



EUROPEAN TURFGRASS SOCIETY

NEWSLETTER 4/2015

Via Quintarello, 12/A – 36050 Quinto Vicentino (VI) – ITALY

www.turfgrasssociety.eu

etsoffice@turfgrasssociety.eu

IN THIS NOVEMBER 2015 NUMBER:

5 TH ETS Conference Announcement - Algarve	page 1
Report on the 4 th ETS Field Days (Helsingør – DK)	6
Changes in ETS Board of Directors	8
Seminar on low input turfgrass management	9
Invitation to Czech "Winter School of Greenkeepers"	14
1 st ETP "Farm Tour" in Lincolnshire (UK)	15
Montecchia GC (Italy) confirms sustainable approach	16
SodSAT: EC funds turfgrass sod research	18
"Jobs, jobs, jobs"	19
Agenda of turfgrass Events	22
Info on ETS	23



ETS is pleased to announce the

5th ETS Conference in Algarve 5-8th June 2016 Albufeira (PORTUGAL)

<http://ets2016.ualg.pt>



On behalf of the **ETS - European Turfgrass Society**, the **University of Algarve** is happy to welcome ETS members and other turfgrass specialists to the 5th ETS Conference 2016 in Albufeira, Portugal.

ETS organizes its scientific turfgrass conference every two years. Italy (2008), France (2010), Norway (2012) and Germany (2014) were the previous hosts of this international conference. Portugal has been chosen to host the event in 2016, from 5th – 8th June 2016.

The meeting venue is the Algarve's largest Congress Centre and one of the largest in the Iberian Peninsula, a fantastic facility equipped with cutting-edge technology: the **Algarve Congress Palace, at the Salgados Palace Hotel, Algarve, Albufeira.**

The Organising Committee with Prof. Carlos Guerrero as convener, is preparing this international congress under the theme:

**"TURFGRASS – TOWARDS SUSTAINABILITY AND
PERFECTION FOR AESTHETIC, RECREATION
AND SPORTS"**



Algarve, which is the southernmost province of Portugal, has almost 200 kilometres of coastline, between cliffs and long-stretching sands, three thousand hours of sun per year and pleasant temperatures influenced by the Mediterranean climate.

Al-Gharb, which means 'the west', was the name chosen by the Arabs for a beautiful piece of land that had long been coveted by many. The Phoenicians, Carthaginians and Romans all left their mark on the language, customs and lifestyle of the Algarve people. The castles, fortresses, narrow streets, roof terraces and lacework-patterned chimneys are just some of the valuable legacies from these times.



Algarve and a turfgrass conference

Short transfer times from the airport to the major hotels, most of the leading hotels with large conference facilities are less than an hour from Faro international airport.

Great weather over 300 days of sunshine a year, mild winters, hot summers tempered by Atlantic breezes, and warm, sunny shoulder seasons, it's an ideal location for business and pleasure.

Algarve has a wide range of purpose-designed buildings suitable for conferences, business meetings, workshops, exhibitions, product launches, awards ceremonies, sporting events and cultural gatherings.

Out-of-hours, leisure: several trendy beach bars, stylish ocean-view restaurants, casinos and a vibrant nightlife, as well as a variety of activities and incentive ideas, from golf, tennis and water sports to sailing, hot air ballooning, aquatic shows, vineyard tours and jeep safaris.

History, culture, there is a large range of options for social activities and conference programs, from bustling, atmospheric towns and picturesque villages to Moorish castles and galleries, artisan centres and traditional crafts. Your delegates - and their partners - will be delighted to discover the Algarve:

"EUROPE'S MOST FAMOUS SECRET"



Algarve is also a privileged region where tourists seek for the beautiful beaches along the coastline. People can find rocky to sandy beaches, during the last four decades the Algarve has been the fate of many people who have sought to live in this region. Across several places, such as, Quinta do Lago, Vale do Lobo, Vilamoura, Albufeira, Armação de Perê, Carvoeiro, Alvor, Lagos, among others, we can find natural green spaces, public parks, particular gardens, where in addition to other plants, autochthonous or not, the grass is a widely used element.

Turfgrass activity in Portugal and Algarve

The importance of grass and lawns in Portugal is expressed especially in its use on golf courses, in 40 to 50 football pitches, where about 10 of them comply with UEFA/FIFA standards, 5 to 10 sod farmers, and its use in urban public areas and private gardens.

In Portugal there are about 80 golf courses ($\pm 3,000$ ha of grass), which 45% of them are located in Algarve. Even taking into account that the total area of turf on public areas and private gardens is unknown, the estimate area of turfgrass in Portugal may extend to 5,000 ha.

The Algarve region is one of the main golf destinations in Europe and worldwide. Typical characteristics as a golf, sun and fun destination, the Algarve was recognized, the Europe's Best Golf Destination of 2014 by the International Association of Golf Tour Operators. Golf was "discovered" as a touristic activity on the decade of 1970' and in the last decade of the 20th and earlier years of the 21st century, the number of golf courses in the region increased to nearly 40. Golf tourism is of the utmost importance to the Algarve, with nearly one and a half million rounds played per year and 1.1 million of overnights stays. Golf provides an annually direct income of around 350 million euros and a total revenue of around 1.8 billion euros, representing 1.25% of the Gross National Domestic Product, and 14% of the Touristic Gross Domestic Product.



Regarding this scenario there are several national enterprises providing services and technical support, construction and maintenance of gardens, suppliers of fertilizers, pesticides, seeds, sand, peat among others production factors.

Since 2000, the University of Algarve, in addition to Agronomy and Landscape Architecture courses, which are offered for over 30 and 20 years, respectively, also have been offering graduate courses in greenkeeping, construction and maintenance of lawns and gardens and a master's degree in Management and Maintenance of Golf Courses. Research activity has been also carried out on grass, with special emphasis on irrigation, on the use of wastewater, fertilization and control of pests and diseases issues and, ultimately, the use of remote sensing techniques for decision support.

The importance of turfgrass in Portugal and thus, the importance of a conference concerning turfgrass issues, results from the high numbers of golf courses, some football pitches and a lot of private and public gardens which are relevant on the economic fabric of the region. Portugal, and the Algarve region in particular, is a privileged golf touristic destination, due to the excellent climate conditions, and also mainly to the high quality standards of most of its golf courses. The region of Algarve holds nearly half of the Portugal's golf courses, and they are all well regarded for their high quality standards, for the outstanding accommodations facilities, and naturally for the exceptional weather to play the game. Not surprising, the majority of our courses welcome a high number of foreign people across the year. With this high number of players, turfgrass stresses are usual and high standards of maintenance are necessary to establish and maintain the high quality standard of the golf courses. For all those reasons we welcome the ETS Conference which is of most importance for the scientific and technical community and professionals working with turfgrass.

