



# EUROPEAN TURFGRASS SOCIETY

## NEWSLETTER 04/2021

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## 2022 European Turfgrass Society Field Days

The **ETS** is organizing a **Field Days** in **end of April 2022 in Barcelona (Spain)**, dedicated to members and all turf specialists and professionals, involved in the lawn and sports turf care and landscape.

We will continue the successful experiences done in previous years. It will be a great chance to spend quality time together and an excellent opportunity to meet in person in a Mediterranean location, after a long period of social isolation.

The 2022 Field Days will focus on practical experiences to convey and share technical aspects and challenges to attendees by visiting research sites and functional turf areas in the area of Barcelona, for a very informative and enjoyable time.

Hoping for a large participation, we will soon provide **the date and all necessary information** on the ETS website.



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EUROPEAN TURFGRASS SOCIETY

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# Research projects of the endowed chair "Sustainable Turfgrass Management" presented at the University of Applied Science Osnabrueck

By **Mueller-Beck, K. G**

## Introduction

Within the framework of a face-to-face event, the members of the advisory board "Turfgrass Science" met for the 5th annual meeting at the Osnabrueck University of Applied Sciences on November 23, 2021. The participants were able to exchange ideas and discuss the development of the study program as well as the research activities "Sustainable Turfgrass Management" in the small lecture hall at the ILOS Institute.

The German Turfgrass Society (Deutsche Rasengesellschaft e.V.) acts as the contractual partner of the donors with the university. According to the DRG chairman, Dr. Harald Nonn, 15 individual donors from the institutional sector and DRG member companies are currently involved.

It is important for all organizations involved that the professorship at the Osnabrueck site is continued beyond the endowment period. In the course of the re-accreditation of study programs at the Osnabrueck University of Applied Sciences, it is intended to permanently integrate the master's program "Turfgrass Sciences" from 2024.

"The donors will accompany this process and continue to provide financial support for the various research projects," said the DRG chairman.



Fig.1: Student exercise to determine turf quality by rating and measurement on the turf trials. at HS Osnabrueck, Photo: W. Praemassing.

## Lectures and seminars on turfgrass science important for students

Particularly in view of the expected shortage of specialists in the various disciplines, the members of the advisory board were pleased with the positive development in terms of acceptance of the courses among students. Online lectures were also offered during the pandemic and will now be held in presence again for the winter semester 2021/22.

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Interested students from the fields of plant sciences (MNP) and landscaping (MLB) use the following turf modules as a specialization or elective in the master's program:

- **Turfgrass as a Culture,**
- **Lawn establishment and lawn care management,**
- **Turfgrass diseases and damage,**
- **Analytical testing methods,**
- **Determination of quality criteria on turfgrass.**

With increasing expectations for the function of public green spaces and thus also for lawns in terms of ecosystem services, professionally qualified graduates from the field of turfgrass science will be increasingly needed in the future so that the culture of turfgrass can be appropriately integrated and taken into account.

In this respect, in addition to teaching, considerable impulses can be expected from the research results for a sustainable development of turfgrass usage.

### **Turf research within the framework of master theses**

At the advisory board meeting, some current research projects that were completed with a master's thesis were presented.

In application-related turfgrass research, topics such as integrated pest management (IPM), turfgrass quality and the environment, resource consumption, climate change, turfgrass use, technical developments, sensor technology and digitalization play an important role. At present, for example, special attention is already being paid to questions of water management of turfgrass areas or sustainable nutrient supply, taking environmental aspects into account. The past dry years have contributed to an increased focus of research on the effects of climate change on the performance characteristics of turfgrasses.



Fig. 2: Prof. Dr. Wolfgang Praemassing inspects the experimental plots in the open field at Osnabrück University of Applied Sciences.

Photo: K.G. Mueller-Beck

### **The topics of the recent master theses are:**

- "Simulation and measurement of water distribution in different soil construction methods for surface and subsurface irrigated sports turfgrasses".
- "Impact of reduced phosphorus fertilization on golf course putting greens"- results from China, Germany, Netherlands, Norway and Sweden"
- "Determination of root length and root mass on five grass species in relation to climate change."

