

ETP Turf Show Expo 2022

7-8th July 2022, in Pattensen, Germany

The whole ETP-team is looking very much forward to welcoming you, do not miss it!





Newsletter of the European Turfgrass Producers Association dedicated to the sod farming community

Spring Edition

Year
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ETP News



By Albrecht Knigge, ETP President

ETP turf Expo 2022: Registrations open!

Dear members,

The ETP Turf Show Expo will take place on **7-8th July 2022**, in Pattensen, Germany.

It will probably be one of the first expositions with live demos and many interesting innovative machines to improve turf production after a long time.

You can register and find all information here:

https://etp.evenito.site

We hope to see you in Germany, let's meet again!

The whole ETP-team is looking very much forward to welcoming you, Do not miss it!



ETP Turf Show Expo 2022

7-8th July 2022, in Pattensen, Germany

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RASEN MISSEN Sod production and soil erosion?

Deutscher Rollrasen Verband e.v.

Latest information from turfgrass research •

No.3+4-2021

- 1 -

Editing: Dr. Klaus Mueller-Beck

The production of turfgrass sods is carried out on agricultural farmland, and the removal of soil material with the turf roll is occasionally viewed critically. With an extensive field survey, the **German Sod Producers**Association DRV has initiated a "site assessment" in 2018.

Study Participants

Various specialized institutions were involved to collect the most important parameters for assessing the ecological impact of turf sod production on the soil system:

- Deutscher Rollrasenverband e.V. DRV, Client;
- Baumann Engineering Office (IBB), Munich:
 Laboratory investigation of soil and sod;
- University of Natural Resources and Applied Life Sciences (BOKU) Vienna, Priv. Doz. DI Dr. Gernot Bodner: investigation of root mass:
- Agroplus Consulting GmbH, Ingolstadt, W.
 Schönleben: Evaluation of the investigation results;
- 13 production farms with diverse site conditions.

Due to the involvement of different production farms, it was possible to record a wide range of site factors. For example, the altitude of the farms varied from 60 m NHN to 580 m NHN (mean sea level), the average precipitation ranged from 550 mm to 1300 mm, and the soil types represented were sand, loamy sand, sandy loam, loam, and silty loam.

Issues of field investigation

- How much soil (mass) is removed with the turf roll, when harvesting the turf sod?
- How much fresh root mass remains in the soil after harvesting?
- What is the humus potential of the fresh root mass remaining in the soil?

Study period

Complete growing cycle from sowing to harvesting of the sod. Sampling was done on two dates:

- "T1" = after sowing (within 7 days) small investigation;
- "T2" = during harvesting large investigation with turf samples.

Investigations were carried out for the standard rolled turf as thin sod.



RASEN VISSEN Sod production and soil erosion?

Deutscher Rollrasen Verband...

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Editing: Dr. Klaus Mueller-Beck

For the reproducibility of the data, a binding procedure for sampling and execution was agreed upon for all farms in a worksheet entitled:

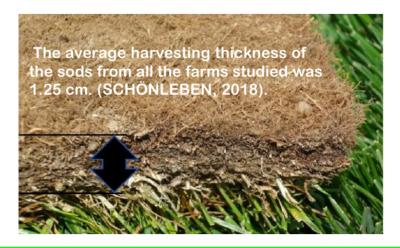
"Explanations and working instructions for sampling in the field".

Material and methods

All investigations were carried out on three turf rolls from current operations of 13 growers in different federal states.

- When determining the sod thickness, the leaf mass standing up was pressed down in the laboratory and thus the sod thickness was determined with soil, root mass and leaf mass at three measuring points, so that the strongest and weakest point could be recorded in each case.
- On average for all farms, the average sod thickness varied from a minimum of 1.06 cm to a maximum of 1.55 cm, depending on soil type and moisture.

The average sod thickness of all farms was 1.25 cm.



Results soil material

On the average of the samples from all farms, the soil removal with a sod is 7463 g/m²

- Min. = 4018 g/m²
- Max. = 10752 g/m²
- This corresponds to a removal rate of 4.59 mm/m², or 4.59 l/m². This includes the organic content with 6.01 %.
- This results in 467 g/m² of organic matter and a mineral content of 6995 g/m².

