



EUROPEAN TURFGRASS SOCIETY

NEWSLETTER 01/2015

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ETS Field Days: Sustainability and Grass

Denmark, 7-8th October 2015.
Visit <http://ign.ku.dk/grass>

Organized and hosted by the University of Copenhagen - Department of Geosciences and Natural Resource Management. Co-organized by the Scandinavian Turfgrass and Research Foundation – STERF.

Day 1. Seminar day – October 7

A seminar day at the University of Copenhagen, campus Nødebo. Different presentations and a panel discussion related to sustainability and turfgrass. The program is in progress.

Day 2. Excursions – October 8

Excursion to Frederiksborg castle garden (discussion of maintenance descriptions of turf types) and to Furesø golf course, the first course that received the Danish Golf Unions Environmental price in 2013.

Registration

Registration will be available as of January 2015.

Accommodation

Accommodation will be in Helsingør at Hotel Marienlyst - booking for the Conference will be available soon.



Department of Geosciences
and Natural Resource Management



Looking forward to seeing you in Denmark!

4th ETS Conference 2014 Osnabrueck, Germany

by Claudia de Bertoldi, ETS Communications Manager

Every two years, ETS runs its scientific turfgrass conference in one of its member countries, to promote the exchange of information among turfgrass specialists from universities, official bodies and private companies. Following Italy, France and Norway, Germany has been chosen to host the event in 2014. The University of Applied Sciences organized and hosted the 4th ETS Conference 2014 in Osnabrueck from 6th – 9th July 2014.



The Organising Committee with Prof. Martin Thieme-Hack as convener superbly prepared this international congress in collaboration with the German Turf Society (Deutsche Rasengesellschaft).

The conference keynote theme was: "Balancing turfgrass performance and sustainability" and, as in past years, the focus of the congress lied on discussion of the latest research results in the area of turfgrass in its most diverse manifestations from institutions in Europe and overseas, especially in North America.

Works opened on the morning of 7th July with a welcome from the Organizing Committee, followed by invited speaker talks by Ursula Eid (Osnabrueck University), Rüdiger Prasse (Leibniz University Hanover) and Martin Thieme-Hack (Osnabrueck University). After a coffee break followed the session on "Turfgrass Species and Breeding" chaired by Scott McElroy of Auburn University, while lunch preceded the session on "Soil and Water Management" (Chairman Bernd Leinauer of NMSU).

The ETS General Assembly was chaired by Prof. Charles Peacock (NCSU) and saw the presentation of 2013-2014 activities and balance by ETS President Panayiotis Nektarios (Athens Agricultural University) and newly-appointed ETS Secretary Filippo Lulli (Turf Europe).

The first day was closed by a welcome outdoor visit in the German summer to the turfgrass field trials setup expressly for the ETSC at Osnabrueck University, followed by a exquisitely organized outdoor barbecue.

The following day saw intense Conference activities carry the participants through sessions on "Turfgrass Diseases, Pests and Weed Control" (Chair Marco Volterrani, Pisa University), "Turfgrass for Golf and Sports Fields" (Chair Filippo Lulli, Turf Europe), "Turfgrass growing factors, Impact for the Environment" (Chair Wolfgang Praemassing, Deula Rheinland) and "Turfgrass Nutrition and Physiology" (Chair Trygve Aamlid, Bioforsk).

The day closed with an eventful dinner and evening at Steigenberger Hotel Remarque, where guests were treated to a great dinner accompanied by an enjoyable show staged by the Drama students of Osnabrueck University, not to mention witnessing a memorable football exploit by the German national side soundly beating the home team of Brazil at the FIFA World Cup semi-final. Needless to say chilled German beer flowed and streets were alive with festive supporters until the early hours of the morning.

The last day saw the perfectly organized Turf Tour take the participants to the DSV-Eurograss Breeding Station in Asendorf to see the turfgrass breeding nursery and the plots for turfgrass mixtures and variety testing, followed by lunch offered by DSV. In the afternoon ETSC participants were taken on a visit of the Golf Course in Achim and the famous Weserstadion in Bremen where Bundesliga side Werder Brema play their home matches.



On the whole 110 delegates from 17 different states on three continents attended the ETSC, with a welcome mix of academics, practitioners and turfgrass industry delegates.

ETS has developed two categories of papers/posters, that are published in two offprint publications:

- Scientific publications, published in the widely-indexed European Journal of Horticultural Science (EJHS).
- Technical publications, published as the ETSC Proceedings on the European Journal of Turfgrass Science (EJTS).