Particularly noteworthy is the fact that especially with the projects of "Sustainable Turfgrass Management" national and international cooperations in the research area were advanced on the part of the university.

These include, for example, the following concepts:

### **"SUSPHOS-Project"**

- Testing Fertilizer Guidelines for P Nutrition of Golf Greens, participation in international research project led by Trygve Aamlid/ NIBIO, Norway.
- Project period: April 2018-June 2020. Trials completed, submitted as master thesis. "The IPM Golf-Project"

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## “Integrated Management of important Turfgrass Diseases and Insect Pests on European Golf Courses”

- Funded by STERF and R&A with DGV participation, in cooperation with NIBIO/ Norway on IPM. Research focus on dollar spot and snow mold on golf turf with UV-C treatment and use of alternative products.
- Project period: 2020 – 2023



Fig.3: International research project on UV-C treatment of turf. Application of the treatment stages on the golf green in Osnabrueck, Photo: W. Praemassing.

## „Climate Turf Project“

- Project preparation fall 2020 in cooperation with Bayer. Landesanstalt Veitshöchheim, Staatsschule für Gartenbau Stuttgart-Hohenheim, Lehr- und Versuchszentrum Gartenbau Erfurt, Sächsisches Landesamt für Umwelt, Landwirtschaft und Geologie, Dresden, Fa. Eurogreen, Rosenheim/WW and Deutsche Rasengesellschaft.
- Project period: Spring 2021 - 2023 (PRAEMASSING, 2021).



Fig.4: Experimental plant for the climate turf project, HS Osnabrueck; Photo: K.G. Mueller-Beck.

The participants of the advisory board meeting agreed that with the establishment of the Endowed Chair of Turfgrass at the Osnabrueck University of Applied Sciences, an important institution for the promotion and establishment of the culture of turfgrass in Germany has been created. The enormous activities show that there is a considerable need for practice-relevant topics in the turf scene in Germany.

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### **Future prospects**

With the endowed professorship "Sustainable Turfgrass Management", Germany is gaining further importance in the international arena. The competence of this institution is appreciated in specialist circles in the turf scene, so that numerous contacts and activities in various committees have resulted from this. The field of turfgrass has found a new home at Osnabrueck University of Applied Sciences.

### **Author**

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### **Source references**

Hochschule-OS, 2021: Rasenwissenschaften.

<https://www.stb-hsos.de/ilos/weiterbildung/nachhaltiges-rasenmanagement>

PRÄMASSING, W., 2021: Stiftungsprofessur Nachhaltiges Rasenmanagement HS Osnabrück, Handout, unveröffentlicht.



**HOCHSCHULE OSNABRÜCK**  
UNIVERSITY OF APPLIED SCIENCES

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## Master in Management and Design of Sports and Ornamental Turf

The Master in “**Technical management and design of sports and ornamental turf**”, which is the first university course in Italy to deal with turf at 360°, ended in December with the discussion of the final theses.

The course started in January with a general session and went on in May with a special session, divided into three addresses: Golf, Sports fields and Ornamental.

All the following topics were covered: natural turf maintenance (cutting, cultivation, fertilization, pests management, irrigation practices), mechanics, synthetic turf, design, planning and economic management and environmental sustainability.



Visit at Golf della Montecchia - Padua



Visit at Quirinale Gardens - Rome



Visit at San Siro stadium - Milan



Visit at Venaria Royal Park - Turin

Included on the education plan, despite the problems produced by the pandemic, the 25 students had the possibility to attend several technical visits at important golf courses, at the major Serie A stadiums, at rugby fields and at historic parks of national importance.

The turf education programs in Italy have therefore been enriched with a new training offer, up to now mainly made up of the Courses for Superintendent organized since 1989 by the Green Section of the Italian Golf Federation. It is not a coincidence that the Agronomists of the Green Section are among the organizers and teachers of the Master, in collaboration with the University of Bologna and the Agronomist of C.O.N.I. (Italian Olympic Committee) and Lega Calcio.

The patronage granted by the major organizations in the sector testifies the need and the importance of qualified technicians.