The ETS Conferences are the forum *par excellence* for scientists, consultants, companies and practitioners to discuss technical issues related with the study of turfgrass. Hosting the 5th ETS Conference 2016, it is our ambition to provide an optimum way to spread innovative applications for the benefit of the turf grass industry, national and local government, and the European public, promoting the exchange of information among turfgrass specialists from universities, official bodies and private companies.



Editorial information

The overall theme of the ETS conference is: **Turfgrass – towards sustainability and perfection for aesthetic, recreation and sports.**

We are honoured to invite all colleagues to submit abstracts for oral and poster presentations. Also, all interested authors are invited to submit a full paper with regard to the 5th ETS Conference that will be published in a peer review special section of **Urban Forestry & Urban Greening** (IF 2.109)

The ETS Board and the Organizing Committee welcome abstracts from all disciplines. We instigate the study of turfgrass for all uses: aesthetic, recreational and sports. Multidisciplinary studies, from breeding, physiology, nutrition, turfgrass management to applied technologies are welcome.

Once your Abstract has been approved you will be able to send an "Extended abstract" and a "Full paper". Both "Extended abstract" and "Full paper" will need to be submitted, respectively, by March 15th and April 15th 2016, as Word format only. The size limit for the "Extended abstract" is 2 pages and for the "Full paper" is 5-6 pages (7,500 words).

The "Extended abstract" size limit is quite strict as it will be published and printed in the Book of Proceedings. One person can be author of only one paper as the first author but can be co-author of several other articles. All articles to be submitted in ENGLISH language only.

Important dates

Opening of Abstract submission:	October 1st 2015
Deadline for Abstract submission:	November 30th 2015
Notification of accepted Abstracts:	January 15th 2016
Deadline for Extended abstract/Full paper submission:	March 15th/April 15th 2016
Deadline for early bird registration:	April 15th 2016
Notification of UFUG accepted paper:	October 15th 2016
Expected publication date of the special section of UFUG:	January 15th 2017

Looking forward to welcoming you at the 5th ETS Conference 2016 in Albufeira, Portugal!



A report on the 4th ETS Field Days “Sustainability and grass” Helsingør (DK) – 7-8th October 2015

by **Dr. Claudia de Bertoldi**, ETS Communications Manager

On 7th and 8th October 2015, The Division of Landscape Architecture and Planning, University of Copenhagen (Denmark) organized and hosted the 4th ETS Field Days 2015. Every two years, ETS runs its Field Days in one of its member countries, to promote the exchange of information among turfgrass specialists and this was the fourth event of a successful sequence started in Valencia, Spain (2009), Ghent, Belgium (2011), and Monte Carlo, Monaco (2013).

Some 50 delegates from 19 different states on three continents attended the ETS Field Days, with a welcome mix of academics, practitioners and turfgrass industry delegates. The convener Dr. Anne Mette Dahl Jensen welcomed all the participants at hotel Marienlyst (Helsingør) on the 6th of October with a pleasant Nordic standing meal.



The seminar keynote theme was: “Sustainability and Grass” and the focus lied on discussion of turfgrass areas designed and managed correctly, that can provide an important social, environmental and economic resource. Presentations have addressed interesting issues and innovations relevant to the turfgrass industry and research, among which the optimal plant nutrition, irrigation research progress, breeding grass for sustainable use and maintenance, no-pesticide management of sport fields, sustainable approach for green areas and grass on roofs.

Work opened on the morning of 7th October with a welcome on education and focus on sustainability from Susanne Ogstrup, University of Copenhagen, Denmark. Moderator for the seminar and panel discussion was Bruno Hedlund, STERF, who introduced the invited speaker presentations given by Maria Strandberg (STERF), Agnar Kvalbein (Bioforsk), Jerry Knox (Cranfield University), Trygve Aamlid (Bioforsk), Asbjørn Nyholt (Turfgrass agronomist), Arthur Wolleswinkel (Barenbrug), Thomas Randrup, (Swedish Agricultural University) and Torben Hoffmann (Byggros) Furthermore, Stefan Nielson from Vallda golf course (Sweden) and Thomas Pihl from Furesø golf course (Denmark) provided two practical examples of experiences regarding low input management and sustainable greenkeeping. After the presentations followed the Panel discussion with all the speakers.

The ETS General Assembly was chaired by Martin Thieme-Hack (Osnabrueck University) and saw the presentation of 2014-2015 activities, balance and budget by ETS Secretary Filippo Lulli (Turf Europe). As approved during the General assembly of ETS members, the next event of the Society will be held in Algarve (Portugal) in 2016. With this aim, prof. Carlos Guerrero from the University of Algarve (Pt), presented a slide show to describe the points of interest and the facilities that could attract participants to join the Conference in Portugal. The first day was closed by a exquisitely organized dinner at Campus Nødebo.

Day two was dedicated to field visits. The tour started at Frederiksborg Castle garden, Hillerød, a perfect place where to discuss on establishment, maintenance quality and challenges of grass without pesticides for the different lawn types. Garden manager John Noergaard took participants on a walk to look at maintenance and a talk about outsourcing of grass maintenance. Furesø golf course, the first Danish course that was awarded with the environmental price, was the second stop of the field tour and the course manager Thomas Pihl, discussed sustainable golf course maintenance during a pleasant walk.

All 4th ETS Field Days presentations can be downloaded at the **European Turfgrass Society's free ISSUU channel**: <http://issuu.com/europeanturfgrassociety>

Photos from the 4th ETS Field Days can be viewed freely at our **ETS Facebook page**:
www.facebook.com/media/set/?set=a.1632065143726077.1073741835.1427818190817441&type=3



Department of Geosciences
and Natural Resource Management



Changes in ETS Board of Directors

by **Prof. P.A. Nektarios**, Agricultural University of Athens, ETS President

Dear ETS Members,

I am writing to inform you all of some recent important changes that have concerned the ETS Board in the last 30 days.

On **October 7th 2015**, Board Member **Arthur Wolleswinkel** of Barenbrug informed the Board that, due to personal reasons, he would not be able to continue his presence within the ETS Board.

