



Grass catalogue

Passion for grass

 **BARENBRUG**

Great in Grass

BARRENBRUG

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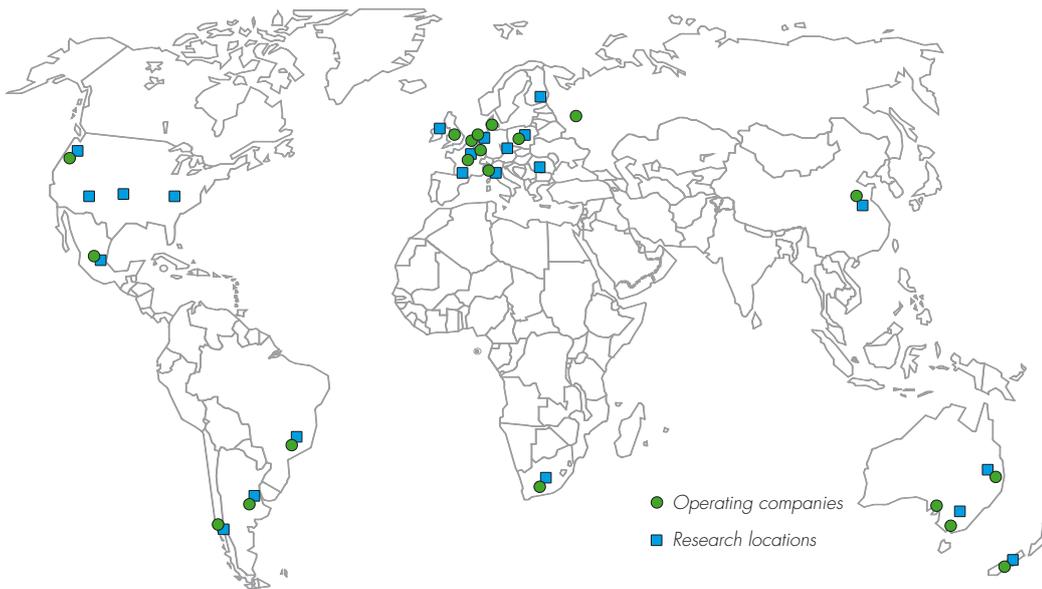
Passion for Grass

We are the global leader in seeds for turf grass, forage grass and legumes. With our international focus, we offer local, sustainable solutions with added value to end-users around the world. We offer continuity to our customers, suppliers and shareholders while creating an inspiring and rewarding environment for our employees. As an innovative family-owned company, we focus on Research & Development and the successful marketing of innovative products. We aim to further strengthen our position in existing markets and use this strong foundation to enter new markets.

Barenbrug

Passion for Grass

We have a passion for grass that we share with our customers and growers; this is something that four generations of the Barenbrug family have shared through to the present day. We have achieved our position in the grass seed market not just by putting our craftsmanship into practice; it is a role that we have built up and cultivated over the years. The basis for our success is captured in five core values: Innovation, Partnership, International, Quality and Marketing.



Research & Development



The success of your profession has everything to do with quality. Our profession is plant breeding: selecting and developing plants for various applications, and we have specialised in grass. Barenbrug spends a lot of time and effort on the quality of turf grass. We have introduced unique systems to ensure that our quality product is of the highest standards. All seed produced under our own supervision is carefully tested at all stages of the production process.

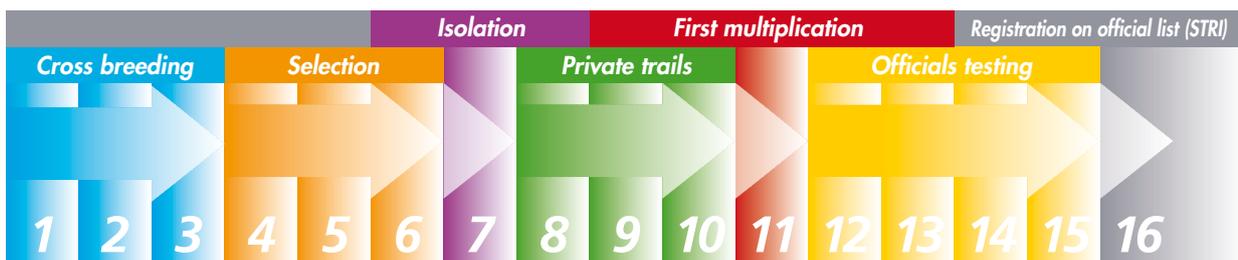
Research

It takes around 15 years of breeding to develop a new variety, which means that breeding started today will only be available from 2024. We spend a lot of time listening to our customers to make sure that we can meet their future requirements. This is how we are now able to offer unique species such as Barkoel (*Koeleria macrantha*) and Barcampsia (*Descampsia cespitosa*). By listening to our customers 20 years ago who were asking for better performance in terms of low maintenance and environmental restrictions such as shade and drought.