The Master was supported by Cassa di Risparmio di Imola Foundation and leading companies in the sector such as Rappo, John Deere, Toro Pratoverde, Scarabelli Irrigazione, Gervasini and Clai.

Thanks to the great success of the first edition, the University of Bologna Academic Council has approved a Second edition of the Master for the next year.  
The start is scheduled for May 2022 and a maximum number of 30 participants will be admitted. The lessons will be held also in web mode.

For more information:

Official website of the Master: <https://master.unibo.it/gestione-progettazione-tappeti-erbosi/it/il-master>

e-mail: [master.tappetierbosi@live.unibo.it](mailto:master.tappetierbosi@live.unibo.it)

### Patronages:



### Sponsor:



## New turf tool from Wiedenmann Fairway roller extends mowing interval



**Wiedenmann upgrades its Terra Rake turf harrow. As a new tool option, the Fairway Roller now enables the rolling of natural grass. Many users have been waiting for this, because smoothing the blades not only saves a mowing pass, but also offers other advantages.**

Not only experienced greenkeepers of golf courses pull out all the stops to achieve top results in lawn care. One of the most important maintenance measures is the removal of dead plant parts, leaves and superficial roots.

Wiedenmann, the manufacturer of maintenance machines, offers the Terra Rake attachment for this purpose, which is also available in a trailed version. It removes the unwanted lawn thatch from the turf. The high travel speed of up to 15 km/h and working widths of up to 4.6 m illustrate the manufacturer's claim to offer users a great deal of productivity. In addition, they can easily expand the working area of the machine with interchangeable tools. For example, by fitting a brush bar to turn the harrow into a brush system. Or by using the finishing tool, with which the Terra Rake can also be used for the maintenance of sand bunkers. Wiedenmann has now expanded this spectrum even further.

With the new Fairwayroller, a heavy smooth roller for the tool carrier of the Terra Rake, it is now also possible to roll or iron the turf without having to purchase a new machine for this discipline.

The functional extension is exciting because it saves a complete mowing pass. Caretakers, pitch users and plants all benefit: For ball sports, the feeling of play improves, as higher rolling speeds result on "smooth" turf.



For the turf plant, the photosynthetic performance increases, as its blades remain standing longer, grow further and can thus soak up more sun. Finally, the mechanical forces of the roller stimulate the growth of the cell walls.

With fewer fresh cut edges and a more robust wall structure, the plant is better equipped to ward off harmful organisms and fungal diseases. Last but not least, this increases the option of having to use fewer crop protection products.

The bottom line is a clear gain in benefit with less effort. Videos on the manufacturer's new website at [Wiedenmann.de](http://Wiedenmann.de) show the Terra Rake in action.



## Gray Leaf spot tolerant Bar Stadium RPR® GLS and Resilient Blue® mixtures



Barenbrug's newest Resilient Blue® and RPR® mixtures have the best answer to the latest torment for turf grass specialists. Gray leaf spot (GLS) is a disease of increasing importance in the turfgrass industry in Europe. Recently, gray leaf spot has caused serious problems in Southern, Eastern and Central Europe. Common cool season grasses, especially perennial ryegrass (*Lolium perenne*) and tall fescue (*Festuca arundinacea*) are often susceptible. GLS disease can kill a total pitch within 48 hours.

Barenbrug's latest Resilient Blue® mixtures are the solution for people that demand a strong pitch that can withstand extreme weather conditions and rapidly fights back afterwards. Resilient Blue® technology is based on specially selected and treated *Poa pratensis* which are not susceptible for GLS. A mixture with Resilient Blue® technology inside (like *Resilient Blue® Sport*, *Resilient Blue® Golf* and *Resilient Blue® Lawn*) also contains *Lolium perenne*. After intensive research Barenbrug created a portfolio of *Lolium perenne* with the highest tolerance to this killing disease. Not only are Resilient Blue® mixtures highly GLS tolerant, there is a specially created mixture 100% *Lolium perenne* with RPR® technology for the soccer stadium market where GLS is most often seen so far: *Bar Stadium RPR® GLS*. The newest generation RPR® shows the highest tolerance to GLS within the *Lolium perenne* portfolio.