I would like to express my gratitude and that of the whole ETS Board for the significant contribution that Arthur has provided for almost four years. Arthur has always been a key player in all matters of ETS. Present and active to most events and meetings since 2009, he has been an invaluable resource in supplying the insight and support from the seed industry. It is also thanks to Arthur's mediation that ETS has often been granted the financial support of Barenbrug at many ETS events, both Conferences and Field Days. Arthur has expressed his willingness to remain available as an external consultant to the ETS Board, and for that we thank him as his input is undoubtedly of fundamental importance to ETS.



During the General Assembly on the same day, we gave communication of Arthur's resignation and the Assembly also approved the ETS Board's proposal that Dr. Ulrike Pitha take Arthur's place within the ETS Board, based on the fact that she was already an external consultant to the Board.

That GA decision was pending Ulrike's acceptance of the nomination to her new role, which thankfully arrived only a few days later.

Therefore I would like to welcome **Dr. Ulrike Pitha** of BOKU Vienna as a full ETS Board member. I am sure that her contribution will be important and valuable, as indeed it has been during her years as a Board consultant.

On **October 25th**, due to disagreement with the Board's leadership of ETS, **Adriano Altissimo** of Landlab decided to resign from his ETS Board member position. This resignation was accepted by the ETS Board on November 2nd 2015, on a majority vote.

It is worth remembering that Adriano was at the forefront of the ETS creation, firstly through the involvement of the German Rasenkolloquium, then the organization in Verona in 2005 of a meeting laying down the foundations of ETS and its manifesto. After helping in rallying financial support from industry key players, Adriano was one of the 10 Founding Members that met on July 6th, 2007 to officially sign the founding of ETS in front of a notary public in Pisa, along with Marco Volterrani, Stephen Alderton, Stephen Baker, Stanislav Hejduk, Klaus Müller-Beck, Alex Richter, Cilluf Svensson, Danny Thorogood and Gerard van't Klooster. From there, Adriano was nominated as the first ETS Secretary, a position that he held until July 2014, and has always been a member of the ETS Board, since its very inception.

Adriano has always been a key figure in the organization of ETS events, culminating by his own organization in March 2012 of a very successful ETS Regional Field Day in Trento.

Please join me in saluting, congratulating and thanking Adriano for his hard work and dedication - the Board will miss Adriano's experience and insight.



www.turfgrasssociety.eu

EUROPEAN TURFGRASS SOCIETY

Low input seminar on turfgrass management

by **Agnar Kvalbein**, NIBIO Turfgrass Research Group

More than 60 turf people from eleven countries visited Copenhagen in the first week of October for a STERF and R&D seminar on red fescue on golf courses

'Low input' has become a new term within the turf industry. It is all about reducing the input of irrigation water energy, pesticides and fertilizers. Golf courses must be managed in a way that is friendlier to the environment, and golf course owners must bring the economy in balance. The turf industry in the US also shows interest for 'low input'.

Authorities in most European countries are now developing action plans for reduced use of pesticide. Water is another limited and vulnerable resource that creates conflicts on many golf courses, and the European Water Directorate emphasizes the risk for local pollution.

'Low input' is about more sustainable management of all grass species. Yet, the seminar in Copenhagen focused on red fescue, and red fescue enthusiasts were in majority among the participants. The Scandinavian Turfgrass and Environment Research Foundation (STERF) is about to finish a research project about optimal management of red fescue greens, and the results were presented at the seminar. The participants were also updated with practical examples from greenkeepers who want to increase the amount of red fescue on their golf courses.

Here follows a short resume of the presentations. For those of you who are interested in more details, pdfs of all presentations can be downloaded by clicking on 'Events - past events' at www.sterf.org.



Visit to Elisefram Golf Course, Sweden

The seminar started at Elisefram golf course, located east of Malmö. Lars and Inger Ingesson were about to build a conference center with the golf course as a main element. They had chosen red fescue as the predominant grass species. The golf course was designed by the Scottish golf course architect Hawtree Ltd.

Photo: Turfgrass agronomist Conor Noland, STRI (left) gave the owner of Elisefram, Lars Ingesson, and the golf course architect Caspar Grauballe some hints about how to control moss, which can often be problem in red fescue.

The Links Initiative

David Colley is assisting greenkeeper at Rosslare Golf Club in Ireland. Rosslare GC is a links course that has experienced a big change from annual meadow grass to red fescue over a period of 10 years. David represented a special interest group called "the Irish Links Initiative". They have regular meetings in order to learn how links courses can be managed in order to return to the grass species that were originally there.

David told about how verti-cutting, irrigation, hollow-coring, abundant fertilizer applications and preventative spraying against fusarium and anthracnose (up to 15 fungicide applications per year) had changed his golf course into an annual meadow grass dominated nightmare. **"We realized that the strategy had to be changed. It cost a lot, but now the golf course appears attractive"**, he said.

Inputs Before and After Inputs

	2005	2014
• Expenditure	• €265,000	• €180,000
• Staff	• 8-10	• 6-9
• Grass Species	• 80%Poa, 20%Bent	• 70%Fescue 20%Bent 10%Poa
• Player Numbers	• 30,000 rounds	• 30,000 rounds
• Nitrogen	• 255kg/ha	• 30kg/ha
• Seed	• 800kg	• 1500kg
• Moisture content	• 20-30%	• 12-15%
• Fungicides (Litres) (Applications)	• 267 litres • 15 applications	• 20 litres • 1 application
• Top-dressing	• 350 tonnes	• 250 tonnes
• Mowing Heights	• 3-5mm	• 4-6mm
• Organic Matter	• 5.3%	• 2.5%

The following table shows changes and savings due to the change from annual meadow grass dominance in 2005 to red fescue dominance in 2014 at Rosslare GC:

Playing quality and grass species

Conor Noland, representing Sports Turf Research Institute in England (STRI), showed how the playing quality on greens depends on the predominant grass

species. STRI had collected data from around 2000 greens in UK and Ireland from 2010 to 2014. The data showed that the average green speed of parkland courses was 8,5" vs. 9,2" on links courses. Also smoothness (if the ball rolls smoothly or "jumps" up and down) and trueness (if the ball keeps a smooth putting line or diverges sideways) was better on the links courses.

STRI has so far only differentiated between annual meadow grass on one hand and "fine grass" (a not very clear definition) on the other hand. Conor concluded that greens dominated by "fine grass" were dryer, harder, quicker, smoother and fairer than greens dominated by annual meadow grass. From 2015 STRI will specify the grass species more precisely when collecting data.