Development

The breeding of new species and cultivars plays a critical role in our solution strategy, but looking deeper into existing varieties, so called development, is equally important, searching for key characteristics to offer practical solutions for today's priorities. Characteristics such as germination temperatures, cold or hot temperature growth and disease tolerance are becoming even more critical; there can be significant positive or negative effects in variety performance when combined in a mixture, as demonstrated by our extensive trials programme.

Turf is a society of many plants that are continuously in competition and cooperation with each other, while also being influenced by environmental pressure and heavy use. In many European countries varieties are rarely used as a monoculture but are more commonly used either in blends of one species or in mixtures of different species to ensure quality performance and aesthetics. For many years Barenbrug has been focussing on both breeding high quality varieties and applying them in the best performing mixtures after testing in several local development trials.



Focus on knowledge and quality

Grass or artificial turf?

The choice isn't as hard as it seems



If you want to invest in laying or renovating a sports field, it's probably the most important question you will consider. Our society is taking more and more concrete steps towards a sustainable world. We want a green and clean earth that is, and remains, livable for future generations.

Local councils and sports clubs are under increasing pressure to get the most out of their lawns and fields while keeping maintenance and costs as low as possible. That is why many of them have been convinced by the promises made by artificial turf companies and have chosen artificial turf over real grass, as it would provide more playing hours with less maintenance and lower costs.

Of course both have their advantages, and there are innumerable factors to consider. The choice between real grass and artificial turf may therefore seem like a difficult decision, but in practice it is not. As the voice of the European grass seed industry, the ESA (*European Seed Association*) is strongly convinced that real grass is still the best choice, and that natural turf should be chosen whenever and wherever possible.

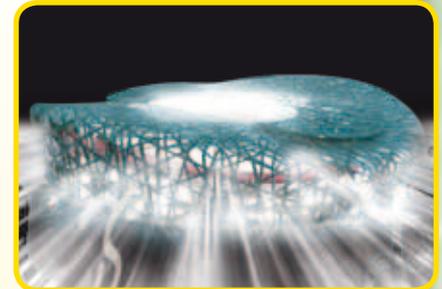
The Barenbrug grass breeders have not been resting on their laurels in recent years. We have developed various new and innovative natural grass solutions for playing fields. In 1975, a sports field could handle an average of 250 hours of playing time per year. Thanks to selective breeding, sports fields can now be sown with a mixture that allows 450 hours of playing time on natural grass.



A green and clean earth that is, and remains, livable for future generations.

The growers have also succeeded in extending grass's growing season. There are varieties available that begin to grow very quickly after the winter and continue growing long into the autumn. This results in less damage in the winter and an improved winter colour.

Natural grass is still always used at major events. Take the London and Beijing Olympics, or football events like the European and World



Championships. These events used high-quality turf from Barenbrug. So major organizations clearly have their reasons for using natural grass rather than artificial turf.

When properly maintained, natural grass is a sustainable, environmentally-friendly and CO₂-friendly product. A football field removes a great amount of CO₂ from the air each year. These are outcomes that are very important for groundsmen and policy-makers in the reasoning and decision-making involved in choosing between artificial turf and natural grass. Further

opportunities to minimise the environmental impact of a grass sports field are presented in its maintenance.

Environmental consequences of artificial turf

When considering the environment, natural grass has huge advantages over artificial turf. What are the environmental effects of artificial turf?

Waste and recycling

An artificial turf playing field loses around six tonnes of material (*rubber granules and sand*) annually, simply by being played on. Little is known about where this material goes and the effects it may have on the environment and on people's health. Research shows that renovating an artificial turf playing field creates 250 tonnes of waste. This waste contains many environmentally harmful substances.