All publication abstracts can be downloaded here: www.turfgrasssociety.eu/home/articles



STERF's Winter stress management programme

by Maria Strandberg¹ and Tatsiana Espevig²

¹STERF – Scandinavian Turfgrass and Environmental Research Foundation, Sweden

²Bioforsk Turfgrass Research Group, Norway & STERF program coordinator

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It is apparent that the golf and turf grass industry faces a number of local and international challenges, all of which will need concerted and collective solutions, underpinned by robust, applied science. To meet the challenges the sector has to face, the Scandinavian Turfgrass and Environment Research Foundation (STERF) has created four international and trans-disciplinary Research and development (R&D) programs, including:

- Sustainable water management
- Turf grass winter stress management
- Integrated pest management
- Multifunctional use of golf facilities

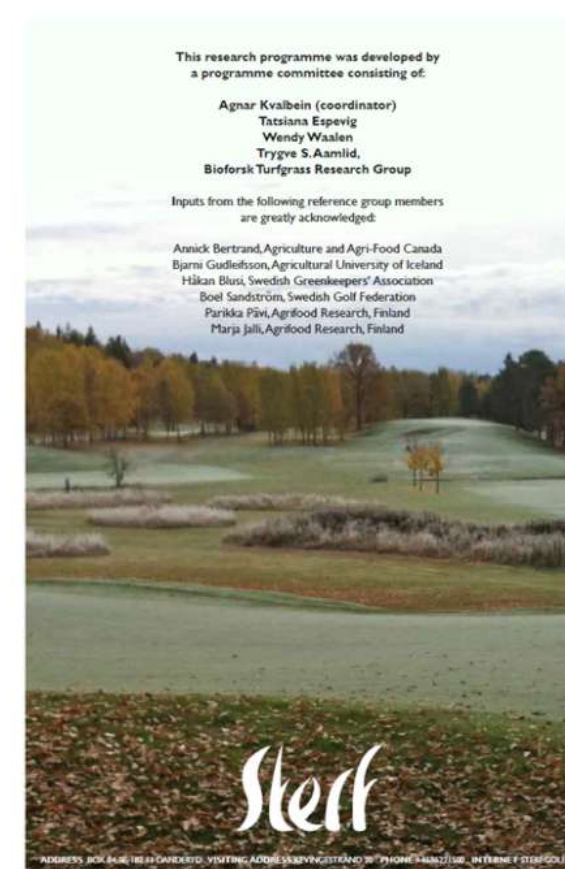
The programmes are created in close collaboration with the golf and turfgrass industry.

Progress in these programme areas will collectively lead to improvements in the quality of managed turf grass areas as well as economic and environmental gains for the industry. The key objectives of the programmes are to coordinate design and running of R&D activities, and to coordinate effective dissemination of the resulting new knowledge through channels and formats that are easily accessible to end-users. STERF will play a key role in expanding the programmes on an international level. All four STERF R&D-programmes can be found at: <http://sterf.golf.se>.

The programme within Turf grass winter stress management was published early 2014 and is a joint R&D programme between STERF and Canadian Turfgrass Research Foundation. Winter damage is the foremost reason for dead grass in the Nordic countries, reducing the aesthetic and functional value of turf. UN-IPCC climate scenarios predict that due to high precipitation and unstable temperature, ice and water damage will become the most important cause of winter damage in the future. The programme within winter stress management defines winter stress management as 'All actions taken to prepare the plant for the winter, avoid winter-related damage and re-establish high quality turf in the spring'. This is a complex but high priority area for STERF, as it has been estimated that

about 70% of Nordic golf courses suffer from winter damage every year, and that the associated average annual costs per golf course are €35,000-40,000. The programme was created by a STERF appointed committee consisting of Agnar Kvalbein (leader), Tatsiana Espevig, Wendy Waalen and Trygve S. Aamlid from Bioforsk Turfgrass Research Group.

To provide inputs and assure the scientific quality and practical relevance of the programme, the committee received assistance from an international reference group consisting of researchers, consultants and practitioners from Canada, Iceland, Sweden and Finland.