Visit to Copenhagen Golf Club

Head greenkeeper (and president of Danish Golf Association) Martin Nilsson showed a unique course situated in the middle of a Royal zoo. About 2000 red deer were walking about and the course had to comply with very strict environmental requirements. Martin was working consciously to promote red fescue and he succeeded to a large extent. Besides the general advantages of red fescue in terms of water, fertilizer and pesticide consumption, Martin was especially pleased with the hardness of his fescue-dominated greens, as they resisted the brutal trampling of red deer hooves.

- This shows the wear tolerance of fescue courses, he remarked.



Photo: At Copenhagen GC, Martin Nilsson had succeeded in converting old greens to red fescue by conscious management. Photo: Sara Calvache Gil.



Photo: About 2000 red deer live on Copenhagen golf course and in the surrounding forest. Martin Nilsson explained that red fescue greens tolerate the wear from trampling animal much better than annual meadow grass. Photo: Sara Calvache Gil

Grass species for "low input"

Trygve S. Aamlid, representing NIBIO (Norwegian Institute of Bioeconomy Research), introduced a comprehensive and well documented outline of which recourses various grass species need to make good playing surfaces. Not only did he emphasize pesticides, but he also informed about irrigation, mowing requirements, mechanical maintenance and re-seeding. He

concluded that red fescue is a good choice for many reasons, but he also mentioned one negative aspect: The slow recovering of red fescue after winter damage. This is because red fescue does not respond to high fertilizer levels in the same way as annual meadow grass or bent grass. Red fescue is also more susceptible to ice damage than bent grass species.

Environment and economy

Per Rasmussen from Smørum Golf Centre is one of the Scandinavian greenkeepers having most experience with red fescue. He is responsible for one of Denmark's largest golf courses and talked about the environmental and economic benefits of red fescue.

There are not many red fescue courses in France, but Stephane Rouen is responsible for an old links course in Normandie; Golf Club Degranville. Situated on a drinking water reservoir he is only allowed to fertilize 120 kg N/ha/year, and he has to apply for exemption for any use of pesticide.

Stephane had realized that it was impossible to succeed under such conditions as his golf course was

dominated by annual meadow grass.

He was forced to change strategy and had experienced how red fescue gradually gained control over 7-8 years. Stephane has also tried sheep's fescue (*Festuca ovina*) on fairways with good results. He ended his presentation by rephrasing a well-known Indian saying:

*"When there shall be not enough gas to mow every day
Not enough money to buy fertilizer in quantity
When pesticides are banned and the quantity of water is limited*

THEY WILL UNDERSTAND THAT POA IS NOT A GOLF SPECIES"

Experimental results

Trygve S. Aamlid was the leader of the red fescue project, He presented results together with Sara Calvache Gil from NIBIO and visiting scientist Yajun Chen from China.

Use of compost

Root zone compositions and dressing materials were compared during a 3 year period on a USGA-green. The two root zones consisted of the same sand, but with peat or garden compost as organic amendment. Topdressing materials were either pure sand or sand amended with 10% (volume) of garden compost. The experiment showed interesting data when it came to the nutritional value of compost, leakage of phosphorus and nitrate from greens, and how mycorrhiza established better in compost than in peat. The differences became smaller as time went by, but the main conclusion was that a mature and well-defined compost can be recommended both in the root zone and in the topdress. This treatment will save considerable amounts of fertilizer the first years



after establishment. The advantages of topdress with compost were confirmed by Anne Mette Dahl Jensen presenting results from demo-trial over 3 seasons at Smørum Golf Club. In addition to a better visual quality she also found less fungus disease after applying top dress containing compost. On the negative side, the invasion of *Poa annua* was worse after dressing with compost. According to Anne Mette, this could be explained by a dryer surface and thus, less favourable conditions for germination of *Poa annua* seed after using straight sand than after using top dress with compost. See illustration.

Irrigation and seasonal fertilizer distribution

Many greenkeepers are of the opinion that irrigation and fertilizer is important for the competition between annual meadow grass and red fescue. In an experiment at the NIBIO Turfgrass Research Centre Landvik, Norway, red fescue and annual meadow grass were seeded in the ratio 97/3. The annual fertilizer input was 110 kg N/ha in complete balanced fertilizer following three different fertilizer distribution curves: The first treatment gave most fertilizer from early May to mid-summer, the second gave equal inputs from early May to late September, and the third gave the highest inputs from mid-August to late September.

Increasing amounts of fertilizer in late spring and early summer showed the best overall quality, but not significantly better than the 'flat' distribution. Increased fertilization in early summer also gave less annual meadow grass, less moss and deeper roots compared to increased fertilization in the late summer and early autumn. It was concluded that increased fertilization in the late summer and early autumn cannot be recommended even if it causes faster green-up in the next spring.

In addition to fertilizer distribution, four different irrigation strategies were also compared:

- 1) No drought stress. Irrigation to field capacity 3x per week.
- 2) Deficit irrigation to 60 % of field capacity 3x per week,
- 3) Deep and infrequent irrigation to field capacity 1x per week, and
- 4) Deficit irrigation to 60 % of field capacity 1x per week.

Deficit irrigation three times per week reduced the water consumption to less than one third without reducing the visual quality or the playing quality of the green. The different irrigation strategies did not