Health and safety aspects of artificial turf

Health and safety aspects also need to be considered when laying a new field. Research shows that natural grass absorbs heat much better than artificial turf does. In addition, heat reflection from artificial turf is a real danger for players, particularly in hot countries such as those in Africa.

Natural grass is sustainable and is better for the environment than artificial turf. The selective breeding of grass varieties and mixtures has considerably increased the amount of play the grass can withstand. This means that the turf requires less maintenance, which is very attractive from a cost point of view. So there are plenty of arguments for the advantages of natural grass.

Regardless which sport is played on the field, at professional or amateur level, and whether it is used often or rarely, Barenbrug has the best grass seeds for natural turf. The natural solution scores well on all points: environmental, financial, sustainability and safety. Both players and spectators usually prefer natural grass to artificial turf.

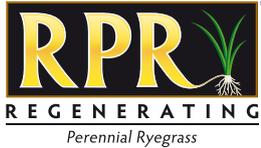
Ask a football team which surface they prefer to play on. The majority will reply that they prefer to play on a lovely natural turf field.

**The majority will
reply that they
prefer to play on a
lovely natural turf
field.**

RPR - Regenerating Perennial Ryegrass

RPR technology inside!

**Revolutionary technology:
regenerating and highest wear
tolerance!**



RPR is a self-regenerating perennial ryegrass building determinate stolons. RPR is the first perennial ryegrass having this particular

characteristic. RPR stands up to heavy traffic while keeping its good looks. As a creeping perennial ryegrass, RPR outperforms traditional perennial ryegrass resulting in a regenerating perennial ryegrass with the highest wear tolerance: perfectly suited for sports purposes.



Strong as iron

Determinate stolons, sometimes called "runners," are growth shoots emerging from auxiliary buds at the base of each plant. When an RPR plant gets room when turf is damaged, determinate stolons will grow horizontally into the empty area and develop roots at its internodes. In fact RPR gives a natural network of stolons, like a kind of netting. This gives RPR the highest wear tolerance. Instead of separate plants, like traditional perennial ryegrass, each RPR plant connects to other plants and into the top layer of the soil.

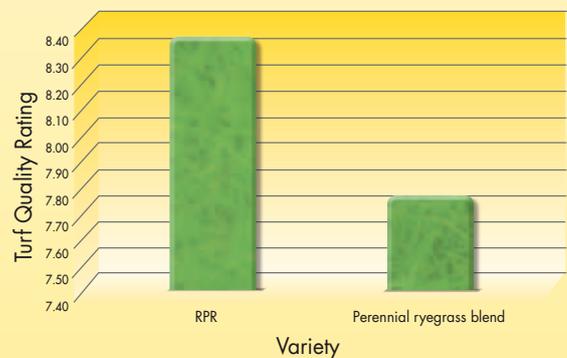


This picture shows the determinate stolons rooting down in RPR.

The best of two worlds

RPR brings strength and speed together in a single species. This has the advantage that all characteristics within the mixture are used at the same time. The grass plants quickly germinate and can be intensively used after the establishment of a dense sward. Traditionally, strong species like smooth stalked meadow grass (*poa pratensis*) germinate slower than perennial ryegrass (*lolium perenne*). In order to compensate this in many turf grass mixtures smooth stalked meadow grass is combined with a faster perennial ryegrass. Despite the fast germination and establishment in these mixtures the wear tolerance is insufficient. RPR solves this issue by combining firmness and strength with speed of establishment and regeneration. In other words: the best of two worlds.

INTENSE TRAFFIC TOLERANCE - OHIO STATE UNIVERSITY



The graph above shows the average of the two RPR varieties compared with a perennial ryegrass blend after three days of intense traffic. Recorded in September 2008. Data from The Ohio State University, P.J. Sherratt, John R. Street and A. Drake.

