



EUROPEAN TURFGRASS SOCIETY

NEWSLETTER 02/2021

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2022 European Turfgrass Society Field Days

The ETS is organizing Field Days in spring 2022 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 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 for a very informative and enjoyable time.

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



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ETS 2021 webinars will follow up!

After the successful Spring series of webinars, the **European Turfgrass Society** will continue with the Autumn series, that will be held online on the following topics:



- Sustainable Disease, Pest and Weed Control - natural/organic products
- Fertilization & Biostimulants - Advanced Stress Management with Biostimulants
- Water scarcity and irrigation - Sustainable Water Management
- Turf Cultivars/Breeding
- Mechanical practices advantages
- Wear tolerance (species and cultivar selection, plant growth regulators, fertilization)
- Specific webinar to greenkeepers or groundsman

Given the long-term restrictions all over the world, it will probably be difficult to meet in person also for 2021, but we wish to keep on providing knowledge and connections, for the benefit of the turfgrass world.

The Spring series has seen a considerable number of participants (between 75 and 85 attendees) from different countries all over the world. The panel discussions has been interactive with many questions and the recordings of the webinars have been watched several times after the events.

The webinars are organized by ETS and the event brings together the industry and the academy, and also many greenkeepers, and creates a space for clients to ask questions and engage with speakers.

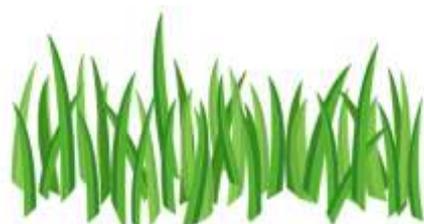
They have given us the opportunity to communicate new experiences and maintain relationships with people involved online. It was an excellent opportunity to convey recent scientific results and new technologies for turfgrass management. The fact that all sectors related to turfgrass had been involved was in full compliance with the objectives of our Society. We discovered a great appreciation for this initiative, as demonstrated by the significant participation and it was an unexpected success. Lastly, we have decided to propose new series for the coming autumn in preparation for Field Days in spring 2022.

The program is as follow:

- 2 series of webinars (Spring and Autumn), "2021 European Turfgrass Society Webinar Series"
- The admission to webinars is NOT subject to a registration fee.
- Each webinar has a dedicated theme.
- Each webinar will have 2 academic/independent turf specialist/ speakers presentations. Total time of the webinar: 1h 30min.
- There will be a panel discussion after the presentations of 40 minutes with possibility of interactions with the speakers.

If you would like to participate to the organisation of the ETS Webinars, please contact the Organizing Committee via e-mail:

etsoffice@turfgrasssociety.eu



STERF yearbook 2020

By **Maria Strandberg, STERF Sweden** E-mail: maria.strandberg@golf.se

2020 was to be a year when we started large STERF projects with numerous international collaborators and looked forward to many interesting meetings, seminars and workshops, final preparations for the International Turfgrass Research Conference in Copenhagen 2021 and much else. However, a pandemic overturned almost all our plans.

A consequence of the restrictions on travel and meetings due to the pandemic was that most technology transfer events were cancelled but, as need is the mother of invention, the scientists in all STERF projects started using digital solutions to overcome these problems. We arranged an international webinar for the project "From dense swards to biodiverse roughs" with more than 150 participants from all over the world. Several instructional and inspirational videos were produced, and hundreds of meetings were held between scientists on different digital platforms. This experience of digital communication



and delivery will most certainly affect and improve STERF's knowledge and technology transfer during the coming years. Another notable observation is that the number of reports, publications and articles was one of the highest in STERF history.

All aspects of sustainability (environmental, economic, social) will have a higher priority after the Coronavirus crisis. Therefore, new knowledge built on research and science is crucial for supporting the turfgrass industry to meet new critical challenges. These include the pressures arising from government demands for more extensive environmental regulation, the increasing pressure on natural resources (notably water, energy and land), the emerging role of turf management in supporting ecosystem services and enhancing biodiversity, the continued need to promote integrated pest management, and the looming challenges posed by a changing climate and an urgent need to adapt. New knowledge is also necessary for the industry to contribute to fulfilment of the 17 United Nations Sustainable Development Goals (SDGs) set out in Agenda 2030. STERF's six new projects are very timely to meet these challenges.



Please let us know if you have any questions or comments related to the yearbook. Your feedback on STERF's ongoing projects and activities would be very valuable for us. Ideas of potential new programmes and projects would also be interesting and inspiring.

The yearbook and more information about STERF's programmes and projects can be found on www.sterf.org

Cynodon spp. (Bermudagrass) cultivars adaptability studies started at the Ugolino Golf Club (Florence) and at Golf della Montecchia (Padua)

By Alessandro De Luca - Italian Golf Federation – Green Section

Ugolino Golf Club (Florence)

On 7 June 2021, thanks to a collaboration between the Ugolino Golf Club, the University of Florence, the Certes of Pisa University and the Green Section of the Italian Golf Federation, was launched an adaptability study of 4 *Cynodon spp.* (Bermudagrass) cultivars.

