Cisar  
Treasurer, International Turfgrass Society  
10400 NW 23rd St.  
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Dept of Plant Biology and  
Pathology  
Foran Hall/Cook Campus  
59 Dudley Road  
New Brunswick, NJ 08901  
USA  
PH: +1 848 932 6295  
[clarke@aesop.rutgers.edu](mailto:clarke@aesop.rutgers.edu)

#### Vice-President

Don Loch  
University of Queensland  
St. Lucia  
Queensland 4072  
Australia  
PH: +61 7 3824 5440  
MOB: +61 407 679 340  
[d.lochl@uq.edu.au](mailto:d.lochl@uq.edu.au)

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Maria Strandberg  
STERF (Scandinavian Turfgrass &  
Environment Research Foundation)  
Box 84, SE-182 11 Danderyd  
Sweden  
PH: +46 (8) 622 15 27  
MOB: + 46 70 620 17 87  
[maria.strandberg@golf.se](mailto:maria.strandberg@golf.se)

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John Cisar  
11400 NW 23rd St.  
Plantation, FL 33323-2027  
USA  
PH: +1 954 257 5500  
[cisarturfdoc@gmail.com](mailto:cisarturfdoc@gmail.com)

#### Secretary

Mike Fidanza  
Pennsylvania State University  
Berks Campus  
111 Luerssen Building  
Reading, PA 19610  
USA  
PH: +1 610 396 6330  
[fidanza@psu.edu](mailto:fidanza@psu.edu)

#### Historian

Richard Gibbs  
STRI  
St Ives Estate  
Bingley BD16 1AU  
UK  
PH: +44 (0)1274 565131  
MOB: +44 (0) 7880 738881  
FAX: +44 (0) 1274 561891  
[richard.gibbs@stri.co.uk](mailto:richard.gibbs@stri.co.uk)

#### Past President

Liebao Han  
Institute of Turfgrass Science  
Beijing Forestry University  
No.35 Qinghua East Road  
Beijing, 100083  
China  
PH: +86 (10) 6233 7982  
[hanliebao@163.com](mailto:hanliebao@163.com)



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Nathan R. Walker  
Department of Entomology and Plant Pathology  
Oklahoma State University  
Stillwater, OK 74078  
Tel. +1 405 744 6830  
E-mail: [nathan.walker@okstate.edu](mailto:nathan.walker@okstate.edu)

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