Related to the total volume of 4.59 l/m², with 6.01 % organic matter,

 this corresponds to a volume of 0.28 l/m² of organic matter (OM).

Source: SCHÖNLEBEN, W., 2018: Investigation on turfgrass sods - results, DRV Field Study Soil Removal.

RASEN VISSEN Sod production and soil erosion?



Latest information from turfgrass research • No.3+4-2021

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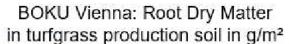
Editing: Dr. Klaus Mueller-Beck

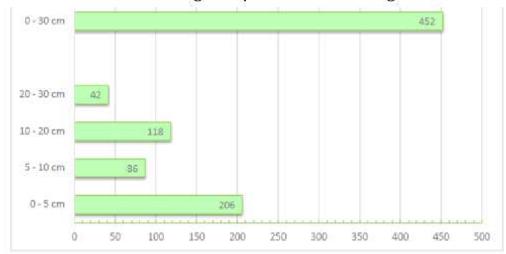
Root dry matter analysis (BOKU Vienna)

At the harvesting date (T2), three soil cores were taken from each of the depths 0 - 5 cm, 5 -10 cm, 10 - 20 cm, and 20 - 30 cm. The root analysis was carried out in the BOKU laboratory. For this purpose, the samples were washed out and the cleaned "vital" turf roots were recorded as dry matter.

Results for root mass

In the upper soil horizon (0 - 5 cm) the largest root mass is found with an average of 206 g/m² up to a maximum of 345 g/m². For the cultivated horizon up to 30 cm, the average root dry mass is 452 g/m². Related to the total harvested area of turf production, an average of 4520 kg/ha of root dry mass thus remains in the cultivated horizon (< 30 cm) after 1.5 years.





Deutscher Rollrasen Verhand e. V.

Graph 1: Average of root dry matter (g/m²) of all investigated turf production farms (13) in the corresponding soil horizons (0 -30 cm), BOKU Vienna.

Source: SCHÖNLEBEN, W., 2018: Investigation on turfgrass sods results, DRV Field Study Soil Removal.



RASENIUSSEN

Sod production and soil erosion?

Deutscher Rollrasen Verband...

Latest information from turfgrass research • No.3+4-2021

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Editing: Dr. Klaus Mueller-Beck

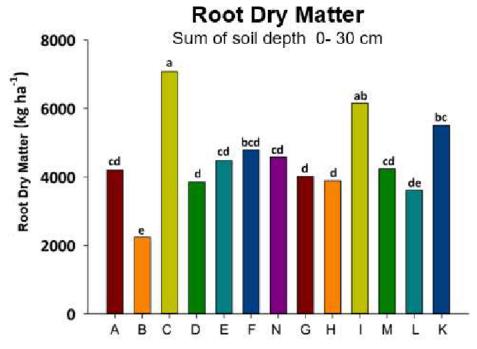
The estimation of humus potential is done by conversion to organic carbon C_{org} . For the humus equivalent the conversion factor 1.7243 applies to C_{org} .

Result humus potential

With the determined average root dry mass of 452 g/m² in the soil horizon of 0 - 30 cm, a carbon content of 203.20 g $C_{org.}/m^2$, or 2,032 kg $C_{org.}/ha$, is calculated with a C-factor of 45 %.

This results in a possible humus equivalent

- of 349.51 g/m²
- or 3,495 kg/ha.



Graph 2: Spread of root dry mass of all investigated turf sod farms (13) for the entire soil horizon 0 -30 cm (source: BOKU, Vienna).

Source: SCHÖNLEBEN, W., 2018: Investigation on turfgrass sods - results, DRV Field Study Soil Removal.



RASEN MISSEN Sod production and soil erosion?



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The balance of the study at 13 locations in Germany provide a snapshot of the turf production process. In order to optimize the objectives with regard to soil erosion and humus input, accompanying individual investigations in the farms will be useful in the future.