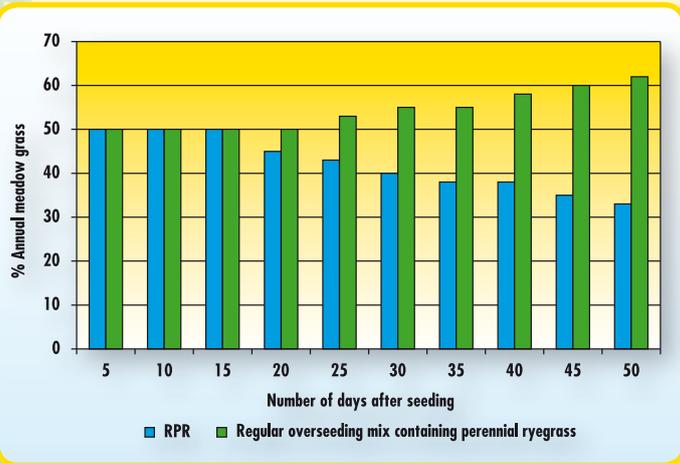
A year round dense sward

The following table shows the difference in effective growth between the new Bar Intensive RPR mix and Bar Fairway (containing smooth stalked meadow grass). The RPR leads to earlier spring growth, resulting in golf courses that can be used earlier in the year too.

| Bar Intensive RPR | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Bar Fairway | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

Preventing annual meadow grass

RPR is as strong as smooth stalked meadow grass but establishes faster. This reduces the risk of the ingress of the undesired annual meadow grass (*poa annua*) in your tee or fairway. And the advantage of this is a denser, better-rooting sward that needs less fertilisers and water. Trials have shown that the use of the new Bar Extreme RPR mix can decrease the growth of annual meadow grass by up to 20 % within two months after seeding (see the table).



Source: Barenbrug Research

For more detailed information about annual meadow grass please visit www.barenbrug.biz/poa-annua.

Closer mowing is not a problem for RPR either. Thanks to its combination with fine-leaved perennial ryegrasses the grass can be mown down to 10 mm without in any way affecting the strength and regenerating capacity of the RPR.



Here you see that a tussock of RPR has in one year's time acquired a circumference that is more than 50 % larger than that of common perennial ryegrass.

SOS - Super Over Seeding

Grass on demand

**Fastest overseeding solution,
at low temperatures!**



Your sports pitches are used day in, day out. It therefore comes as no surprise that by the time the winter break comes along, parts of the pitches will have been damaged and by the time the end of the playing season has arrived the pitches have almost completely lost their grass cover, severely limiting the number of available playing hours.

SOS is the ideal solution, as it takes half the time to recover after overseeding. SOS can be used in the 'difficult' months at the end or beginning of the year when stress dominates the turf grass and growth is restricted. SOS can be used at low soil temperatures (down to less than 6 °C) and after a short recovery period the playing season can be extended with additional playing hours!

SOS, a 'cool' concept for sports pitches

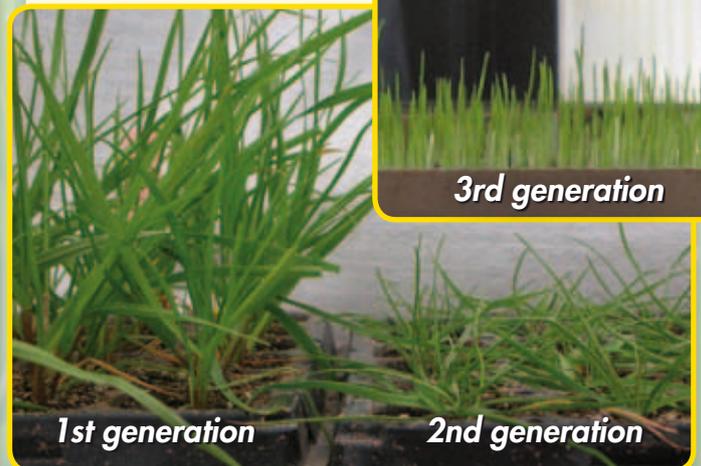
SOS is an innovative turf grass product, characterised by its extremely rapid germination and establishment, even after overseeding under very low temperatures. SOS germinates and establishes much faster than pure perennial ryegrass under cool temperature conditions. Now, pitches that were damaged due to heavy duty can be renovated to the required degree of grass cover within a much shorter period of time. Thanks to SOS, there is a substantial reduction of 50 % in the 'recovery period' after overseeding, when overseeded just after winter when soil temperatures are around 6 °C.

SOS will provide a dense grass cover in the periods that your turf grass suffered most from winter damage. SOS results into a pitch that remains playable for a longer time!

Fastest germination with SOS!

Fastest germination with newest generation annual ryegrass: SOS! SOS has become a well-known overseeding solution providing superior germination and establishment in very cool soil temperatures (down to 6 °C) for year round sward cover.