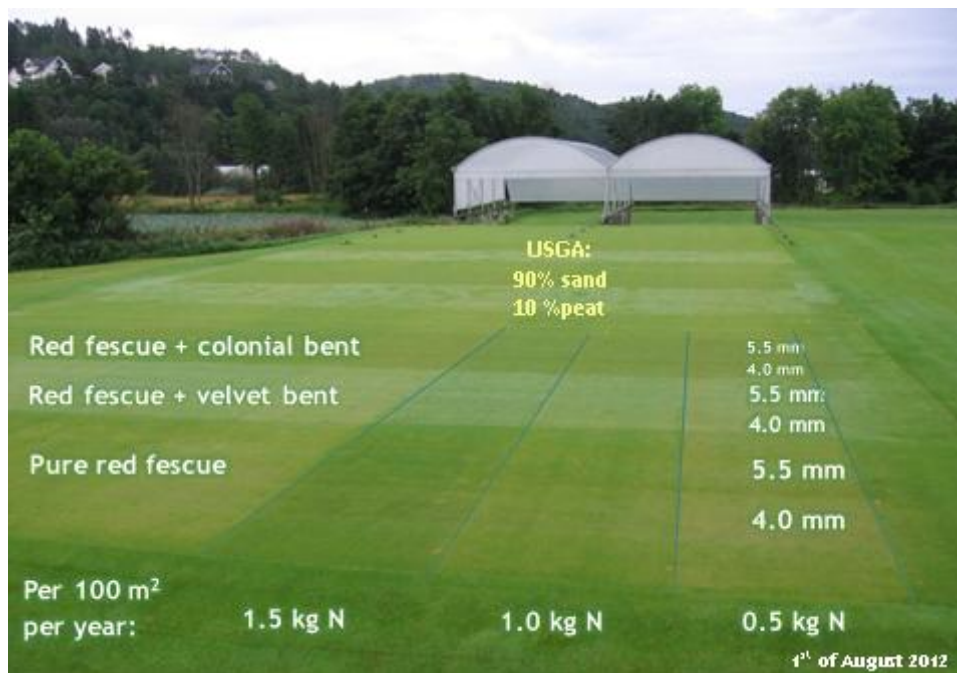
have significant effect on annual meadow grass, except from in the extreme drought treatment (no 4) which tended to reduce the coverage of this unwanted species. Moss problems increased with the irrigation frequency.

Photo: Although annual meadow grass does not like prolonged drought, it was difficult for red fescue to suppress annual meadow grass in this experiment.

Pure Red fescue - or mixed with bent

A difficult but relevant question is the competition between red fescue and bents. The most common mixture is red fescue and browntop bent (*Agrostis capillaris*), but red fescue and velvet bent (*A. canina*) has also been suggested. These two mixtures were tested in comparison with pure red fescue at different fertilization and mowing height. The competition with annual meadow grass was evaluated by measuring the diameter of annual meadow grass plugs inserted into the green.

Pure red fescue could not easily compete with annual meadow grass. In contrast, a mixture of red fescue and velvet bent competed very well. An interesting interaction between mowing height and fertilization on the competition from annual meadow grass was also discovered: The proportion of annual meadow grass increased with increasing fertilizer levels at 4 mm mowing height, but not at 5.5 mm mowing height.



Stimpmeter readings, always taken 24 h after mowing, showed a strong reduction with increasing fertilizer levels, but there was also an effect of species composition as ball roll was better on pure fescue greens and with the combination of fescue and velvet bent than with the combination of fescue and browntop.

Counting of tillers also confirmed that the botanical composition was influenced by fertilizer levels. With increased fertilization, the number of browntop tillers increased, whilst the number of fescue tillers remained stable. Velvet bent suppressed red fescue at high fertilizer levels.

Greenspeed and the replacement of mowing with rolling

Experiments at Smørum Golf Centre investigated the possibility replacing mowing with rolling on a green in ordinary play. The data were difficult to analyse, but it was concluded that the mowing height could be increased from five to six mm without influencing green speed if the green was rolled four days a week.

Photo: An experiment at Smørum Golf Centre investigated mowing heights and to what extent mowing could be replaced by rolling on red fescue green. Photo taken at red fescue workshop in 2012.

Low input from the US

Brian Horgan from the University of Minnesota presented an overview of research into red fescue and other low input species in the United States. Most research had focused on turf with higher mowing height and representing larger areas than golf greens. One of the experiences was that it is easier to find golf balls in high roughs if the thick stands of Kentucky bluegrass (*Poa pratensis*) are replaced with the more open stands of red fescue. US scientists also try to identify fescue species that tolerate golf cart traffic and that can repair divots on fairways. Another topic is how much of the herbicide glyphosate that can be tolerated by various fescue species.





New handbook is on its way

Before Steve Isaac from the R&A finished and commended the organizers on a successful seminar, it was announced that NIBIO is going to summarize the research results and experiences in a new handbook on red fescue management on golf courses. This handbook will be published on STERF's website next spring.

Photo left: Steve Isaac, R&A, gave some concluding remarks at the end of the seminar.

Photo below: Participants from 11 countries in the old auditorium at Copenhagen University



NIBIO

NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH



UNIVERSITY OF
COPENHAGEN

Sterf

An invitation to the Czech "Winter School of Greenkeepers"

by **Dr. Stanislav Hejduk**, Mendel University in Brno (CZ)

Czech greenkeepers association, in co-operation with Mendel University in Brno, Department of animal nutrition and grassland science, Faculty of Agronomy, Department of Planting Design and Maintenance, Faculty of Horticulture and Moravian union of scientific and technical societies, office AF MENDELU invite you to the **"Winter school of greenkeepers" with the participation of specialists from the United Kingdom, Sweden and Czech Republic.**

Mendelova
univerzita
v Brně



Dates: 2.- 3.12.2015 (Wednesday - Thursday)

Venue: MENDEL University, Faculty of Horticulture in **Lednice**, Valtická 337 (coordinates 48.7965069N, 16.7995025E)

Attendants registration	2.12.2015	8,00 a.m.
Beginning of the lectures:	3.12.2015	9,00 a.m.
Expected end of the lectures:	3.12.2015 c.	2,00 p.m.



Accommodation: every attendant orders on its own, student's dormitory or hotels are available

Lecturers:

Svatava Kubešová – Moravian museum in Brno (CZ)

Mosses – ecological requirements and biology from the point of view turfgrass managers

Václav Čermák – Central Institute for Supervising and Testing in Agriculture (CZ)

Root-knot nematodes in grasslands

Martin Ward - Symbio (UK)

Life in a rootzone of turfgrasses (up-to-date knowledge about use of *compost tea* and other biologically active products)

Stefan Nilsson - Golf & Country Club Vallda (SE)

Red fescue reduces costs and simplifies golf course management – experiences from Scandinavia

Kamil Pečenka, Jiří Kapeš - Czech Greenkeepers Association (CZ)

Update on state of registration of pesticides for protection of turfgrasses in the

Stanislav Hejduk - Mendel University in Brno (CZ).

Sustainability and Grass. 4th Field days of ETS in Denmark, October 7.-8th 2015

Fee of the course: 2400 CZK per person without VAT, for members of Czech greenkeepers association discount 50 %; application until 2.12.2013

e-mail secretary@czgreen.com, in case of late application and payment at the venue 2.800,- CZK without VAT (members of CGA discount 50%).

For more information write to: hejduk@mendelu.cz

Campus of the Faculty of Horticulture in Lednice. Faculty celebrates 30 anniversary this year.