Conclusions

During the harvest of turf sods, a turf roll with root network and adhering mineral/organic soil particles is transported away. For the fate of the organic matter below the cut horizon, two operational groups emerge from the DRV investigation:

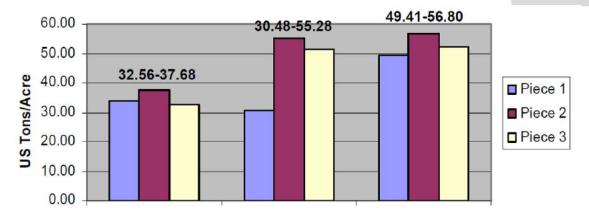
- 1. Farms with an increase in organic matter at date T2 compared to T1.
- 2. Farms with a reduction in organic matter at date T2 compared to T1.

Sod Farm C

Variability of soil loss per sod harvest:

DRV study, 2018:

- 40 to 107 t/haCARR, 1998:
- 77 to 100 t/ha
 SKOGLEY, 1978:
- 60 to 105 t/ha



Supplement to graph 3:

Conversion to t/ha
Farm C = 72 - 85 t/ha
Farm B = 67 - 125 t/ha
Farm D = 110 - 127 t/ha

Graph 3: Variable mineral soil loss per turf sod harvest, USA.

Sod Farm B

Source: MILLAR, D., 2007: Evaluating the Effects of Sod Farming on Soil Quality. Natural Resources Sciences University of Rhode Island

Sod Farm D

RASEN MISSEN Sod production and soil erosion?

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The **results of the DRV study show** that a positive contribution to soil fertility can be expected when evaluating turf sod production on agricultural farmland, especially with regard to the **increase of "soil organic matter"** (Soil OM). However, the determined data are influenced by site-specific factors, so that a generalization is hardly possible.

Soil organic matter (Soil OM)

OM is of particular importance for soil fertility due to its properties of binding nutrients and increasing the water storage capacity of the soil. In addition, OM contributes to erosion control due to its structure-forming and aggregate-stabilizing properties.

In terms of the Federal Soil Protection Act, the remaining root mass of the turf sod after harvesting provides a sufficient supply of organic matter to maintain soil humus.

Turfgrass provides ecosystem service

After installation at the new site, the ecological services of the turfgrass take full effect. In addition to direct erosion control on the surface, other criteria such as oxygen production, cooling effects, dust binding or the reduction of CO2 in the air through photosynthesis and fixing of carbon in the turf soil provide a positive effect.

Contribution to the environment

In terms of carbon storage in soils, OM makes an important contribution in the global C cycle.

According to BLUME et al. (2010), about 80 % of the terrestrial organic carbon stocks participating in the active carbon cycle are bound in the soil.

Source: BLUME et al., 2010: Scheffer/ Schachtschabel, Textbook of Soil Science.





Vanmac news

Vanmac Turf Equipment gets its own business accommodation

In the last December issue of the ETP newsletter, we already informed you about the organisational changes within our company. About the diversification of the TRILO and the Vanmac entities. This has now resulted in the physical separation of the two companies.

Vanmac and TRILO are often mentioned in the same breath. And until now, they were also housed in one business accommodation. However, due to the enormous development of both companies in recent years, it turned out to be necessary to make a clear separation between the two entities. For this reason, in the last week of 2021, Vanmac hired its own business headquarter. On the Space Shuttle in Amersfoort, just a stone's throw away from the current premises on the Astronaut, an existing building with offices and warehouse (over 4200 m2) are being converted for Vanmac Turf Equipment.

TRILO Smart Industries

For many years, the activities of both companies could be combined under one roof. However, due to the great success of both companies it is now time for each branch to focus on its own specific products, markets, objectives and ambitions. On the one hand, we have the activities for TRILO, the brand of our own machines. The product that started it all (some 60 years ago). From the first series of vacuum sweepers developed in the 1970s, to today's huge range of innovative leaf blowers and vacuum sweepers, verticutting units, debris loaders, mowers and hi-volume cut & collect vacuum sweepers for many market areas all over the world. With even a second factory in Hanoi, Vietnam.