Winter School of greenkeepers was held at Mendel University successfully

by Stanislav Hejduk, Mendel University in Brno, Czech Republic

Traditional two-day educational seminar for greenkeepers, students and others interested in turfgrasses held in the campus of Faculty of Horticulture in Lednice (10 km from the border with Austria and Slovakia), which is part of Mendel University in Brno. The term of the seminar was December 4th and 5th 2014. The seminar was attended by over 50 participants mainly from the Czech Republic but also from Slovakia, Austria and even from Slovenia. Seven lectures were presented (5 foreign and two Czech) which were supplemented by new experiences of Czech greenkeepers



with cyanobacteria. The welcome speech was presented by vice dean of the Faculty of Horticulture Dr. Tomáš Nečas who had familiarized the attendants with history of faculty and its research and education activities.

At the outset of the seminar greenkeepers Kamil Pečenka and Jiří Kapeš presented problems that they had solved on their greens. Grass in the spots turned in purple colour, halted the growth and ignores the nitrogen application. After microscopic examination a high incidence of cyanobacteria *Phormidium* revealed. They were present even in the vascular bundles of grass leaves, where they apparently got through cut wounds after mowing. On the other greens they created a large amount of unpleasant slime.

The name of the first lecture was therefore *Cyanobacteria and algae on golf courses – problems, applications*. The lecturer was Dr. Tomáš Hauer from the University of South Bohemia, Czech Republic. He said to the present audience that algae and cyanobacteria were spread through the air and therefore it was impossible to eliminate the source of infection. If they occur in the irrigation ponds, the water is not a source of contamination, because cyanobacteria and algae living in water have different environmental requirements than those living in soil and turf.

Prof D.M. Kopec (University of Arizona, USA) presented problems of recycled water use for turfgrass irrigation and activated biosolids used as turfgrass fertilizers. He warned, that recycled water contain not only many plant nutrients, but also salt (sodium chloride), which can be harmful for physical properties of soil. Activated Biosolid are in the USA fortified by synthetic auxins which enhance turf vigour. The last lecture of professor Kopec was aimed to genetics of *Poa annua*. Different ways how to control the presence and heads formation of this grass in golf greens by herbicides and plant growth regulators were introduced. He also described the differences between annual and perennial biotypes and noticed that it was not possible to breed stable perennial varieties of this grass. This species behaves unlikely from other grasses and can switch its genotype in few generations according a given environment.

Chairman of Slovenian Greenkeepers Association Darko Cecelja presented Slovenian greenkeeping and many educational activities of the society. It is very surprising that so small country is able to organize many seminars and travel to the USA to get new knowledge and inspirations.

Dr. Jaroslav Martínek (Syngenta, Czech Republic), who defended his PhD thesis in turfgrass science, introduced current problems with pesticides registration and described how to face a new threat of pesticides audits on golf courses executed by government bodies recently.

Dr. C. Spring (STRI Bingley, UK) introduced his main area of interest in the title of the first lecture: *ITM: Don't forget the soil*. With respect to his background, which is focused to soil science, he emphasised, that greenkeeper should be at the same time also a *soilkeeper*. Content of soil organic matter in greens should be evaluated regularly for adjustment of aeration measurements and the frequency of top dressing with sand. Sometimes turf aeration can be just waste of time and money. In his second lecture *Integrated turfgrass management: Long-term evaluation of playing surfaces* he introduced an instrument for testing of greens trueness and smoothness (STRI trueness meter). He described also a measurement of other parameters as firmness (Clegg soil impact tester), penetration resistance, infiltration rate and soil moisture content of surface layers using Theta probe.



Last presentation was focused on weeds control in turfgrass and was presented by an independent consultant Dr. Giovanni Tracanzan from Italy. The most important statement was that it has not yet been found any practical alternative to the use of synthetic herbicides and biological and mechanical control of weeds is not sufficiently effective. He described a detailed strategy to regulate annuals C4 grasses (*Digitaria sanguinalis*, *Setaria viridis* and *Echinochloa crus-galli*) using a combination of both pre- and post-emergence herbicides. Unfortunately, these products are not registered for use in turfgrasses in the Czech Republic and in neighbouring countries. With climate warming these weeds becomes increasing issue also in Central Europe.

The seminar was a success for both the professional and social site and due to the long lasting, but fruitful debate it was not possible to present all scheduled contributions. Most participants expressed interest in participating in next year's seminar again.





BETTER TOGETHER – A UK EXAMPLE

by Prof. John Moverley, Chairman of the Amenity Forum.