European Turfgrass Producers Association 1st “Farm Tour”

by **Alexander Richter**, Richter Rasen (AT), ETP Board Member.

The European Turfgrass Producers Association (www.turfgrassproducers.eu), catering for the needs and instances of sod farmers around Europe, was founded in December 2014 and opened shop in January 2015. Their first event, the inaugural **ETP Farm Tour** took place in **Lincolnshire (UK)** on **12th and 13th October 2015**. The event was based in Lincoln, close to two host farms, Tillers Turf and County Turf.



In the first event of its kind over 100 turf growers and industry delegates from 16 different European countries, came together to see how turf is grown in the UK, interact and network with each other, and enjoy the atmosphere of Medieval England in the historic city of Lincoln.

Over dinner on the 12th, ETP President Tim Fell revealed the structure of ETP, along with its aims and manifesto, and its future plans, that currently include the organization of a 2nd ETP “Farm Tour” in Ginosa (IT) in September 2016 and a 1st ETP “Turf Show” in 2017 in Belgium.



Montecchia GC (Italy) confirms sustainable approach

by **Alessandro De Luca**, Italian Golf Federation

Golf della Montecchia was established near Padua (Italy) by a group of capable local businessmen in 1988 and is now approaching its 25th year of activity. Its Championship course, designed by the Irish architect Tom Macauley (former chairman of British Association of Golf Course Architects), hosted the Challenge Tour in 2001, 2002 and 2013 and the Alps Tour in 2010 and 2012. Throughout the years the course has been changed and improved, whilst nature has played its part in enhancing its floral heritage.

The gentle undulations of the golf course reflect the surrounding landscape of Colli Euganei, while its wetlands and grassland areas provide a perfect habitat for a rich fauna.



The golf course, whose dominant grasses were historically cool-season grasses (*Lolium perenne*, *Poa pratensis*, *Poa annua*, *Agrostis stolonifera*) has always been characterized by an efficient drainage system that makes it possible to play even during heavy rainy seasons. This represents a strength in winter time, while it has always been a weakness in summertime, which is characterized by high temperatures (up to 35° C) and serious drought.

In spite of high irrigation volumes, the golf course often experiences serious injuries on playing surfaces during the summer (especially on June and July months).

Typically used remedies were plentiful irrigations, pesticide applications and costly overseedings in late summer.

In 2003, aiming for a solution, Golf della Montecchia started a cooperation with Pisa University and Italian Golf Federation Green Section: the primary objective was to identify turfgrass species more suitable to transition climates.

In 2004, an experimental nursery with warm season grasses was opened.

In parallel with this initiative, a Bermudagrass cultivar (Tifway 419) was sodded on a part of the driving range tee ground.



Results showed a good adaptability of this kind of grass, with significant reduction in water and nutrients use compared to cool season grasses and any pesticide requirement. Bermudagrass also proved to be resistant to the cold winters typical of transition climates, providing good quality turf during the 4 months dormancy period. The trial results were presented at the '5th World Scientific Congress of Golf' at Phoenix (Arizona) in March 2008, as well as to the 'First European Turfgrass Society Conference' held in Pisa in May 2008. In 2010 a three years program started in order to switch the 27 hole fairways and tees (9 holes per year) from cool season grasses to Bermudagrass, using Patriot, a cultivar specifically selected in USA for transition zone.

The technique used was innovative (using small plants instead of stolons) and allowed the Bermuda to cover in just 6 weeks.

The decision to switch from cool season grasses to Bermudagrass has achieved the aim of providing better quality playing surfaces, while reducing maintenance inputs.

Fairways and tees maintenance data at the end of the process (growing seasons 2013-2015) shows significant differences compared to the maintenance data related to previous years (2007-2009), with dramatic reductions in terms of water consumption (70% less) and fertilization inputs (80% less) and eliminating the pesticide use.

From an aesthetic as well as a functional point of view, Bermudagrass fairways and tees showed a better quality than the previous cool season turf, with enthusiastic comments from golfers of every level.

The good results obtained by Golf della Montecchia in switching to Bermudagrass demonstrated the great adaptability of this grass in North Italy, where 70% of golf courses are located.

We can claim that Golf della Montecchia, located at 45.24° N latitude, is presently the northern golf course in Europe to have Bermudagrass on its fairways and tees.



This experience can lead the way for other golf courses in the transition zone that are thinking of switching from cool season grasses to Bermudagrass in order to reduce considerably the use of water and chemical products, as already requested by the Plant Protection Products Regulations introduced by the EC. At the moment, reaching the same good results of Montecchia, more than 30 new golf facilities in Italy adopt Bermudagrass and 13 golf courses converted fairways from cool season grasses to Bermudagrass are now ready to face this new situation.

Sum Up

Golf della Montecchia confirmed its commitment and its leading role on environmental issue starting other measures for enhancing its sustainability performances:

- Began a tree management plan together with the Landscape Horticulture Department of the University of Bologna;
- Started the first "Biogolf project Case study" carrying out an organic maintenance program supported by the Greens Section of IGF, the main Italian environmental organisations, GEO and Pisa University;
- Supported a new putting green study in collaboration with Pisa University concerning the adaptability of ultradwarf Bermudagrass Miniverde in Northern Italy;
- Carried out a research with Padua University to identify the best practices to naturalise the out of play areas.

SODSAT - Remote precision management of turf grass sod production by means of AI and satellite imaging

by **Dr. Filippo Lulli**, Turf Europe

The Main Objective of the SodSat project is to increase the competitiveness of turf grass sod producers by providing a novel remote intelligent turf management system by means of Artificial Intelligence and satellite imaging.



The agricultural surfaces employed for turf grass sod production are increasing yearly due to the expanding demand and the relative profitability of this type of crop. Sod (natural turf) production in the EU can be estimated to be in excess of 60,000 ha and involves 10,000 workers, generating a revenue of approximately €2.0 Billion. As such, turf grass sod production is gradually shifting from the status of niche production to agricultural crop proper.

In order to maintain the current profitability in an increasingly competitive market, sod growers need to increase or maintain certain quality parameters (such as uniformity of colour, texture and density), while addressing spiraling costs for fertilizers, pesticides and irrigation water. Naturally, an optimization in the use of these inputs would not only keep production costs down, but would also greatly diminish the environmental impact and footprint of sod production.

Satellite spectral imagery, on account of the frequent high correlation between spectral reflectance parameters and several crop parameters, would go a long way in identifying excesses or deficiencies in irrigation and fertilization.