Vanmac Turf Equipment

On the other hand, the focus is just as much on Vanmac Turf Equipment. The trading house that, in addition to our own TRILO machines, also trades many other brands of machines (like Progressive, Brouwer Kesmac, Rota Dairon, Eco Clipper, TurfTick, Magnum) for the turf industry in over 46 countries. At the same time, Vanmac takes care of the entire distribution, including service and the supply of accessories and spare parts.

Vanmac Group - umbrella organisation

The fact that both entities now have separate accommodations, certainly does not mean that the companies will continue to operate separately. Many business processes will be centrally managed, such as Finance, Marketing, R&D and ICT. The umbrella organisation, the Vanmac Group, will focus its activities and communication on new business, innovation and on partnerships with relevant companies. This will pave the way for the subsidiaries to realise their unprecedented ambitions.

Goal Driven Optimisation

The new accommodation means a major step in the further development of our organisation. It allows our teams to focus even better on customer needs and on further optimising our machines and services. We look forward to being able to serve our dealers, customers and business partners even better in the future.



Vanmac news

Contact details

As from mid-January 2022, our new address is:

Vanmac Turf Equipment Spaceshuttle 5-7 3824 ML Amersfoort +31 (0)33-4564 550



Direct telephone numbers of our employees remain unchanged.



The fact that we are so busy with the many developments within our organization does not mean that we are blind to the many challenges in the world. Of course, we are sincerely committed to our customers in Ukraine and Russia. We are deeply shocked by the events taking place and express our sincere support, condolences and solidarity to our customers and their families and friends.

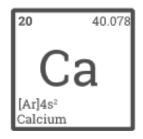
- Vanmac Turf Equipment

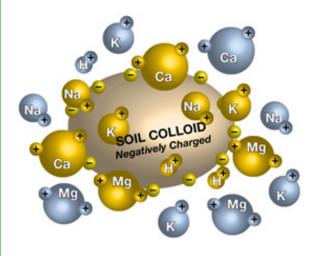


Aqua Aid news

THE ROLE OF CALCIUM IN THE SOIL

Calcium has two major effects in the soil. Firstly, Calcium works as a bonding agent in the aggregation of soil particles, in which it helps to bind organic and inorganic substances. This is important for the development of a good soil structure. Secondly, it acts as a nutrient filler, to maintain balance amongst nutrients and occupy space which otherwise would be taken up by acidic elements. The high molecular weight and two electrons are the main reasons for these effects.





The process of cationic exchange begins when water and basic cations (Ca, Mg, K, Na) meet the soil colloid. Based on the soil colloids degree of cation affinity, Calcium (Ca++) will attach to the soil colloid releasing the smaller cations. The released cations (Mg++, Na+, K+, H+) are solubilized in the soil solution and made available to the plant or removed from the soil profile.

As hydrogen is released from the soil colloid into the soil solution, acidity is reduced and pH is raised.

Cations are held by negatively charged particles of clay and humus called colloids. Colloids consist of thin, flat plates and considering their size, they have a proportionally large surface area. Therefore, they are capable of holding enormous quantities of cations. They act as a storehouse of nutrients for plant roots.

The soil colloid has degrees of affinity for various basic cations. This bonding increases with larger atomic weight, ion size and amount of charge. The percentage saturation for each of the cations will usually be within the following ranges for optimum performance.

Exchangeable cations are those absorbed on the colloid.

Water soluble cations are those ionized in the soil solution.

CEC is determined by the number of negative sites on the colloids.

Element	Ideal percentage
Calcium (Ca)	60 - 70 %
Magnesium (M	(1g) 10 - 18 %
Potassium (K)	3 - 6 %
Sodium (Na)	2 - 5 %
Hydrogen (H)	10 - 15 %

VerdeCal G is specifically designed to have an impact on the CEC, either to correct the CEC to the appropriate levels or to maintain the CEC on the correct levels.



Aqua Aid news

After application of VerdeCal G, the total CEC is raised and balance within the cations is restored. The goal is to raise the overall CEC within the physical boundaries of the soil structure, the ratio between sand, silt and clay. The higher the CEC, the more efficient the soils fertility can be used.