Promoter of the study is Vanni Rastrelli, Superintendent at Ugolino Golf Club. After the degree in Agriculture at Florence University and the Superintendent Diploma at the Green Section of the Italian Golf Federation, Vanni is now attending the Master in "Turfgrass management and design" at University of Bologna.

Ugolino Golf Club has been evaluating for years the possibility of converting its fairways into bermudagrass. The aim of this study is therefore to verify in situ the behavior of some of the most recent cultivars introduced on the market and specifically selected for the good adaptability to transition zone.

In addition to Tifway, introduced on the study as a standard cultivar, the two hybrid cultivars Latitude 36 and Tahoma 31 (*Cynodon dactylon x transvaalensis*) and the seed cultivar Monaco will be evaluated (*Cynodon dactylon*).



Golf della Montecchia (Padua)

In the same month, in particular on 25 June 2021, a second study was launched on the adaptability of three *Cynodon* (Bermudagrass) spp. cultivars. In this case it was possible thanks to an initiative of Golf della Montecchia in collaboration with the University of Padua and the Green Section of the Italian Golf Federation.

Promoter of the study Dr. Chiara Ferrari, who after graduating in Agriculture and a short experience at the University of California is now attending the University Master in "Turfgrass Management and Design" organized by the University of Bologna.

The study is focused on 2 new seeded cultivars of *Cynodon dactylon* and the hybrid *Cynodon* cultivar (*Cynodon dactylon x transvaalensis*) Patriot, used on the tees and fairways of Golf della Montecchia since 2010.



Thanks to the collaboration with some universities, several studies and direct applications in the field were conducted at the Golf della Montecchia, which involved the environment and obviously the turf. Among the most significant research was the adaptability tests of warm season turfgrass species above the 45th parallel started in 2003 and in 2010 led to the conversion of the tees and fairways of Golf della Montecchia from cool season turfgrass species to Bermuda grass (*Cynodon dactylon x transvaalensis*). This was the first experience of conversion to Bermuda grass at these latitudes and made it possible on these areas to reduce water consumption by 70%, fertilizer use by 80% and to eliminate the use of pesticides. This created great interest in the scientific community and was studied by numerous golf courses that then started the process of converting their tees and fairways into Bermuda grass

Objectives

The results of these studies could encourage a further extension in Italy of the use of Bermudagrass. Indeed, several direct applications in different golf courses highlighted the more environmentally and economically sustainable management of Bermudagrass, compared to the traditionally used cool season grasses.

In fact, even above the 45 ° parallel Bermudagrass allows to significantly reduce the water and fertilizers consumption and to eliminate the use of pesticides, with advantages also for the turf quality.

These researches will be included on the research activities carried out in Italy on warm season grasses, started since 1995 by the Green Section of the Italian Golf Federation, the Certes of Pisa University and continued over the years by other research centers, especially the University of Padua.

During the 4 years study the following parameters will be assessed:

- establishment
- density
- texture
- visual quality
- colour
- winter dormancy
- spring green up
- roots mass



Ugolino Golf Club (Florence)



Golf della Montecchia (Padua)

"Pitch of the Year" awards for top stadium turf in German Bundesliga

By Dr. Klaus Mueller-Beck, DRG.

The German Turfgrass Society congratulates the greenkeeping teams of the award winners as well as the runners-up for their outstanding achievements in turfgrass management.

DFL Deutsche Fußball Liga has once again honoured two clubs for their outstanding pitch quality this year. Bundesliga club VfL Wolfsburg's 'Volkswagen Arena' received the "Pitch of the Year" award for the 2020-21 season, while Holstein Kiel's 'Holstein-Stadion' was selected as the top pitch from Bundesliga 2.

The winners were chosen by a jury comprising members of the German Turfgrass Society (DRG e.V.), who are also on the DFL expert commission tasked with safeguarding pitch quality in Bundesliga and Bundesliga 2 stadiums. The winners will be presented with the Greenkeeping Awards and certificates during the Gatekeeper's Information Meeting, currently planned for October 2021.

The award-winning Bundesliga and Bundesliga 2 clubs are:

Bundesliga

- VfL Wolfsburg – 'Volkswagen Arena'
- Borussia Dortmund – 'SIGNAL IDUNA PARK'
- FC Bayern München – 'Allianz Arena'

Bundesliga 2

- Holstein Kiel – 'Holstein-Stadion'
- 1. FC Heidenheim 1846 – 'Voith-Arena'
- SV Darmstadt 98 – 'Merck-Stadion am Böllenfalltor'



Fig.1: Bundesliga, VfL Wolfsburg at 'Volkswagen Arena' has been awarded „Pitch of the Year" 2020/21. (Photo: DFL/Getty Images/Oliver Hardt)



Fig. 2: Bundesliga 2: The „Pitch of the Year“ award goes to Holstein Kiel at Holstein-Stadion.
(Photo: DFL/Getty Images/Oliver Hardt)

Standards for pitch condition and characteristics are constantly rising. The “Pitch of the Year” award has been presented since 2013-14, based on the concept for stadium pitches concept that is distributed to all Bundesliga and Bundesliga 2 clubs.