Although satellite imagery analysis for crop production already exists, it is aimed and calibrated for traditional crops (such as wheat and maize) and not for turf grass sod production. As a result, the development of dedicated new tools to be used in such production fields is required to address this state of affairs. Such an addition of on-site valuable sensing will also increase the yield on natural turf grass production.

SODSAT, a two-year, EU-funded project hopes to increase the competitiveness of Europe's turf grass producers by providing a novel remote intelligent turf management system. The SODSAT initiative, which is being coordinated by the Maltese company Ateknea Solutions, aims to achieve this by means of artificial intelligence and satellite imaging.

This two-year project proposes to address the current situation by developing a web based expert system, multi spectral satellite imaging analysis and on-site sensing and portable devices software to aid decision-making in sod farms, in order to decrease chemical and agronomical inputs, while maintaining or increasing turf grass quality. The system will provide expert agronomical recommendations based on its historic and current data and current multi spectral image processing and on-site sensing.

The research undertaken in this project has received funding from the European Community's Seventh Framework Programme under grant agreement number 605729.



JOBS, JOBS, JOBS



Assistant Professor in Commercial Turfgrass Management sought at Iowa State University

Summary of Duties and Responsibilities

The Department of Horticulture at Iowa State University invites applications for a 12-month, tenure-track faculty position at the rank of Assistant Professor. The position of Assistant Professor in Horticulture specializing in Commercial Turfgrass Management with an emphasis in Extension and Outreach, has responsibilities of 70% extension and outreach, 20% research, and 10% teaching. The successful candidate will be expected to develop and teach a course in sports turf management and a course in turfgrass/landscape irrigation to be taught in alternating fall semesters. The candidate also will develop an externally funded research program that demonstrates intellectual leadership and scholarship in commercial turfgrass science, management, and production.



The incumbent is expected to interact with turfgrass managers and other industry professionals, providing science-based information and diagnostic assistance.

Finally, the successful candidate will be responsible for advising and mentoring undergraduate and graduate students and actively participating in service to the department, college, and university.

Required Education and Experience

Ph.D. in Horticulture or related discipline; professional experience in turfgrass science and experience in communicating with professional horticultural audiences.

Preferred Education and Experience

Classroom/laboratory teaching experience in the areas of turfgrass science, management, and production, and demonstrated experience and skill in communicating with students and professional horticultural audiences.

Department/Program & College Description

For more information about Iowa State University, The College of Agriculture and Life Sciences, the Department of Horticulture, and the State of Iowa, please visit: <http://www.hort.iastate.edu>

Additional Information

The guaranteed consideration date for this position is 09/30/2015. However, applications may continue to be submitted until the position is filled.

To Apply Please visit <http://www.iastatejobs.com:80/postings/11916> for application instructions.

Department Contact: Dr. Jeff Iles, Professor and Chair; 515-294-3718; iles@iastate.edu

Integrated Turfgrass Management Specialist at the University of Nebraska-Lincoln



The Institute of Agriculture and Natural Resources at the University of Nebraska is accepting applications for an Integrated Turfgrass Management Specialist with a 45% extension, 30% research, and 25% teaching appointment. This will be a twelve-month, tenure-leading faculty position at the Assistant rank in the Department of Agronomy and Horticulture in Lincoln, Nebraska. Focus of the position will be on

integrated turfgrass management and environmental risk reduction.

The incumbent will be expected to 1) lead an internationally-recognized turfgrass research and extension program focused on integrated pest management in turfgrass weed science, pathology, or related area; 2) teach undergraduate and graduate courses in advanced turfgrass physiology and management; 3) provide leadership to the Turfgrass and Landscape Management Program (TLMT) and students; 4) aggressively pursue funding opportunities from state, federal, and private sources; 5) publish in peer-reviewed journals and 6) contribute to student recruitment and science literacy efforts within the Institute of Agriculture and Natural Resources.

Teaching: The incumbent will have primary teaching responsibilities for TLMT 327-Turfgrass Science and Management and assist other faculty as needed in TLMT 227-Introductory Turfgrass Management and TLMT 427-Turfgrass Systems Management. The incumbent will also work with students conducting special problems and career experience activities; advise undergraduates in the TLMT degree program; and will actively participate in student recruitment activities.

Research: The incumbent will lead a research program focused on integrated turfgrass management with goals to reduce input applications, minimize environmental risk, and promote sustainable turf management through an emphasis on turfgrass pest biology and management. The incumbent is expected to work cooperatively with faculty in Agronomy and Horticulture, Biological Systems Engineering, Entomology, Plant Pathology, and the School of Natural Resources on interdisciplinary team research and obtain grant support. Collaborations with state and federal agencies and private industry are encouraged to support research activities. Research results are to be published in refereed scientific journals, at national and international meetings, and need to be translated to the public when appropriate and feasible. Recruitment and supervision of graduate students is required.

Extension: The incumbent is expected to work with other faculty in the turfgrass program to develop an interdisciplinary extension program serving a diverse clientele of turfgrass professionals, industry representatives, extension educators, and homeowners. Extension activities will include traditional and web-based dissemination of information such as field days, pesticide applicator training events, conferences and meetings, blogs, webinars, and distance education programs.

Requires a Ph.D. degree or Ph.D. in place by date of hire in Turf Management, or closely related field, with appropriate documented research experience. Post-doctoral experience is preferred. Additionally, demonstrated extension, research, and teaching experience in turfgrass management, evidence of a strong publication and grant record; excellent communication skills; experience working in multi-disciplinary teams; and potential for growth into a leadership role are preferred qualifications for this position.

To review the complete position details and to apply for this position, go to: <http://employment.unl.edu> , search for requisition number F_150255. Click on "Apply to this Job." Attach a cover letter, an overview of research and extension experience and interests, and a curriculum vitae. Arrange for 3 letters of reference to be sent via e-mail to: kdanforth2@unl.edu .

Review of applications will begin on December 4, 2015, and continue until the position is filled or the search is closed.

Researcher at University of Minnesota

Job Title: Researcher 3 **Job ID:** 304806
Location: Twin Cities **Full/Part Time:** Full-Time



UNIVERSITY OF MINNESOTA

Program/Unit Description

The horticultural plant pathology program addresses disease of horticultural crops including turfgrass, ornamental plants, fruits, and vegetables. Specific projects include the development of in-field/rapid diagnostic assays, evaluating disease management products and cultural disease management strategies, and public education programs for reducing the environmental inputs/impacts in agriculture.