VerdeCal G is capable of making the Calcium readily available for the plant; independent research has shown significant increases in the Calcium levels both in the soil as well as inside the plant. Results show an increase in the plant after just 9 days. The reason why the calcium in VerdeCal G is so quickly available, is due to the secret ingredient: thCaTM. This is a combination of plant extracts which are formed into trihydroxycarboxylic acid.

This acid oxidizes the Calcium molecules in VerdeCal G, making it available to the plant and soil. The thCaTM also oxidizes currently unavailable Calcium in the soil, therefore adjusting the CEC even more. In addition, the Calcium will also be available over a longer period of time.

The formulation VerdeCal G contains very high concentrations of readily available Calcium. Due to the combination of the thCa and a low dose of a polyol wetting agent, the application rate for VerdeCal G is very low compared to conventional Calcium products. Where conventional Calcium products have application rates ranging from 1.000 to 2.000 kg/Ha, VerdeCal G has an application rate of 250 to 500 kg/Ha. This is only 25 % of the rate of a conventional calcium product.

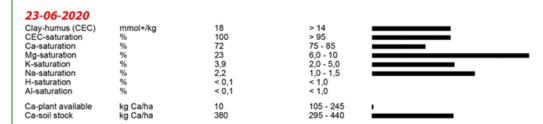
For regular maintenance, once the CEC levels are within the required range, the application rate is 250 kg/Ha. When the CEC levels are unbalanced, the application advice is 500 kg/Ha with a second application after 30 days in case the CEC percentages are not within the desired range.

The composition of VerdeCal G is 95 % Calcium Sulfate, due to the acidic effect of the Sulfate, VerdeCal G will not have an impact on the pH, unless the cations are very unbalanced on the CEC. In this case, VerdeCal G will even lower the pH of the soil. VerdeCal G also contains a 1 % Aqua-Aid polyol wetting agent. This wetting agent attributes to the high solubility of the product. After application, the product needs an irrigation cycle, VerdeCal G will dissolve directly and become available for plant and soil.

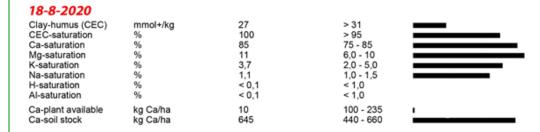


Aqua Aid news

The following example shows the impact of VerdeCal G on the CEC and corresponding levels of the cations. Just before the application of 250 kg/Ha, a soil paste extract was taken on the 23rd of June 2020. The analysis shows a low CEC value at 18 mmol+/kg, the CEC saturation is high at 100 % with 72 % Calcium on the CEC. The level of Magnesium stands out, at 23 % which is considered too high.



The goal of VerdeCal G is to both raise the total CEC and to increase the Calcium percentage on the CEC. When the Calcium level is increased, the other levels will decrease – in this case Magnesium.



The second analysis was done almost two months later, this shows the results of a VerdeCal G application at the normal application rate of 250 kg/Ha.

Total CEC was increased from 18 to 27 mmol+/kg, which is an increase of 50 %. The Calcium presence in the CEC was raised from 75 % to 85 %, dropping the Magnesium level from 23 % to 11 %. This is within the ideal percentage range for the CEC.

The conclusion from these soil analyses is that VerdeCal G is able to raise the general soil structure of the root zone by increasing the CEC and correcting the percentages of the different cations present in the CEC.



Brown patch disease – Protect your turf by choice, not by chance

A major concern, particularly for the football industry, is the rise in reported instances of brown patch. DLF can now offer mixtures with the most brown patch tolerant grasses for sports fields. We have screened our portfolio of ryegrasses for brown patch tolerance. Once again, the results show that DLF's 4turf® varieties have a higher natural disease tolerance.

As climate change brings more hot and humid weather, the severity and geographic range of fungal diseases are increasing. We experience new diseases where we have not seen them before, known diseases occur more often and the attacks become more severe. That can compromise the quality even on the best managed pitch.

Most groundsmen are trying to deliver the best playing quality and the best visual appearance on their stadium and trainings grounds. However this type of grass is pushed to the limit due to challenging growth conditions and lots of wear. Anything that can damage the quality of the pitch is therefore a threat. In that context fungal diseases are something that groundsmen and turf growers do not want.