About the evaluation system

This year, evaluation for the award was based on two blocks: the “sporting criteria” and the seasonal measured data from the in-house testing of stadium greenkeeping. The “sporting criteria” is geared towards the grading by the team captains of the participating clubs and the respective referees, who submit their verdict on the state of the pitch after Bundesliga and Bundesliga 2 matches. For the second successive year, the jury did not make their customary visit to the stadiums, as on-site assessment was not possible due to the impact of the coronavirus.

More information on quality assurance for stadium pitches can be found in the:
[DFL Workbook for Greenkeeping](#)

Source reference

DFL Press Release, 2021:

<https://www.dfl.de/en/news/pitch-of-the-year-awards-for-vfl-wolfsburg-and-holstein-kiel/>

Leatherjacket research styles ITM solutions



Leatherjackets have become a dramatically increasing issue for turf management across Europe in recent seasons. A whole series of factors, mostly outside of greenkeepers' control, appear to have coincided to favour the pest – and with it the damage that is occurring on quality turf surfaces.

That has driven the urgent search for solutions and techniques from the research community and turf businesses to reduce the pest's impact and create a sustainable long-term control strategy, **reports Syngenta Technical Manager for EAME, Marcela Munoz.**



With the scale of the challenge from leatherjackets, it is increasingly clear that, for most courses and turf surfaces, it will be a truly integrated approach using all cultural and chemical options available, to deliver the desired levels of control.

Along with the potential for new chemical, cultural and biological controls, there is the need to better understand the lifecycle of leatherjackets – the larval stage of crane fly (various species of *Tipula*) – and the conditions under which they thrive.

Leatherjacket numbers appear to have increased significantly following the withdrawal of the highly effective and relatively low-cost chemical control option, chlorpyrifos, for both turf management and in the surrounding agricultural environment. At the same time as the background populations have been increasing, changes in weather patterns across Europe would appear to favour crane fly and leatherjacket activity.



Soils that warm up earlier in the spring and cool slower in the autumn could prolong larvae activity near the surface, for example.

Like most soil borne insect pests, including chafer grubs, the life cycle of leatherjackets typically incorporates a winter diapause, or state of suspended animation, when young larvae are no longer actively feeding.

But with soil temperatures typically remaining warmer for longer in the autumn (Fig 1 example in the UK), along with heating up earlier in the spring, the diapause period may be shorter, and in some instances not actually occur at all. The result is greater potential for extended activity and feeding - with associated damage - along with faster growth that can make pests too large to control.



Daily Central England temperature (°C) between 1772 and 2020

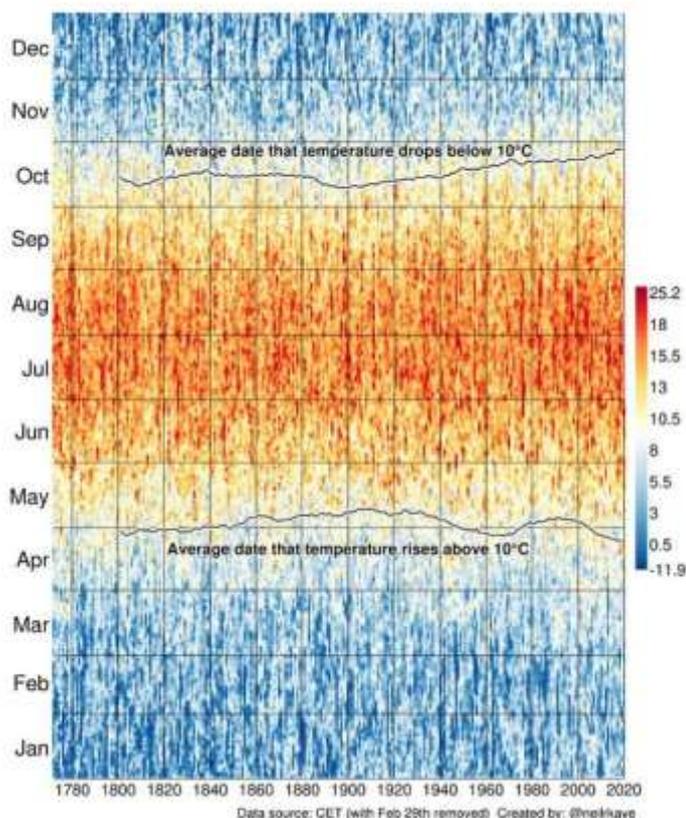


Fig 1. Long-term records show the average dates temperatures exceed 10°C are occurring earlier in the spring and later in the autumn, extending periods of pest activity.