### Symptoms

Gray Leaf Spot is most severe during warm, humid weather with temperatures between 25°C to 30°C. Most of the time turf grasses are stressed by various factors, including drought, soil compaction and excessive nitrogen. GLS first appears as tiny, brown leaf and stem lesions, which enlarge rapidly into round to oblong spots. The largest spots may extend nearly across the entire leaf and become a bluish-grey in colour. Mature lesions are tan to grey with purple to brown borders. A halo or general chlorosis may occur around or near spots. The spots may be covered with a grey mycelium during periods of warm, humid weather. If disease is severe, the entire planting may appear scorched as if it were suffering from severe drought.



### GLS tolerant solutions

The RPR® technology is the solution for the highest wear tolerance and fastest recovery after wear based on regenerating *Lolium perenne*. The RPR® technology also provides a super dense sward by its determinate stolons. Bar Stadium RPR® GLS is a 100% *Lolium perenne* mixture with RPR® technology that is specially created for groundmen for their stadium pitches that could get hit by GLS.



The mixtures with Resilient Blue® technology provide the strongest solution for extreme conditions as a result of drought and heat stress. The foundation of mixture with Resilient Blue® is created by *Poa pratensis* with exceptional heat and drought tolerance and outstanding recovery after stress situations.



### More information

You can find all information about the new Resilient Blue® and RPR® grass technology at:  
<https://www.barenbrug.biz/resilient-blue>  
<https://www.barenbrug.biz/rpr>

Barenbrug created a 30 second video that tells it all:

<https://www.youtube.com/watch?v=ON-2c1UEuxA>

Please contact Barenbrug or your local dealer at: <https://www.barenbrug.biz/contact>

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# Characteristics of Herbicides for Turf, Ornamental Landscapes, and Aquatics (3<sup>rd</sup> ed.)

Bert McCarty, Matt Cutulle, and Adam Gore  
Clemson University, Clemson, SC (USA)

Professional turfgrass, horticulture, and aquatic managers are in an ever-changing business where technological inventions and upgrades, increasing demands for perfection, plus increases in sophistication in agronomic practices and products used in the business require consistent and up-to-date information to make the most effective and cost-efficient decisions possible. One important piece of this puzzle is knowing the technological principles of products used. Strategically used herbicides and plant growth regulators help maintain a desired landscape and uniform turfgrass stand which are aesthetically pleasing and provide a safe playing surface for competitive athletics.

## Characteristics of Herbicides for Turf, Ornamental Landscapes, and Aquatics 3<sup>rd</sup> Edition



**Bert McCarty, Matt Cutulle, and Adam Gore**

With the recent increase in herbicide resistant plants, new chemistries being introduced, and new means of using these, this publication provides the technical background needed for successful use of these products. The properties of these products, their mode of action, environmental fates, toxicological properties, herbicide resistance, and the various herbicide families and their groupings are outlined and explained in relatively non-technical terms to help the end-user make the most economical and environmental responsible decisions on potential products to use. A number of illustrations and color photographs are included to help readers visualize written concepts.

This publication is intended as a reference guide for golf course superintendents, assistants, club managers, green's committee members, students, sports field managers, professional lawn care operators, sod producers, and regulatory agencies in their efforts to grow and maintain some of the world's most prestigious turf and landscape ornamental venues. Authors with expertise in specific areas of herbicide chemistry, turfgrass, horticulture and aquatic plus environmental science have reviewed this publication, making the information as complete and up to date as possible.

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It is available for \$9.99 (US) at: <https://www.amazon.com/dp/B09M59KDCQ>



**GOOD STANDARD OR OPTIMISED ?**

The purpose of conventional soil analysis is to induce controlled mass growth in grasses for feeding, fattening and dairy cattle or breeding animals. The standard soil analysis according to VDLUFA and the recommendations derived from this method were developed precisely for this purpose.

The main objective for sports turf fertilization differs greatly from the standard procedure: the turf should maintain the balance of suitable grasses in the long term, frequent cutting should not have a negative impact on good tillage and vital greenery. Excessive growth is not desired.