Top football around Europe is played all year round except for a short period over the summer. During the short match-free summer period, renovation of stadiums and training grounds are often carried out by sowing new grass. The pitch renovation is a crucial point for the groundsmen, as they want their pitch to establish quickly. In this renovation period conditions might be hot and humid, which promote the development of fungal diseases. Groundsmen in Europe are experiencing disease outbreaks during the summer renovation. One of the diseases that are causing problems is brown patch, which in worst cases can ruin the entire pitch and postpone the playing season.



4turf® - The sustainable turf solution



Brown patch is a turfgrass foliar disease caused by Rhizoctonia spp. The fungus is most devastating to perennial ryegrass, bentgrass and tall fescue but all cool-season turfgrasses are susceptible to potential attack by the fungus. Attacks are often triggered by hot, humid conditions. An increase in cases is identified on plants that are moist and have been over-stimulated with nitrogen fertilisers.

Furthermore, disease control has become a greater challenge for many groundsmen as they seek to reduce pesticide use due to legislation. It is therefore important for groundsmen to be able to choose grasses with the highest tolerance to turf diseases.

As a seed supplier focused on environmental sustainability, DLF are obliged to take the disease threats seriously and come up with solutions that provide our customers with the most brown patch tolerant varieties in order to give them peace of mind during summer renovation and reduce reliance on fungicides. Especially because this disease is not evaluated in official trials in Europe.

DLF has been working on a screening program for brown patch for the last two years in order to provide the most brown patch tolerant varieties to customers dealing with this disease. The first screening was on perennial ryegrass, the staple species for football mixtures, because of its hard-wearing nature, tolerance of a variety of soil types and rapid germination and establishment. The screening included diploid perennial ryegrass varieties and the whole portfolio of our 4turf® varieties. Additionally the screening was performed with fungal isolates originating from a disease outbreak on a high-end football pitch in Europe.



High disease-tolerance



Low disease-tolerance



Trials have been undertaken at DLF Beet Seed research facility in Landskrona, Sweden. DLF Beet Seed has a research facility specialising in fungal testing and years of knowledge and experience in the area of Rhizoctonia fungi. By conducting trials in the lab, we were able to ensure that all the grasses were inoculated at the same time, with the same amount of fungal inoculum and at a time when the grass is predicted to be most susceptible.

We were able to determine, with very high confidence, that there was a significant difference between the diploid and 4turf® varieties when it comes to brown patch tolerance. The 4turf® varieties demonstrated the best tolerance to brown patch which correlates with the results we've seen in other disease trials where 4turf® species have outperformed traditional diploids. Even though 4turf® already have demonstrated the highest tolerance to red thread and fusarium in European turf trials, it was great to see that there were a few outstanding diploid DLF varieties that also demonstrated good tolerance to brown patch. That means that we can now provide mixtures with our top performing and most resilient diploids and 4turf® varieties with improved tolerance to brown patch.

DLF 4turf® tetraploid perennial ryegrasses have a larger seed which helps them establish quickly, they produce a larger root system which helps to strengthen turf and significantly improves drought tolerance, and this ensures a healthy colour through the spring and summer. The additional natural disease tolerance of 4turf® does not only makes the maintenance of the turf much easier, it can significantly reduce your input costs by reducing the need for chemicals and fertiliser. With input costs rising rapidly, there has never been a better time to make the switch to 4turf®, the environmentally sustainable choice.



Inoculation with Rhizoctonia (Brown patch) - 6 replicates of each perennial ryegrass variety



Van Vuuren news

Van Vuuren works for you

Montfoort, NL - Turf growers worldwide face many challenges every day to reach optimal results under any circumstance. To have time to meet those challenges, they need to rely on machines that produce whenever they want to, are easy to maintain and user-friendly. Van Vuuren has been the leading supplier of machinery for the turf industry since 1988. We understand the challenges of our customers as our customer has been our focus from day one. We consider our customers our partners. Van Vuuren works for you!