That appears to be further compounded by longer periods with soil temperatures at a critical 2°C-4°C - where larvae are still very active, but when turf growth is slow. Any damage caused by larvae feeding is therefore slow to recover, resulting in serious damage to plant health and surface smoothness.

Adult crane fly would also appear to be emerging over a longer period, according to anecdotal greenkeepers' experience and Pest Tracker reports. Golf courses, and particularly the sand construction greens that are maintained at a permanently ideal moisture level, offer the perfect habitat for the insects' egg laying and larvae development.

Allied to that, the trend to greens' maintenance operations to regularly aerate surfaces, to reduce organic matter and improve playability, provides a readily accessible route for larvae to move up and down through the soil profile to the optimum temperature zones, but still quickly access the surface to feed, with the potential for more damaging activity at the surface.



All these factors require further research across Europe to understand the implications, and then interpretation of the complex interactions to create a strategy that offers the best solution for a specific location or country.

We have also seen in UK studies on golf courses that leatherjackets are quite mobile when surface conditions are cool and moist. Mild winters increase opportunities to emerge and relocate. Syngenta studies of larvae populations indicate they do appear quite adept at spreading themselves evenly across any given area – to give themselves the best availability to food source and minimise the risk of predation.

Inspection of affected green will typically find leatherjackets safely residing in aeration holes, just surfacing at night to feed on turf around the entrance – and leading to little pock marks that affect smoothness and ball roll. But you will rarely find more than one leatherjacket in any hole, and they will be fairly evenly spaced.

That also has implications for control strategies, since even if good control is achieved on a treated green, other leatherjackets may simply move in to take their place in what are ideal living conditions for the pest. The longer weather conditions remain warm into the winter, the greater the potential for movement and reinfestation.

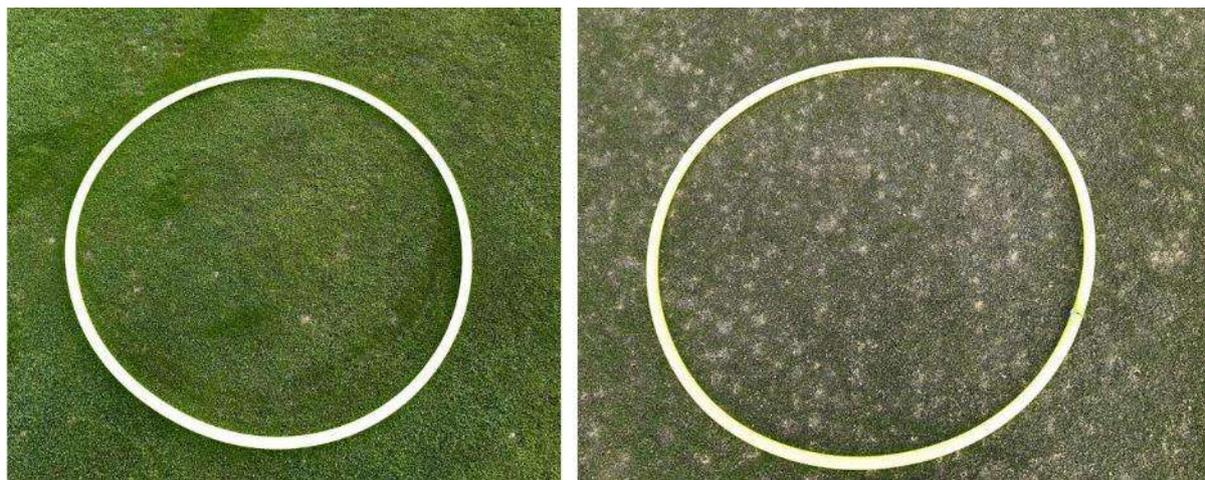


New control option

The sheer scale of the problem for turf management has seen the full approval for the insecticide Acelepryn (chlorantraniliprole) in both France and Portugal, along with an Emergency Authorisation issued in successive seasons for its use in the UK and Italy. The successful product is also used for soil pest management on turf surfaces in major markets around the world.

Now, a huge research initiative is underway to evaluate how best to time and target Acelepryn treatments, as well as integrate all control options to achieve the optimum long lasting results and counter the changing patterns of leatherjacket activity within turf management programmes.

Getting a better picture of where and when the larvae and the egg laying adults are active is vital in adopting the most effective integrated strategies in future.



In the UK, tools including on course monitoring and Pest Tracker reports have been studying activity from on-line reports from course managers for the past three years. In France, an exciting new Syngenta initiative, in partnership with the AGRÉF association of greenkeepers, has developed a pest monitoring tool involving 30 greenkeepers across the country to record the number of larvae they count in their greens every two weeks in a digital tool. The information is available to the whole greenkeeping and research community, to check the evolution of larvae stages in any location.