**MEHLICH-3 SOIL ANALYSIS + MLSN-RECOMMENDATION**

The Mehlich-3 method from the USA is based on a mild acid extraction process and can be used for a number of elements. Higher nutrient contents are detected, especially for phosphorus. The MLSN fertiliser system for lawns has been developed on the basis of this method: with more precise application, leading to cost reduction.

**Our Mehlich-3 Analysis Offers:**

Mehlich-3-Basis P, K, Mg, pH-value CaCl  
 Mehlich-3-Basis\* like Basis + organic substance

Mehlich-3-Super P, K, Mg, pH-value CaCl  
 + Cu, Mn, B, Fe, Ca, S

Mehlich-3-Super\* like Super + organic substance



For the appropriate fertilisation of lawns in golf and sports fields:  
 Soil analysis according to the Mehlich-3 method in combination with MLSN (= Minimum Level Sustainable Nutrition) is an interesting alternative with impressive additional benefits.



The „MLSN“ principle means that the sown grasses are sufficiently nurtured to permanently find an ideal biotope, but are not pushed to mass growth. Nutrients are used economically, for a perfect lawn, without nutrient leaching.

**AGROLAB provides the analysis according to the Mehlich-3 method. Please contact your lawn crop advisor for fertiliser recommendation according to the MLSN.**

The MLSN fertilisation recommendation provides the minimum amount of nutrient supply for all turf types, which ensures that no nutrient falls below the MLSN guideline.

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## Demand is up and harvests are down: market insights for grass seed availability in 2022 from DLF Seeds



*A huge global demand and a shortage of grass and clover seeds reduced inventories, while other macro-economic effects also bolstered prices.*

### **Above-average 2021 seed harvest in Denmark, and slightly below in the Netherlands**

Compared to previous years, the early species, e.g. fescues and Poas, had a good yield, while perennial ryegrass (Denmark's leading seed species) was 2% above average yield. In the Netherlands, where perennial ryegrass also takes up the biggest acreage, the harvest was 7% below the five-year average. Grass-seed production in other parts of the world faced big challenges, especially in North America. The summer 'heat dome' that covered large parts of the US and Canada scorched so many fields, the harvest was a near-disaster. Even in regions with irrigation, the yield was below average.

New contracting for grass production faces a particular challenge: competition from high-priced alternative crops such as cereals, corn, oilseed rape and soya beans. Farmers have so many good production alternatives, there may well be limits on the future availability and price flexibility of grass and clover markets.



Even in regions with irrigation, the yield was below average. New contracting for grass production faces a particular challenge: competition from high-priced alternative crops such as cereals, corn, oilseed rape and soya beans. Farmers have so many good production alternatives, there may well be limits on the future availability and price flexibility of grass and clover markets.

### **Global consumption remains high – and so do prices**

Since our inventories were already low, we started our cleaning facilities at full speed immediately after the 2021 harvest. Our aim was to give customers a sufficient and early supply, especially for previously contracted quantities. As a result many species and varieties are already short or sold out for the coming season. Turf species are especially hard hit; prices for everything from lower-quality commodity varieties to high-end professional turf varieties are at an all-time high. The situation has been made worse by production countries that have been less active than usual on the supply side. China in particular seems hungry for seed.

### **TURF: Limited supply meets strong demand for season 2022**

Inventories remain low throughout the supply chain. Suppliers are focusing on loyal customers at their usual quantities to maintain long-term relationships. Mixture, coating and packaging capacities are close to the limit.

**Red fescue** prices are firming for all three sub-species. Despite the good harvest, supplies are insufficient to meet the high demand. Offers from Canada can rarely be found. On the positive side, this year's seed is of better quality than seed from the last three years.

**Smooth-stalked meadow-grass/Kentucky bluegrass** is back up to previous price levels as a result of market consolidation, a poor US harvest, and stock reduction in the EU.



**Perennial ryegrass**, the main driver in the turf-mixture market, is already hard to find from any production country. A combination of failed production and a big US demand has had a significant impact on price levels. And in a changing climate, demand for **tetraploid 4turf® varieties** is increasing.

The same factors are driving demand for **tall fescues** with their advanced root systems and good drought-tolerance. Even the normally cheaper forage-type varieties are hard to get for a reasonable price.