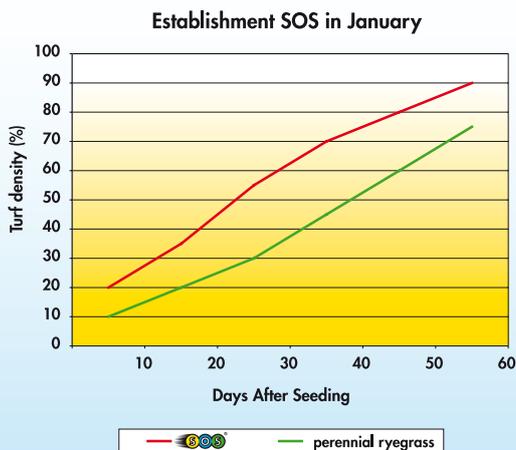
SOS is the solution for reducing the recovery time of the pitch after renovation. Overseeding using SOS guarantees grass cover of at least 60 % within one month - 18 days faster than with standard blends containing perennial ryegrass! Forget the 'forage-type' annual ryegrasses. Thanks to advanced breeding Barenbrug found the characteristics of the third generation SOS. Desirable fine leaved characteristics which can be seen below:



Overseeding at lower temperature

The most heavily used pitches normally lose most of their grass plants in the middle of the winter. This means clubs need to improvise in order to keep on playing on suitable pitches. SOS puts an end to all of this, as overseeding is carried out on a continuous basis, already from the end of the winter period, thereby ensuring that your grass cover is maintained at a high level.

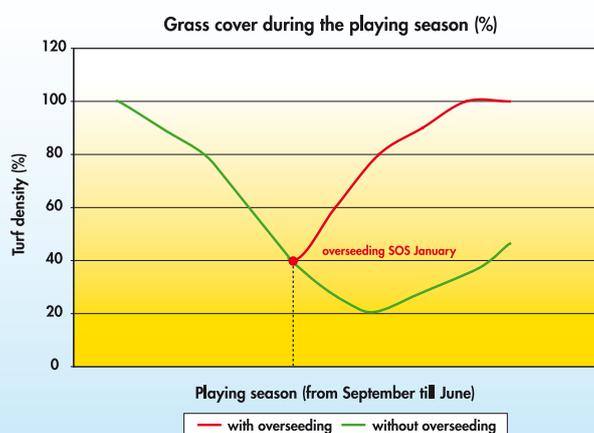
The following graph shows just how quickly SOS germinates and establishes itself when overseeded in January at a soil temperature of 6.2 °C. One month later, the grass cover is already above 60 %.



At low temperatures SOS establishes itself more than 18 days faster than perennial ryegrass.

Extending the playing season!

Thanks to SOS, the playing season is extended by a few months. By overseeding your pitch in the very early spring you keep your pitch continuously dense. Pitches can be used more intensively than before. With SOS, the number of playing hours is drastically increased, in some cases even by around 100 additional hours a year!



Annual average grass coverage, using SOS

Predicting the germination of your SOS!

Laboratory studies at Barenbrug Research showed the possibility to predict the germination of SOS due to calculating the so-called Growing Degree Days (GDD). GDD are calculated by the sum of the average day temperatures.

The varieties in the study were the SOS key variety (*annual ryegrass*), Bargold and Barlennium (*perennial ryegrasses*). The GDD formula was applied to the emergence of the first green leaf; germination of course begins before this development stage, but the appearance of the first green leaf is what is recognised in practice in the field. At a stable temperature of 11.5 °C day and 7.5 °C night in a sand dominant rootzone, SOS emerged after nine days, two days earlier than Bargold and three days earlier than Barlennium (see table below for the calculation of the GDD of SOS).



Not only was SOS faster to emerge, there was also a significant difference in the development stage. The emerging leaf of the SOS annual ryegrass was twice as long and continued growth at a higher rate in comparison to the perennial ryegrass varieties, providing a faster, greener appearance in a field situation (see picture above).