Pest Tracker

There is also evidence that pests are able to tailor emergence to seasonal conditions year-on-year, and longer term to climate change. Many pest predictions are based on soil temperatures and Growing Degree Day models. In the US, the Syngenta Weevil Track has become a key tool to tailor Acelepryn application timing to pest activity.

The data from PestTracker over the past two seasons shows that whilst total population recorded have been incredibly similar, numbers seen each individual week can be significantly different. That would appear to indicate, not unreasonably, that weather and soil conditions could be a factor in adult emergence – or at least their activity.



Whilst it does show the differences year on year, there is only marginal difference across the UK as to when the pests are been seen and, since GDD is extremely variable between locations, would tend to indicate that other forces, such as day length, rainfall or combination of factors are in play.



Fig 2. Heat maps of Pest Tracker reports for autumn crane fly activity in 2019 pinpoint areas of highest risk.

Pest Tracker results have already been extremely useful as picture of when and where pests are active (Fig 2.). With the capture of more results and data, particularly regular reporting from the same site including periods of no activity, and then when the first adults are seen, would be invaluable information to match to environmental conditions to develop of a soil pest emergence model for the UK.

However, developing GDD models to predict turf damage could be far more feasible, as it would be a measurement of the insects' development opportunity.

Turf models

The problem for turf is that most of the modelling for pest species change is for agricultural pests, under typical farming systems and the natural environment.

For example, entomological assessment would suggest that warmer temperatures and prolonged dry periods, resulting in baked-hard, drier soils, would be more inhospitable to leatherjackets as an agricultural pest. With turf surfaces, however, using irrigation and aeration and a permanently available food source, it artificially creates near perfect conditions for crane fly egg laying and leatherjacket development.

Pest modelling specialists have identified that some pests that target specific growth stages of a plant may experience mismatches between its life cycle and the host, thus reducing damaging effects. However, for turf pests where the environment is ever present, there is little downside from changing patterns of emergence, for example.

In fact, issues could potentially be exacerbated if beneficial natural predators do not adapt to emerge at the same time as the pests. Typically, any imbalances will resolve over time, but there is the potential for greater short-term issues.

Some ecologists had suggested that if temperatures rise it could have a negative impact on all insect populations, including pests. However, further detailed studies have highlighted likely changes are dependent on whether existing conditions are deemed optimal for individual species.

Not unreasonably, the research concluded that, if an insect is at its optimal point, or above, and temperatures rise, it would have a negative effect; but if it is currently below optimal then any increase in temperature would be beneficial and the pest problem exacerbated.

If we look specifically at the case of leatherjackets, for example, Syngenta colleagues report the pests are a serious problem in turf throughout France, from north to south, where temperatures are typically several degrees hotter. They reported that leatherjacket issues were especially bad on greens over winters with particularly warm conditions.

That would indicate that populations in more northern European climates, including Germany, Nordics and the UK, for example, could quite comfortably cope with current climate change predictions, and could potentially become worse.

The positive point is that whilst crane flies are mobile and could potentially migrate as weather conditions change, their life cycle is predominantly to lay eggs soon after emergence, staying within the close locality.

That tends to be why some courses suffer repeated infestations year after year, whilst others even locally may suffer little damage. It also suggests limited risk of movement of other crane fly species, of which there are many hundreds, into the UK in the short term.

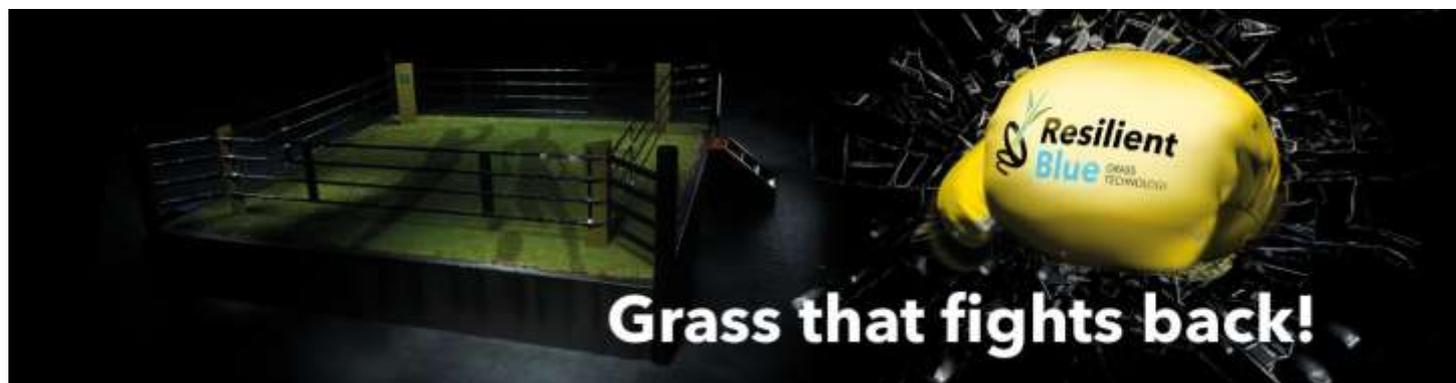
Longer term, the more understanding of the life-cycle and emergence patterns of leatherjackets and chafer grubs we can gain through Pest Tracker, the better we can utilise integrated control measures and Acelepryn timing to manage increasing issues caused by climate change.