An increased demand from the professional turf sector, especially for **DLF Select varieties** with their higher technical quality, is a strong signal that outdoor sports are gearing up again after a long pandemic break.



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Edited by Claudia de Bertoldi PhD, [etsoffice@turfgrassociety.eu](mailto:etsoffice@turfgrassociety.eu)

Deadline for submission of material for 01/2022 edition: **March 20<sup>th</sup>**



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### ***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



**Stefano Macolino**  
University of Padova, (IT)

*ETS President*

Stefano Macolino is an Associate Professor at the Department of Agronomy, Food, Natural resources, Animals, and Environment of the University of Padova.

He graduated in Forestry Science in 1996, Faculty of Agriculture at Padova University.

He has carried out research on forage management and turfgrass at the Department of Environmental Agronomy and Crop Production as a Postgraduate Researcher. In 2003, he achieved the Ph.D. in Environmental Agronomy.

He has been teaching actively, including three courses: Turfgrass and Revegetation, Forage Crops, and Botany of Cultivated Plants. Dr. Macolino is currently the president of the Committee for the improvement of teaching at the School of Agriculture and Veterinary Medicine of Padova University.

He conducts researches on the following:

1. Impact of cultural practices on cool and warm-season turfgrasses in transition zones.
2. Forage crop production and management.
3. Production and plant biodiversity of mountain grasslands.

He supervised Ph.D. students and postdoctoral fellows on the made mentioned topics.

Dr. Macolino is the author and co-author of nearly 50 scientific publications in peer-reviewed journals, and numerous publications in conference proceedings, and technical magazines. He is also the author of two books in Italian for undergraduate students.



**Marcela Munoz**  
Syngenta (UK)

*ETS Board Member*

My name is Marcela Munoz, I'm a leading turfgrass specialist qualified as an Agronomist Engineer from The Pontifical Catholic University of Chile and have a Master of Science Degree from The Ohio State University in Turfgrass Management. Since 2015 I'm based in Cambridge, UK, working as Syngenta's Technical Services Manager for the EAME region.

I'm an amateur football player that joined this industry moved by my passion for sports, agronomy and science. I had been in the turf industry for more than 15 years and worked at different positions and countries around the world. Some of my latest exciting experiences include working for the STRI as a turf agronomy consultant for the FIFA 2014 Brazil World Cup and providing technical support at the Ryder Cup at Le Golf National in Paris. I'm also an active member of many turf associations around the world and volunteer since 2011 in the International Committee of the Sports Turf Managers Association of America (STMA)

In my current role I work closely with associations such as ITS, FEGGA, GMA, BIGGA, STERF, R&A and other local associations and Federations around the region. I also work very closely with the Syngenta Turf Research facility at Stein in Switzerland and the International Research Centre at Jealott's Hills in the UK, as well as independent researchers, agronomists, greenkeepers and sports turf managers across Europe, Africa and the Middle East. My role also includes supporting the marketing team and commissioning pioneering research to maintain Syngenta at the leading edge of turf science, as well as delivering the results back to the industry in the form of practical solutions to help create consistently better playing surfaces.



**Claudia de Bertoldi**  
Turf Europe Srl (ITA)  
*ETS Secretary and Treasurer*

I received my BA in 2003, after an internship at North Carolina State University (USA) and I have completed my M.Sc (*Progettazione e Pianificazione delle Aree Verdi e del Paesaggio*) at University of Pisa (Italy) in 2006. My PhD (*Allelopathic interferences of plants*) was from S. Anna School of Advanced Studies in 2007-2010. I have been working as consultant at Pacini Company (Pisa - IT) for warm season turfgrass production made in Tunisia during 2010-2012. Since 2013 I am employed by Turf Europe srl (Livorno - IT). I am actively engaged in landscaping and realization of gardens and turfgrasses for ornamental and sport use. Management of high-quality sport fields also through precision agriculture. Consultant for turf seeding in difficult zones (dumps and caves). Botanical censuses and visual tree assessment. Participation in R&D projects financed at European level. More than 15 publications, posters and presentations on conferences and meetings on turfgrass.