Optimizing the supply chain

As some of you may know, we have been working hard to increase production as of last year. To scale up production, we have optimized our supply chain. We have moved into a new production location in the Netherlands, implemented a new stock and ordering system and outsourced the supply to several local parties. In the first instance, this was done to facilitate growth. However, this process is certainly beneficial at this time, as our production in Ukraine cannot run at full capacity.

We stand with Ukraine

The current situation in Ukraine touches us as Van Vuuren Machines BV personally. We are confronted with the fact that our family and friends in Ukraine cannot live a free and carefree life anymore. Something that until recently was taken for granted. We try to support them in every way we can, but the situation is complicated and difficult.





Van Vuuren news

Partner world wide

We have supported many new and existing customers in recent months with installing new Turf Tick sod harvesters. For example our customer in Argentina is very happy with its new Turf Tick 1016, which can do slab and rolls. Also our new customer in Morocco and Chili bought a Turf Tick 1016. Our customer in the Netherlands received Turf Tick universal stacker number 3 this spring, but we also delivered one to Lithuania. All happy with both the easy of use, the reliability and the low maintenance cost.



Speeding up harvesting

Van Vuuren works together with turf growers to get the best results for harvesting sod and make working easier. Improvement projects to increase the speed of our machines are ongoing with several customers and partners. Further developments are in process to improve the lives of our customers on a daily basis. We are very excited to show our different capacity improvement and new machines at the field day of the ETP in Hannover on July 7th. Looking forward to meeting you there.



European Turfgrass Producers Association



Europea Turfgrass Producers

Founded: 24/11/2014 in Pisa ITALY

Legal address: Via della Leccia 18, - 57128 Livorno - ITALY

Fiscal code: (IT) 92123490499
Email: info@turfgrassproducers.eu
WWW: www.turfgrassproducers.eu



Albrecht Knigge

ETP President - CEO Rasenland, Germany

Albrecht Knigge grew up on an arable estate near Hanover, Germany. After graduating at Seale Hayne, University of Plymouth in England he joined his fathers newly started turf enterprise in 1996. Since then Albrecht has developed the business and taken the position of Owner/Director and set up further turf farms under the Brand name of "Rasenland". He was a founding member and the first President of the German Turfgrass Association. He is married to Caroline, they have three children and in his free time he enjoys microlighting.



Stamatis Chatzidavid

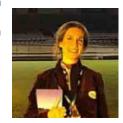
ETP Board member

Born in Kos island-Greece in 1977. After his degree in Agricultural Science at the University of Perugia (Italy), he turned back in his homeland starting his experience with the turf world. In 2007 he began his own sod production. His farm production is focused in warm season grasses.



Michele Bindi

ETP Board Member - Owner and Director of Bindi farms in Italy



Maria Cremades

Board Member - Owner and Director of Tapiz Verde farms in Spain.



Christiaan Arends

Board Member – Head of Sales and Marketing at Barenbrug

He is active in the turf industry since 2000. He has worked in both USA and Europe for Barenbrug.



Peter van Mispelaar

Board Member – Owner and sales Director at Vanmac

As a mechanical engineer graduated from the University of Amersfoort. And first class mechanic in agricultural machinery graduated on the University of Houten. I have skills and knowledge essential in grass management. Born on a dairy farm, with 25 year experience in grass machinery engineering, grass management on dairy farms, turf farms and airports.



Per Fimmerstad

Board Member – Owner and manager of Malaturf farms in Sweden



Stephen Payne

Board Member

Grew up and started working on the family turf farm Paynes Turf in 1998 and became a partner in the family business in 2004, along with my late father and brother. Having a great passion for turf production and always interested in new ideas and taking the company forward. My other passion is flying and when I can I like to fly to



Rafael Castro

Board Member – CEO Novogreen Turf – Spain

Graduate in Economics and Business Administration, he started his professional career as auditor. In 1988 he took over the Financial Direction of Valderrama Golf Club. Today, Rafael is the CEO of Novogreen and one of the major shareholders of the Company, founded in 2005, and the leading turfgrass producer in Spain.

European Turfgrass Producers Association



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Edited by ETP Office, $\underline{info@turfgrassproducers.eu}$

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