Resilient Blue® grass technology copes with weather extremes

 **BARENBRUG**

Resilient Blue® wins Dutch Sport Accommodation Innovation Prize!



On 25 March, Resilient Blue® Grass Technology was declared winner of the 2021 Sports Accommodation Innovation Prize! The prize, which is presented annually, is a joint initiative by the Dutch Sport and Culture Technology Trade Association (BSNC), The Dutch Sport and Municipalities Association (Vereniging Sport en Gemeenten), the Dutch Olympic Committee* Dutch Sports Federation, and the Sport Accommodation Trade Fair (Vakbeurs Sportaccommodaties).

Extreme drought and heat have clearly taken their toll on golf course, sport fields and sod farms in recent summers. With a new grass technology, Barenbrug now has a solution for conditions like these. Resilient Blue® is the most tolerant and resilient cool season grass solution to heat and drought stress, keeping the turf green and dense for a long time, even in extreme weather situations.



Years of research

After years of research in all kind of conditions, Barenbrug launched Resilient Blue® last February during the first 'Barenbrug Online Event'. Hardly 3 months later it turns out to be a direct hit: awarded with the Sport Accommodation Innovation Prize, the most wanted technology for sod producers and by that hardly any seed available anymore for the coming season.

Jan van den Boom, Sales Lead Turf of Barenbrug declares: "We knew Resilient Blue® would have a big potential, because it really offers a solution people were waiting for. So, besides all research we have done to create this unique technology, we already scaled up the production for the needed varieties a few years ago to have sufficient now. But we are kind of surprised by the huge demand directly after the introduction. Now we hope for a good harvest this summer."

Sum of tolerance and recovery in extreme situations

The name Resilient Blue® stands for "resilient bluegrass", referring to the American name of poa pratensis: *Kentucky bluegrass*. Olaf Bos, technical specialist turf at Barenbrug Holland and closely involved in the development of the newest innovation explains: "For us, resilience means the sum of tolerance in and recovery from extreme situations. That is what makes the Resilient Blue® grass technology so unique: the adaption to stress situations and the quick recovery afterwards. It's a unique combination of some very special poa pratensis varieties with a special seed enhancement to give it the best start possible". Barenbrug is initially targeting on the sod, golf and sport market. Mixtures with Resilient Blue® technology can be customised for turf growers. Besides that, there will be two standard grass seed mixtures for sport pitches and golf courses: Resilient Blue Sport and Resilient Blue Golf. Over the next year, specific mixtures with Resilient Blue® grass technology will also become available for public green space and private gardens.

Less stress and diseases with less water and fertiliser

The development of Resilient Blue® was a response to the changing climate. Recent summers show that beside South and East Europe, also Central and West Europe suffer more and more from drought and heat. Mixtures with Resilient Blue® technology require less input in the form of water and fertiliser, which means better resistance to weather extremes. According to Barenbrug, the mixtures have four characteristic advantages. Tests on several locations have shown that Resilient Blue® maintains much denser grass cover in dry summers than ordinary poa pratensis and even better than tall fescue swards. This difference is clearly visible in Chart 1