**Marco Schiavon**  
University of Florida (USA)  
*ETS Board Member*

Ph.D., is an Assistant Professor in the Environmental Horticulture Department, University of Florida at the Fort Lauderdale Research and Education Center.

His primary research interests include potable water conservation for irrigating turfgrass areas, salinity management, physiology of turfgrass in response to drought stress. He received a B.S. in Agronomical Sciences in 2005 and a M.S in Agronomy in 2008 both from University of Padua, Italy, and a Ph.D. in Agronomy in 2013 from New Mexico State University. In 2013, he moved to University of California Riverside where he worked as a Postdoctoral Scholar until December 2016, and subsequently as an Assistant Researcher until November 2019. He has published more than 30 refereed journal articles.



**Karin Juul Hesselsø**  
Norwegian Institute of Bioeconomy Research (NOR)  
*ETS Board Member*

M.Sc in Agriculture 1996, Copenhagen University. From 2006-2019 employed at the Greenkeepers College Sandmoseskolen in Denmark as teacher in greenkeeping and landscape gardening.

From June 2019 employed at NIBIO, Landvik. Experience with writing/translation of popular articles and fact sheets on golf course management. In 2018 project leader on an IPM-project on Danish golf courses financed by the Danish Environmental Protection Agency.



**Fritz Lord**  
COMPO Expert (GER)  
*ETS Board Member*

Study of horticultural science at Rhein University Geisenheim, M.sc. in soil science/entomology. Study of Agricultural Science at Humboldt University Berlin; M.Sc. in crop science, plant diseases; Ph.D at Humboldt University Berlin in phytopathology, antagonistic rhizobacteria (PGPR), soil borne pathogens (Fusarium). Since 2008 working for one of Europe`s leading fertilizer manufacturer COMPO Expert in Münster, Germany. Responsible for the segment turf and public green, vegetation-technical consultation, research and development, product management and education. Specialties/ experiences: soil-plant-microorganism interactions, bio stimulants, microbial fertilizer, turf nutrition and maintenance. Various publications regarding turf fertilization and maintenance (e.g. European Journal of Turfgrass Science, New Landscape). Teaching turf seminars for greenkeepers and groundsman in Germany and abroad. ETS member since 2008, board member of the International Turf Grass Society (ITS) since 2014. Further memberships: German Turfgrass Society (DRG), Greenkeeper Association of Germany (GVD) , Austrian Greenkeeper Association (AGA), Förderkreis Landschafts- und Sportplatzbauliche Forschung (FLSF), Forschungsgesellschaft Landschaftsbau e.V. (FLL).



**Wolfgang Praemassing**

DEULA (GER)  
*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:**

Professor for Sustainable Turfgrass Management at University of Applied Sciences Osnabrueck, 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 Turf expert committee of German Soccer League (DFL).

Member of working group "Water" at German Golf Federation. Member of examination boards of Chamber of Agriculture Nordrhein-Westfalen Golf Course Greenkeeper and Head-Greenkeeper, Greekeeper/Groundsmen Sport Sites, Competence of Pesticide application.

**Carlos Guerrero**

University of Algarve (POR)  
*ETS Board Member*

Carlos Guerrero is graduated in Horticulture Engineering at the University of Algarve (Portugal). Has a M.Sc. in Soil Fertility and Plant Nutrition at the Agronomy Superior Institute, of the Technical University of Lisbon (Portugal) and a PhD in Environmental Agronomy at the University of Algarve (Portugal).



Assistant Professor at the University of Algarve (Faculty of Sciences and Technology), a former Diretor of the Degree Program in Agronomy (2015-2018) and also a former Director of the Master Program in Management and Maintenance of Golf Courses between 2008-2010.

Teaches Soil Science in Landscape Architecture and Soil Science and Agriculture Machinery in the Agronomy. Is also specialized in groundwater and soil nitrate pollution and has experience on organic and compost uses in agriculture and turfgrass.

Actually, is working on biological control of plant diseases, mainly turfgrass, and also on remote sensing for turfgrass maintenance purposes with unmanned aerial vehicles and multispectral sensors."