Table: germination in germination cabinet with different day and night temperatures, eight hours of light

| Date | Maximum temp °C | Minimum temp °C | Average temp per day | GDD sum | Plant situation |
|--------|-----------------|-----------------|----------------------|---------|--------------------------------------|
| 16-Nov | 12.5 | 7.5 | 10 | 10 | Moment of seeding |
| 17-Nov | 11.5 | 7.5 | 9.5 | 19.5 | |
| 18-Nov | 11.5 | 7.5 | 9.5 | 29 | |
| 19-Nov | 11.5 | 7.5 | 9.5 | 38.5 | |
| 20-Nov | 11.5 | 7.5 | 9.5 | 48 | |
| 21-Nov | 11.5 | 7.5 | 9.5 | 57.5 | |
| 22-Nov | 11.5 | 7.5 | 9.5 | 67 | |
| 23-Nov | 11.5 | 7.5 | 9.5 | 76.5 | |
| 24-Nov | 11.5 | 7.5 | 9.5 | 86 | |
| 25-Nov | 11.5 | 7.5 | 9.5 | 95.5 | First plant tops SOS |
| 26-Nov | 12 | 7.5 | 9.8 | 105.3 | Real germination with green leaf SOS |
| 27-Nov | 9 | 7.5 | 8.3 | 113.6 | First plant tops Bargold |
| 28-Nov | 9 | 7.5 | 8.3 | 121.9 | First plant tops Barlennium |

Water Saver - Grass with less water

Beat the drought!

Saving water is our social obligation



Water of good quality is our most valuable asset on earth. In our modern society, we wouldn't be able to survive a single day without water.

This is something of which we at Barenbrug are acutely aware. Water is for drinking, that is absolutely essential. Without drinking water, there would be no life on earth. Water is also important for irrigation, but this can be restricted to a certain extent.

The past decade our weather conditions have become increasingly extreme. Periods of extreme rain were succeeded by periods of extreme drought. Grass plants need water for optimum germination, establishment and growth. The varying weather conditions consequently also led to more stringent requirements with respect to the properties of grass. Water of high quality is a scarce commodity that cannot be taken for granted. Water that must be of top quality involves high costs. That is why water is one of Barenbrug Research & Development's key concerns. We have developed new grass varieties and products that tolerate heat and drought without requiring large amounts of water.

What makes Water Saver so unique?

Many grass mixtures available on the market contain the same components as Barenbrug's Water Saver: tall fescue, smooth stalked meadow grass and/or perennial ryegrass. Almost all those mixtures contain randomly chosen varieties of these grass species. However, many years' research carried out by Landlab in Italy has shown that a mixture's specific varietal composition does actually influence the quality of the grass! The combination of smooth stalked meadow grass, tall fescue and perennial ryegrass results in a sward of high quality that tolerates drought and heat well in summer, helps the weaker tall fescue survive the winter and ensures

early growth in spring. Thanks to the perennial ryegrass, the grass soon establishes after seeding, while offering plenty of room for the slower smooth stalked meadow grass and tall fescue.

Beat the drought!

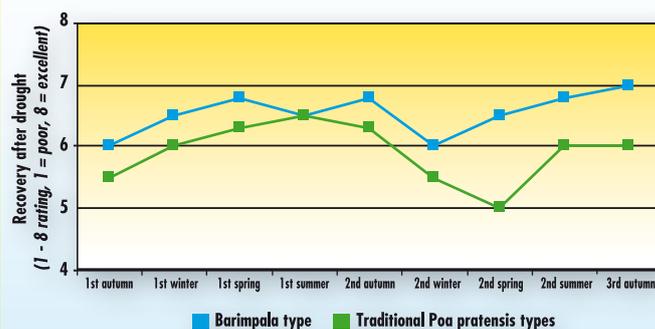
Prolonged drought may seriously damage your lawn. Water Saver prevents this problem. While other grass plants dry out, Water Saver remains green. The Barenbrug Research varieties included in Water Saver have excellent drought and heat tolerance.

Water Saver contains Barenbrug's tall fescue, perennial ryegrass and smooth stalked meadow grass. Barenbrug's smooth stalked meadow grass varieties are known for their great resilience and ability to recover after dry periods. While other varieties are defeated by dry or hot conditions, a variety such as Barimpala will soon become green again.

Smooth stalked meadow grass decisive in Water Saver

Smooth stalked meadow grass is the most influential grass in Water Saver. The range of smooth stalked meadow grass varieties is very large, but Water Saver contains only those that Barenbrug Research selected as being best in terms of drought tolerance, winter hardiness and wear tolerance. Barimpala is such a smooth stalked meadow grass variety that performs well both under dry conditions and during winter.