This brief article provides information on the way all involved in the UK amenity sector are seeking to work together to promote best practice in weed, pest and disease control. They seek to voluntarily respond to changes and by so doing stay in control. It also introduces a new initiative seeking to promote research and importantly its practical applications in managed amenity grassland.

The impact of the UK's implementation of both the Sustainable Use and Water Framework Directives is significant and affects everyone in the amenity sector and certainly all those involved in sports turf. It requires everyone to demonstrate that they are operating at best practice levels and adhering to the correct standards.

In the UK, the Amenity Forum is the voluntary initiative established to promote best practice in all aspects of weed, pest and disease control.

It is funded by the sector and embraces in its membership all the various representative organisations as well as manufacturers, distributors, contractors, local authorities, utilities – in fact all who have an interest in the sector. It seeks to demonstrate that the sector working together is best placed to respond to change and is committed to high standards. This approach is far better than leaving it to external agencies to dictate change. The Forum is recognised by the UK Government and undertakes its work through guidance material, updating events, its important annual conference and exhibition and through dialogue with principal stakeholders and external agencies. It has a part time independent chairman and secretary but, in the main, relies on each of its members providing resource and time to make a difference.

To date, its achievements have been considerable and impact great. However there still remains much to be done and still many in the sector who need to get more engaged. Just as change is constant so is the need for the Forum to keep on developing and evolving.

In the remainder of this article we will look at just a few of the Forum activities but ones of real relevance to turfgrass.

The Amenity Forum has produced a series of guidance notes covering a wide range of topics. They are based upon the Ten Golden Rules, a document produced by the Forum in conjunction with the Government Agency, the Chemicals Regulation Directorate. If everyone follows the Golden Rules, then they demonstrate adherence to very best practice. These rules and all guidance notes are available on the Forum's website www.amenityforum.co.uk and are promoted as essential reading for everyone involved in the sector at



whatever level. The Forum is also active in promoting the Amenity Assured Standard. This award is externally verified by BASIS Registration and through its acquisition, organisations can fully demonstrate adherence to the highest standards. It remains voluntary but in the UK more and more awarders of amenity contracts are seeking the standard. The Forum is currently engaged in an initiative with the British International Golf Greenkeepers Association (BIGGA) seeking to develop specific guidance for greenkeepers so they can operate to Amenity Assured levels. It is very important that we can all demonstrate that we are operating at this level. If we work together and show that voluntarily we can drive up standards, it means that we can argue strongly against further changes or restrictions which may impede our ability to maintain current standards of performance.

In the first few months of each year, the Amenity Forum holds a series of updating events in a number of locations across the UK. These are free half day events when current topics such as policy change, integrated control, professional development and related items are presented and discussed. These are all directly relevant to those involved in the turf grass sector. They are hosted by member organisations and also receive sponsorship support. They are important in taking out the message and ensuring the sector is working together.

A key element of the UK National Action Plan established in the wake of recent implementation of the Directives is the need for all to take an integrated approach. . Before addressing weed, pest and diseases problems, it is important to consider all the control options available and make appropriate use of them to maximise effectiveness and efficiency. Integrated planning seeks to minimise risks and achieve required control by adopting the right approaches to suit specific situations. In seeking to further advance such an approach, the Amenity Forum is working with other key stakeholders across the turf grass sector to establish a research foundation for managed amenity grass. The aim is not only to support further research but importantly seek out ways for improving communication and application of research findings and outcomes at practitioner level.

Over the next months, the Forum is rolling out a series of new initiatives including its new Sprayer Operator Awards with a specific sports turf category and a new improved continuing professional development scheme. The latter is managed by BASIS Registration and seeks to be very flexible. It will recognise a wide variety of training including in house and that on other CPD schemes. Currently uptake on CPD for pest, weed and disease control is somewhat below par in the UK amenity sector and this scheme seeks to help improve the position. The Forum is also seeking to strengthen links with other European partners. . We are better together.

In the UK, we can be rightly proud of the quality of our sports surfaces and the skilled staff who make them so. An essential element of this is the need to control weeds, pests and diseases. It is important that we maintain the highest standards and keep fully updated. One way to do this is for organisations to join the Amenity Forum to demonstrate their commitment and further increase their lobbying power. To date this approach has proved extremely successful. Perhaps there is opportunity for a European Amenity Forum?