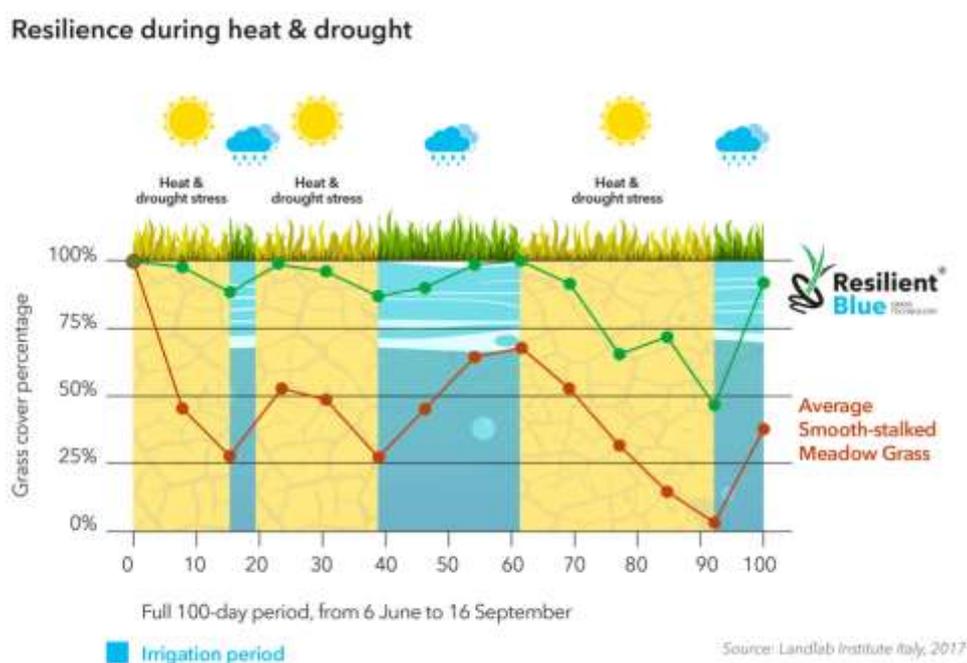


Chart 1: The difference in coverage between normal smooth meadow grass and Resilient Blue® during 3 stress periods in one season with no irrigation: better stress tolerance and quicker recovery after stress.

Furthermore, the grass recovers visibly faster after a period of stress as can be seen in Chart 1 and 2. Besides that, Resilient Blue® can also withstand a high amount of traffic especially when there is also RPR® grass technology (regenerating perennial ryegrass) in the mixture, which is standard for golf and sport. The last unique characteristic of mixtures with Resilient Blue® grass technology is the greater tolerance to diseases associated with the changing climate, such as grey leaf spot and summer patch.

Recovery during irrigation after a period of extreme stress

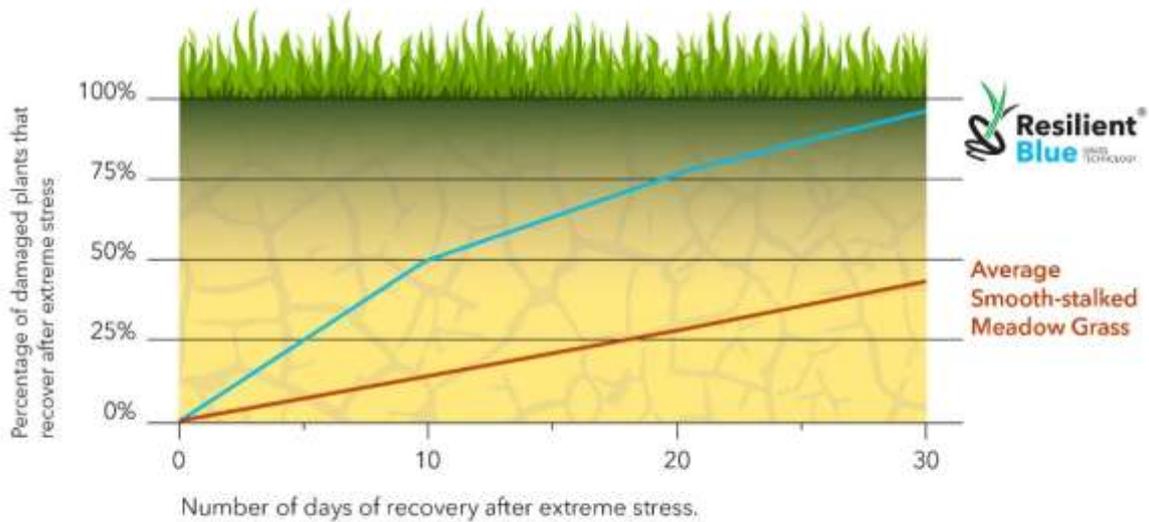


Chart 2: The recovery of the Resilient Blue® plants that are damaged by extreme situations, recover significantly faster compared to standard poa pratensis.



Picture 1. The technology has been subjected to many tests like in rain-out shelters with 6 weeks no irrigation (left: before, right: after 6 weeks) at all at very hot conditions (peaks over 35dgC).

No brainer for turf professionals

The new poa pratensis grass technology is also specially developed for turf professionals that need a resilient fundament of the sward. Bos explains: "With Resilient Blue, you don't need to irrigate as much, which leaves you with more water or more time to plan a good distribution on your area. These water savings mean you have less pressure on your planning. Above all, Resilient Blue is also made of the top quality poa pratensis variety according to the NTEP listing. The average turf professional can benefit greatly from this."

More information

You can find all information about the new Resilient Blue grass technology at:

<https://www.barenbrug.biz/resilient-blue>

Barenbrug created a 30 second video that tells it all:

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

Gray Leaf Spot disease in turf is increasingly being observed within our industry in recent years. Significant outbreaks of this disease on perennial ryegrass and tall fescue were mainly confined to southern regions of Europe but are now finding their way as far north as the United Kingdom. Gray Leaf Spot is more commonly seen in late summer and early autumn, and for stadium and golf turf managers its appearance can be devastating to the visual appearance and playing quality of the turf.