About the Job

This position will focus on turfgrass pathology and include turfgrass diagnostics, application of fungicides, fertilizers and other products to turfgrass, evaluation of disease in the field, screening turf species and

cultivars for disease resistance, and other turfgrass pathology related projects.

About the Department

While the field of plant pathology continues to evolve, the goals of the Department of Plant Pathology at the University of Minnesota remain the same: 1) Solving today's complex plant health problems through cutting-edge research. 2) Providing sound plant health advice to stakeholders throughout Minnesota and around the globe. 3) Educating the next generation of plant health professionals and change-makers through a modern and broad plant pathology curriculum.

Duties/Responsibilities:

- 50% Perform field and greenhouse experiments working with plant pathogens.
- 20% Turfgrass disease diagnosis
- 10% Provide assistance and mentorship to undergraduate students working in the lab.
- 10% Present research to the academic community and industry stakeholders.
- 10% Maintain a clean and organized lab space, create and update SOPs.

Qualifications Required:

- Advanced degree (MS/PhD) plus 2 years experience; or BA/BS plus at least 4 years of experience or a combination of related education and work experience to equal 8 years
- Experience with fungicide and/or biocontrol applications on turfgrass is a priority.
- Ability to perform basic statistical analysis of data.
- Experience with general laboratory practices including making buffers, isolation of plant pathogens, waste disposal, maintaining a clean and organized laboratory.
- Ability to troubleshoot protocols and work under minimal supervision.

Preferred:

- Master's degree with specialization in plant pathology, horticulture, or other field with relevant experience.
- Experience using ARM software is desired.
- Plant disease diagnosis
- Microscopy experience is an asset
- Basic molecular biology skills are an asset

How To Apply

Applications must be submitted online.

Please visit: <http://www1.umn.edu/ohr/employment/> . To be considered for this position, please click the Apply button and follow the instructions. You will be given the opportunity to complete an online application for the position and attach a cover letter and resume. Additional documents may be attached after application by accessing your "My Activities" page and uploading documents there.

Apply online and attach resume, cover letter and the names, affiliation, job title and phone numbers of 3 professional references.

For more information about this position, you may contact Dr. Angela Orshinsky at aorshins@umn.edu



AGENDA OF TURFGRASS EVENTS



What	When	Where	Info
Paysalia	1-3 Dec 2015	Lyon (FR)	www.paysalia.com
5 th ETSC	5-8 Jun 2016	Albufeira (PT)	http://ets2016.ualg.pt
6 th Conference on Landscape and Urban Horticulture	20-25 Jun 2016	Athens (GR)	www.luh2016.org
TPI 2016 Conference & Field Day	22-25 Jul 2016	Houston – TX- USA	www.turfgrasssod.org
2 nd ETP "Farm Tour"	29-30 Sep 2016	Ginosa (IT)	www.turfgrassproducers.eu
13 th ITRC by ITS	16-21 Jul 2017	N. Bunswick (USA)	http://turfgrasssociety.com/itrc2017

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.



© European Turfgrass Society 2015

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

Deadline for submission of material for 01/2016 edition: **Jan 15th 2016**



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/convener of the 1st and the co-convener 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



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>

**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, Greenkeeper/Groundsmen Sport Sites, Competence of Pesticide application.

For more information visit: www.deula.de

**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 15 scientific articles on turfgrass and my main research areas are sports turf establishment and management, warm-season turfgrass species characteristics and physiology, precision farming applied to turfgrass..

For more information visit: www.turf europe.eu

**Ulrike Pitha**

BOKU University, Vienna
ETS Board Member

Born 1976 in Moedling/Austria, studied Landscape architecture and Landscape planning at the University of Natural Resources and Life Sciences Vienna. She wrote her master thesis at the institute of Soil Bioengineering and Landscape Construction (IBLB) about Gravel paths in historical gardens and her PhD thesis about wheelchair use in urban parks. Since 2006 she is leader of the vegetation technology research group of the IBLB.

Postdoc researcher, assistant at University of Natural Resources and Life Sciences, Vienna – Department of Structural Engineering and Natural Hazards – Institute of Soil Bioengineering and Landscape Construction. Group leader of the division 'Vegetation techniques', project management and research activities of national and international projects, lectures on specific vegetation techniques issues.

Expertise: vegetation technology; biometry of plants; microclimatic effects of plants; Plants for urban areas.

Appointments/Memberships in Professional Societies

2013 -2016 International Turfgrass Society advisor

2012 -2016 European Turfgrass Society consultant, then full Board Member

2011 - Austrian Standards Institute, Arbeitsgruppe 229.10 "Begrünung mit Wildpflanzensaatgut" field specialist.

For more info visit:

http://forschung.boku.ac.at/fis/suchen.person_uebersicht?sprache_in=en&ansicht_in=&menue_id_in=101&id_in=3428



EUROPEAN TURFGRASS SOCIETY

ETS 2016-2017 CAMPAIGN

Two year membership

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

FEES:

☐ PRIVATE € 153,00

☐ STUDENT € 51,00

COMPANY:

☐ with turnover < 500.000€ : 340 € - 2 individual membership included

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

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

☐ turnover > 25.000.000€: 1020 € - 5 individual memberships included

☐ public organizations and institution: 340 € - 2 individual memberships included

☐ Additional individual memberships (companies, institutions, associations): 50€

Password (8 characters) : [Choose the password](#)

Organization

(for private) family name

first name

Address

City

ZIP code

State or province

Country

Vat code or Fiscal code

Contact person

Contact person e-mail

Payment details:

☐ Banca Popolare di Vicenza - ABI: 05728 - CAB 60870 - C/C 139570536378 - CIN Z
IBAN CODE: **IT79 2057 2860 8701 3957 0536 378** - BIC-code **BPVIIT21139**

☐ Payment by Paypal with Credit-Card (ETS will send you a "request of payment" by Paypal)

Member 1 info:

*First name

*Family Name

*Date of birth (dd/mm/yyyy)

*Birthplace (city, state, nation)

*Codice Fiscale (only for Italian people)

*E-mail

*language

*Membership

*Address

*City

*Zip

State

*Country

*First Telephone

Member 2 info

*First name

*Family Name

*Date of birth (dd/mm/yyyy)

*Birthplace (city, state, nation)

*Codice Fiscale (only for Italian people)

*E-mail

*language

*Membership

*Address

*City

*Zip

State

*Country

*First Telephone

For additional members print and fill-in this page again and add to the form.