For further information about the Forum or its activities and to be included in its newsletter circulation, visit the website or contact Alan.Spedding@amenityforum.co.uk



WATERGOLF: Wireless distributed intelligent system for irrigation optimisation and early turf disease prevention and treatment on golf courses

by Filippo Lulli PhD, Turf Europe.

Water is perhaps the single greatest challenge to golf's sustainability. A recent report from the European Environment Agency (EEA) revealed that Europe has so far concentrated on increasing the supply of water rather than exploring ways to limit its demand, and recreational water takes up a growing percentage of total water use. Golf courses, especially in drier regions, are often targeted as using excessive amounts of water and some governments have labelled golf course usage as agricultural in order to deflect environmentalists charges of wasting water. The Golf sector has therefore been looking to find ways for optimizing its water consumption by increasing efficiency and using innovative technologies as this also makes good economic sense, since water costs will most likely rise in the near future. With this in mind, a pool of companies with financial support from the EC has developed **WaterGolf**: an innovative precision farming system to **a)** aid in scheduling and optimizing irrigation, **b)** predict the onset of fungal diseases and **c)** forecast the germination of common golf course weeds.

WaterGolf is wireless system capable of optimizing irrigation on golf courses and promises to aid greenkeepers in obtaining better-cared for greens and fairways and substantial savings in water usage as well. In fact, the EU-funded WaterGolf project, which kicked off in January 2013, could end up saving golf courses one third of their annual water budget. WaterGolf will also aid greenkeepers in supplying a forecast for the development of fungal diseases and weeds, together with an image processing tool, to advise the greenkeeper on the actions to take in order to maintain the course in top condition.

How is this achieved? By integrating underground sensors capable of measuring underground humidity, salinity and temperature along with surface sensors to measure colour, wind speed and direction, and evaposensors to measure turf water consumption, the system will greenkeepers with substantial and easy-to-use advice in the form of a) number of hours before estimated water stress, b) amount of water to be reintegrated in the soil or substrate, c) fungal disease alarms and related chemical treatments to be carried out, d) select weed germination alarm.

The system will work by feeding regularly updated measurements via wireless technology into artificial intelligence-driven software. This software will then suggest parameters for irrigation in different areas of the course, taking into consideration other inputs such as 3D golf course mapping, drainage and weather forecasts.

All measurements will be transmitted by means of low energy consumption ZigBee technology, with a bespoke antenna design. ZigBee is used in applications that require a low data rate, long battery life, and secure networking. The decentralized nature of this wireless ad hoc network makes it suitable for applications where a central node can't be relied upon, such as coverage over a golf course.

The WaterGolf system is directed towards a real improvement in golf courses: the technology can also be used to inform the user of any existing or potentially looming turf diseases, thus helping golf courses to remedy any problems quickly and efficiently. WaterGolf users will also have internet access to experts in the field, should they have any questions.

The project, which ran until December 2014, received 1.138.986 in EU funding under grant agreement #315054.

More info can be found at: www.watergolf-project.com





"NEWS FROM ACROSS THE POND"

Clemson's Bert McCarty Selected as Best Turfgrass Scientist

Bert McCarty, a Professor of Horticulture Science at Clemson University and Seneca resident, was honoured with two top awards by the Crop Science Society of America (CSSA) at its annual conference in Long Beach, California. He has been elected a Fellow of the Society and received the Fred V. Grau Turfgrass Science Award. Fellow is the highest recognition bestowed by the Society, while the Grau award recognizes national and international contributions to turfgrass science and his impact on the turfgrass industry. McCarty is the first Clemson University Professor to receive either award.

McCarty also recently received Clemson University's Superior Service Award within the Division of Agriculture.

The Crop Science Society of America (CSSA) is an international scientific society dedicated to the conservation and wise use of natural resources to produce food, feed, and fibre crops while maintaining and improving the environment.





New hybrid grass technology by “Mixto”