The chart below shows the resilient characteristics of Barimpala poa pratensis types in spring and autumn compared with traditional types.

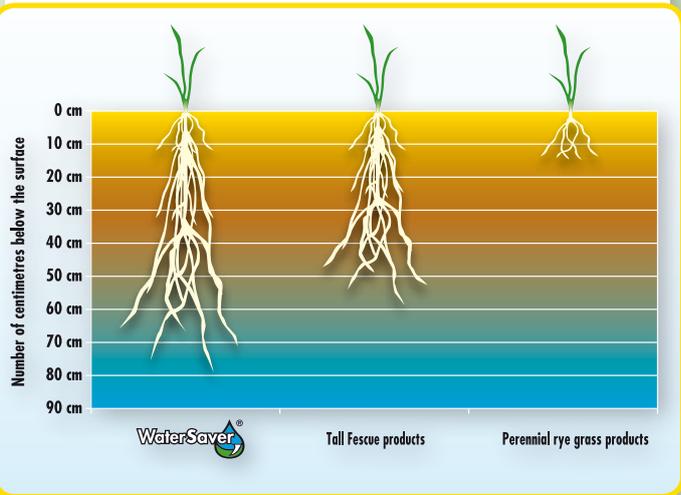


Barenbrug's unique tall fescue varieties!

Barenbrug's specific tall fescue varieties form a very deep root system, have a finer leaf texture and greater drought tolerance than traditional tall fescue varieties. The perennial ryegrass contained in Water Saver moreover ensures rapid establishment and was also specifically selected for its drought tolerance.

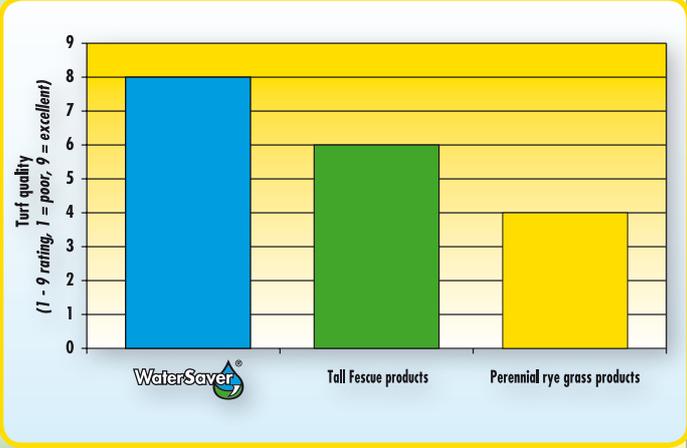
The balanced combination of the best Barenbrug tall fescue, perennial ryegrass and smooth stalked meadow grass varieties in Water Saver ensures excellent drought and heat tolerance.

The following graph shows the quality of Water Saver seeded in autumn in comparison with that of a traditional tall fescue mixture and a mixture containing perennial ryegrass. The irrigation level was 50 % of the Evapotranspiration (ET). The measurements were taken over a period of two years.



Water & cost savings

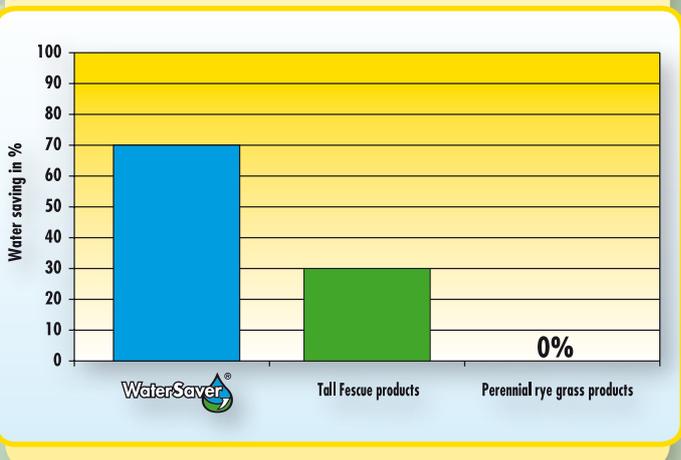
Water Saver can help you save up to 70 % on your total amount of irrigation water. In Italy, where the average consumption is 120 litres of water per m² per month, this soon leads to an overall reduction of 0.70 x 600 litres = 420 litres per m² in the growing season, which ranges from May until October. That corresponds to 42 m³ water per 100 m²! In euros the savings may amount to € 73.50 per 100 m², depending on the region.