ICL Turfgrass selection - Nederlands

As a turf producer, you may question its impact on the growing of turf. The reality being that in an open field situation, the risk of seeing Gray Leaf Spot is greatly reduced. However, for many producers, turf will be used by sporting establishments. It therefore stands to reason, that the composition of the turf in terms of Gray Leaf Spot tolerant varieties will greatly assist end users in managing this disease. As well as tolerant turf varieties, the correct nutrition and water management are of great importance. For this reason, ICL wishes to share an example of an integrated stadium programme incorporating its turf seeds, fertilizers and wetting agents to help manage the disease.

You can find details of the full range of products used in this programme by visiting <https://icl-sf.com/global-en/explore/golf-courses-sportsfields-landscape/>

To provide a more in-depth background to the disease, ICL is pleased to provide the following link: <https://thegma.org.uk/news/gray-leaf-spot-perennial-ryegrass>

to an excellent article produced by the Grounds Management Association (GMA), and its contributing authors, Sabine Braitmaier, Dr. Deborah Cox & Dr. Kate Entwistle.

We hope you find the information useful as the sharing of good practise can only benefit all of us.

[Power point slides showing programme:](https://www.turfgrassociety.eu/news/gray-leaf-spot-stadia-programme-by-icl/)

<https://www.turfgrassociety.eu/news/gray-leaf-spot-stadia-programme-by-icl/>

4turf® – the star player in a glorious summer of European football



This is the summer of European football. It's also the summer of 4turf®, a vital component of the mixtures used in most of the stadiums taking part in this year's competition and a provider of the green colour that dominates TV screens.

400 million European football fans eager to see 4turf® score a colorful winner

This summer is all about football. For football fans across the continent it is a month of goals and drama set against the backdrop of green grass. When they switch on their TVs, fans expect to see Europe's leading players perform at their best, and the grass beneath their feet to look stunning. Fans and players want perfect pitches: healthy and uniformly green. The greener, the better.

Europe's top groundsmen know this too. Until the referee blows the whistle on the final game, their minds will be focused on one thing only: how to deliver the perfect experience of supreme playability and color. They are well aware that the eyes of 400 million fans are on them, watching from their TVs, on their mobile phones and on large screens at countless sports bars across Europe.

Although groundsmen are used to the challenge of growing healthy and uniformly green grass, the pressures are greater when an entire continent is watching. In Baku, St. Petersburg, Copenhagen, London and elsewhere, groundsmen will have been preparing for months.

Most European games to be played on 4turf®

The way to get that perfect green color is to choose the right grass. Most of the European stadiums showing on TV screens this summer contain pitches that have been established or over-sown with mixtures containing 4turf® (turf tetraploid perennial ryegrass) varieties from DLF. There's a good reason for this. On many of Europe's official recommended lists, 4turf® varieties are among the top performers for disease-tolerance. The high disease-tolerance of 4turf® varieties and their ability to quickly outgrow some diseases are two of the reasons why they maintain such a desirably uniform green color.

Our turf grass breeders have developed these perennial ryegrass varieties especially for sports pitches. Their characteristics – color, high disease-tolerance, stress-tolerance and fast establishment – make them ideal components of mixtures destined for Europe's top pitches. 4turf® varieties are fundamental to achieving the look that TV viewers expect.

Brilliant green color for an entire continent

At DLF, we test our varieties at many locations across Europe. As a result, 4turf® exhibits a wide range of geographical adaptability, and scores high for color at all sites and on all official lists. 4turf® varieties perform well across the continent from Baku in the east, to London in the west, to Copenhagen in the north and to Budapest in the south. Everywhere where grass color is a priority.

Better brown patch tolerance

4turf® performs especially well against brown patch, a disease that would reduce the visual appeal of a top-level stadium. New results from a brown patch tolerance screening involving diploid and tetraploid perennial ryegrass varieties inoculated with a European fungal strain, show that tetraploids are significantly more tolerant to brown patch than diploids. The screening took place at Maribohilleshög, in a state-of-the-art laboratory and was performed by Louise Holmquist, Ph.D. and plant pathologist with years of experience in performing inoculation tests with *Rhizoctonia*. Their results confirm that tetraploid varieties are in general highly disease-tolerant.



Sod production field. Right; sod mixture with 4turf®. Left; traditional mixture without 4turf®.

Sod production for top events

Sod has been used at several stadiums as a starting point to get the pitch ready for the European Championships. Some producers are specialized in sod for top-end stadiums with special design and construction techniques according to the customers need. Sod with pure diploid perennial ryegrass is demanded by some users, whereas others find it extremely important that the sod contains smooth stalked meadow grass. It is becoming more common to include DLF 4turf® varieties in the sod. 4turf® is the stress tolerant, fast establishing and indispensable component for quick repairs and season-long playability. However for everyone with a stake in the greenness of a pitch – footballers, football fans, TV crews and groundsmen – 4turf® can provide a safeguard for maintaining the visual expression of the pitch for the European Championships or elsewhere, where “keeping up appearances” is key.





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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."