“Reinforced grass on football pitches is becoming more and more appreciated on the markets because of the continual improvement of the quality and the performance of the technology available in the world”, **reports Dr. Camillo De Beni**, the turfgrass agronomist consultant for Mixto Company. He announced that in Italy the Mixto Company, born of a partnership between two Italian leading Companies in their respective fields, Rappo for natural grass and Limonta Sport for artificial grass, has developed an innovative system called Mixto. It is a woven artificial turfgrass mat in which and through which natural grass grows and where the “special” artificial tufted fibres, called Max-S, used to reinforce the sward, are the result of hard R&D work by Limonta. Dr. De Beni claims that Max-S has a special shape and thickness which guarantee the highest resilience performance you can find today from an artificial fibre. The high resilience capacity of the artificial fibres is an important ‘plus’ in the reinforced grass market because it means an increase of the functions of the artificial component in the system: the protection of the crown and the grass leaves and the stabilization of the root. Furthermore, he declared that characteristic of the Mixto grass technology is also the high and persistent permeability for roots, water and air of the backing, the mat with the tufted fibres. This means that the natural grass, which grows through the artificial component, is able to produce and develop a deep root system in the root-zone mixture below the surface, ensuring the adsorbing capacity for nutrient and water, the ability to support and maintain leaves, to promote a quick recovery of any damage, and to permit the highest use of football pitches. The system is being used in some important Italian Stadiums and football Training Centres and Dr. De Beni mentioned that from the data collected, sport turf usage has dramatically increased.



The Company claims that Mixto is a technology that can be installed directly on the soccer field, sowing it in loco and using it within 2 or 3 months, or which some specialized nurseries cultivate and install on the pitch with big rolls, to ensure immediate use.

In conclusion, they say that reinforced grass should not be confused with fully artificial turf. The Mixto system is a ‘natural’ surface which combines wear tolerance, playability, planarity and drainage (if the draining soil foundation is solid and well-performing).

For more information and details, you can visit the Mixto website - www.mixtosystem.it - where all the references and the news are supported with high quality photos.



Agenda of Turfgrass Events



2015

What	When	Where	Info
BIGGA Turf Management Exhibition	20-22 Jan	Harrogate (UK)	http://btme.org.uk
TPI 2015 International Education Conference & Field Day	16-19 Feb	San Diego (CA-US)	www.turfgrasssod.org
Golf Industry Show	21-26 Feb	San Antonio (TX-US)	http://www.golfindustryshow.com
Demopark + Demogolf	21-23 Jun	Eisenach (DE)	http://demopark.de
TPI 2015 Live Show and Tell	9-11 Jul	Portland (OR-US)	www.turfgrasssod.org
Flormart	9-11 Sep	Padova (IT)	http://www.flormart.it
ETS Field Days	7-8 Oct	Copenhagen (DK)	http://ign.ku.dk/grass
ETP Farm Tour	12-13 Oct	Newark (UK)	http://www.turfgrassproducers.eu
SALTEX	4-5 Nov	Birmingham (UK)	http://www.iog-saltex.com
Agritechnica	10-14 Nov	Hannover (DE)	http://www.agritechnica.com
Paysalia	1-3 Dec	Lyon (FR)	http://www.paysalia.com

If you know of a turfgrass-related event which should be included in the Agenda of Turfgrass Events, please contact the ETS Newsletter Editor at etsoffice@turfgrasssociety.eu with all relevant details.



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Edited by Claudia de Bertoldi PhD, etsoffice@turfgrasssociety.eu

Deadline for submission of material for 02/2015 edition: **April 15 2015**



The EUROPEAN TURFGRASS SOCIETY



The objectives of the ETS include the spread of innovative applications and encouragement of a holistic view of turf, particularly with respect to its influence on urban and environmental quality. This approach is significant as the founding members are representatives of a large industry that has global importance. We aim to:

- a) Provide a forum for scientists, consultants, companies and practitioners to discuss technical issues related to the provision of turf surfaces.
- b) Spread innovative applications for the benefit of the turfgrass industry, national and local government, and the European public. Encourage a systems-based approach to the study of turfgrass through multi-disciplinary groups working at different levels.
- c) ETS considers turfgrass knowledge in the broadest sense, including its use in sport and leisure, its role in improving urban quality and its importance in the mitigation of environmental effects such as soil erosion.
- d) Develop a strong ethos to promote sustainable, low input systems and solutions based on the conscious use of non-renewable resources.

Current ETS Board of Directors



Panayiotis Nektarios
Athens Agricultural University
ETS President

Dr. P.A. Nektarios has received his Ph.D. from Cornell University with an expertise on turfgrass management and its environmental impact. His vast

experience on turfgrass science and culture is substantiated by more than 100 publications in impact factor journals, international and national conferences, university notes and daily press. He was the organizer/convenor of the 1st and the co-convenor of the 3rd International Conference on Turfgrass Management and Science for Sport Fields, under the auspices of International Society for Horticultural Science (ISHS) and the Editor of the corresponding *Acta Horticulturae*.

Since 2005 he is a Board Member of the International Turfgrass Society (ITS) and the Chairman of the Turfgrass Management Working Group of ISHS. He has served as co-editor and reviewer in several International and National Conferences focusing on turfgrass science and management. His expertise in turfgrasses has been commuted to younger student and scientists through teaching and experimentation at an undergraduate and postgraduate level at the Agricultural University of Athens.

He has been the coordinator and member of twenty granted research programs and a reviewer of more than thirty scientific journals and conference publications.

For further information visit:
www.aua.gr/nektarios



Adriano Altissimo
Landlab Studio Associato
ETS Board Member

Agronomist at LandLab Studio Associato, Vicenza, Italy. Since 1990 he focuses his scientific attention on turfs, working for private companies and taking

part in research projects in partnership with academic institutions such as the Universities of Padua, Italian Institute for Vineyard, the Plant Nutrition centre of Rome, Agronomy departments of the Universities of California, North Carolina, Kassel.

His research fields spread from organic and mineral fertilizers, and are now oriented towards low impact agriculture, by means of turfgrass test, mixtures evaluation under various conditions, technical support to sod producers.

Member of ASA - American Society of Agronomists - and ISHS - International Society of Horticultural Science, his approach to agronomy is meant to share, research, grow up with people of different ages and with different professional experiences, with the aim of working for stable, simple, efficient and low impact systems, paying particular attention to renovation and preservation of natural resources.

For further information visit:
www.landlab.net

**Maria Strandberg**

STERF - Scandinavian Turfgrass and Environmental Research Foundation
ETS Board Member

Maria Strandberg is Director of STERF, which is a leading International centre of expertise

in sustainable golf course management. As a part of her job, Maria also has positions in Golf Environmental Organisation (GEO) Advisory Council and GEO Technical Commission, and on the International Turfgrass Society board.

Maria has a background a lecturer and director of studies at the Swedish University of Agricultural Sciences. Maria has more ten years of experience in working with scientific issues regarding all aspects of high quality, and environmental and economic sustainability of managed turfgrass areas and golf facilities.

In 2008 Maria received an award from the King of Sweden for her national and international work on integrating golf and environment and in 2011 she received the Golf Environment Organization Environmental Award for her significant contribution to sustainable golf.

For more information please visit:

<http://sterf.golf.se>

**Scott McElroy**

Auburn University
ETS Board Member

Scott McElroy is an Associate Professor in the Department of Agronomy and Soils at Auburn University. He received his BA in Communication with an emphasis

in Chemistry from Auburn University, his MS from the Auburn University in Agronomy and Soils and his PhD from the NC State University in Crop Science with a minor in Plant Ecology. Dr. McElroy was previously employed as an Assistant Professor and Extension Specialist in Turfgrass and Weed Science at the University of Tennessee in Knoxville, Tennessee. His primary research area at Auburn is on new and improved methods for improved weed management in turfgrass systems, from golf course putting greens to turfgrass sod production to home lawns. Dr. McElroy holds a joint appointment with the Agricultural Experiment Station and the College of Agriculture. He also serves as a reviewer for the Weed Science Society of America Journal, Weed Technology, and the Agronomy and Crop Science Societies of America Journals, Agronomy Journal and Crop Science, and is a member of the American Chemical Society and American Association for the Advancement of Science. Dr. McElroy teaches two classes, Principles of Weed Science (AGRN 3120) and Applied Weed Science Technology (AGRN 5200/6200). Dr. McElroy is currently developing a third class, Sports Turf Management, for both undergraduate and graduate students.

For more information visit:

<http://www.ag.auburn.edu/agrn/faculty/McElroy/>

**Trygve S. Aamlid**

Bioforsk
ETS Board Member

M.Sc in Crop Science 1986.

Ph.D. in Plant Physiology / Seed production 1990.

Sabbaticals at Oregon State University (1991) and at PennState University (2005/06).

Since 1990 employed by The Norwegian Institute for Agricultural and Environmental Research (Bioforsk) with Bioforsk Øst Landvik as working place. Qualified as professor 1999.

Since 2002 leader of Bioforsk's research group for turfgrass and seed production. Experience from numerous projects in turfgrass physiology, seed physiology, seed production, plant breeding, variety testing and ecological restoration / revegetation. About 60 papers in peer-reviewed international journals and conference reports. More than 400 popular articles.

Lecturer at the Agricultural University of Sweden, Norwegian University of Life Science and several meetings and courses held by the national golf unions and greenkeepers' associations in the Nordic countries. Supervisor for Ph.D. students Lars Havstad, Ingunn Vågen and Tanja Espevig. Since 2006 scientific representative and vice chairman and on the Board of Scandinavian Turfgrass and Research Foundation, since 2009 on the Board of directors of the International Turfgrass Society and since 2012 on the Board of European Turfgrass Society.

For more information visit: www.bioforsk.no

**Wolfgang Praemassing**

DEULA
ETS Board Member

Study of Agricultural Biology (University Diploma) at University of Hohenheim, 1991 Doctoral Dissertation (PhD) Promotion with Prof.

Dr. H. Franken, University of Bonn, subject: Soil physical Effects of Aeration on Turfgrass Soils, 2008.

Occupation and activities:

Agronomist and lecturer in Greenkeeper Education and Training for golf and sport sites at DEULA Rheinland GmbH, Education Center, Kempen. Member of editorial staff of "European Journal of Turfgrass Science". Member of expert committee of German Soccer League (DFL). Member of working group "Turf" at German Soccer Federation" (DFB). Member of working group "Water" at German Golf Federation. Member of board of directors "International Turfgrass Society" (ITS). Member of examination boards of Chamber of Agriculture Nordrhein-Westfalen Golf Course Greenkeeper and Head-Greenkeeper, Greekeeper/Groundsmen Sport Sites, Competence of Pesticide application.

For more information visit: www.deula.de

**Arthur Wolleswinkel**

Barenbrug
ETS Board Member

Arthur has been active in the international turf grass industry for over 16 years now. At the moment he is an International Product manager at Barenbrug

since 2006. He is responsible for setting up innovative product development projects and the technical support of the European sales teams, distributors and end users of Barenbrug seeds for sports, landscaping and golf. Before starting to work at the Royal Barenbrug Group Arthur worked as an agronomist and soil and water consultant at Grontmij Nederland where he was in charge of several projects focused on developing and maintaining areas for sports and golf. He also worked for the Institute of Sports Accommodations of the Dutch Olympic committee being involved in the national variety testing system for the Netherlands. He studied Land-Water management and Agronomy at the Wageningen University from 1991 to 1996. Arthur is a so-called turf grass "freak" and likes to be outside to bring turfgrass solutions to end users on sports pitches and golf courses. For ETS he would like to contribute to reducing the gap between science and practice. In other words: make scientific knowledge understandable for the end user!

For more information visit: www.barenbrug.nl

**Stanislav Hejduk**

BRNO Mendel University
ETS Board Member

Graduated and Ph.D. defended at Mendel University in Brno.

Currently working as an Associate Professor at Department of Animal Nutrition and Grassland Science of Mendel University.

First contact with Turfgrass management was during lectures of Professor Fratissek Bures in 1995. His background is grassland management and Forage production. He has been

a board member of ETS since its foundation in 2007. Main area of interests in turf: soils, water x plant relationships, turfgrass strips in fruit orchards and in vineyards, plant stress, grass seeds multiplying. He co-operates in the area of education with the Czech Greenkeeper's Association.

For more information visit: <http://is.mendelu.cz/lide/clovek.pl?id=3042>

**Filippo Lulli**

Turf Europe
ETS Secretary and Treasurer

I am a University of Pisa graduate and PhD in Crop Science. I have been a member of the Centre for Research on Turfgrass for Environment and Sports since 2003. In 2009 I founded Turf Europe, a University of Pisa Spinoff company dedicated to turfgrass consultancy, teaching and R&D. I have been a member of ETS since its foundation and have always tried to be active and involved in all ETS events. I have written over 30

scientific articles on turfgrass and my main research areas are sports turf establishment and management and warm-season turfgrass species characteristics and physiology.

For more information visit: www.turfeurope.eu



EUROPEAN TURFGRASS SOCIETY

ETS 2015-2016 CAMPAIGN

Two year membership

REGISTRATION FORM (print, fill-in, scan and send by e-mail to: etsoffice@turfgrasssociety.eu)

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☐ PRIVATE € 153,00

☐ STUDENT € 51,00

COMPANY:

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☐ with turnover < 5.000.000€: 510 € - 3 individual memberships included with

☐ turnover < 25.000.000€: 680 € - 4 individual memberships included with

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