Deep rooting: another benefit

Thanks to its deep rooting, the Water Saver grass obtains water from deeper soil layers. Standard grass plants root less deep and can only obtain water from the top layer (the upper 10 to 15 cm). Such plants will soon die under dry conditions, even before a stage of extreme drought is reached. The tall fescue contained in Water Saver can root to depths of more than 60 cm and stores water and nutrients (sugars) in its roots, creating a buffer for dry periods, as it were. Smooth stalked meadow grass ensures horizontal growth, resulting in an extensive network of underground rhizomes and roots.

| Irrigation level | 30 mm/week | litres/m ² | m ³ /100 m ² | | | |
|------------------------------------|------------------------|---------------------------------|------------------------------------|--------------|--------------|--------------|
| | 120 mm/month | 120 | 12 | | | |
| | Costs / m ² | € per 100 m ² /month | per 2 months | per 3 months | per 4 months | per 5 months |
| AVG water price € / m ³ | € 1.75 | 21 | € 42.00 | € 63.00 | € 84.00 | € 105.00 |
| | | | Cost Savings (€) | | | |
| Water Savings (%) | | € per 100 m ² /month | per 2 months | per 3 months | per 4 months | per 5 months |
| Traditional mix with Lp | 0% | € 0 | € 0 | € 0 | € 0 | € 0 |
| Traditional mix with Fa | 30% | € 6 | € 12.60 | € 18.90 | € 25.20 | € 31.50 |
| Water Saver | 70% | € 15 | € 29.40 | € 44.10 | € 58.80 | € 73.50 |



Sports

The demands placed on the quality and appearance of sports fields (and football pitches in particular) have increased considerably over the past decade. Not a game is broadcast without the commentator giving an assessment of the turf.



In the sporting world, the turf's wear tolerance is the most important selection criterion when choosing grass seed mixtures for sowing sports fields. To repair areas which have been worn bare or for sod improvement and compaction, over-

seeding with specific grass seed mixtures is increasingly common. The latest development is a hardwearing self-healing grass seed mixture.

Thanks to global market expertise and experience, Barenbrug offers products for all possible applications. The credentials speak for themselves: Barenbrug grasses are used in European and international football competitions and major events like the World and European Football Championships, and the Olympics.



| | RPR | Bar Champion | Rapide | Supersport | Water Saver | SOS | Speedy Green |
|----------------------------|----------------------------------|--------------|--------|------------|-------------|-----|--------------|
| NEW SEEDING | Suitable for new seeding | ✓ | ✓ | ✓ | ✓ | | |
| | Fast establishment | ✓ | ✓ | ✓ | | | |
| | Self repairing | ✓ | | ✓ | ✓ | | |
| | Higher wear tolerance | ✓ | | ✓ | ✓ | | |
| | Highest wear tolerance | ✓ | | | | | |
| | Highest drought tolerance | | | | | ✓ | |
| | With the Green Earth label | | | | | ✓ | |
| | - Requires less fertiliser | | | | ✓ | ✓ | |
| | - Requires less pesticide | ✓ | | | | ✓ | |
| | - Requires less irrigation | | | | | ✓ | |
| OVERSEEDING | Suitable for overseeding | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | Fast establishment | ✓ | ✓ | ✓ | | | ✓ |
| | Fastest establishment | | | | | | ✓ |
| | Germination low temperatures 6°C | | | | | ✓ | |
| | Self repairing | ✓ | | ✓ | | | |
| | Higher wear tolerance | ✓ | | ✓ | | | |
| | Highest wear tolerance | ✓ | | | | | |
| | Highest drought tolerance | | | | | ✓ | |
| | With the Green Earth label | | | | | ✓ | |
| | - Requires less irrigation | | | | | ✓ | |
| - Requires less pesticide | ✓ | | | | ✓ | | |
| - Requires less fertiliser | | | | | ✓ | | |

Sports - latest developments

Strong as iron!

Regenerating Perennial Ryegrass



RPR (Regenerating Perennial Ryegrass) is a true revolution in the grass world. It is a perennial ryegrass that grows runners and is even recognised

in the United States as the variety *loium perenne stoloniferum*. It's a variety that hasn't appeared since 1836; truly a revolutionary innovation you can be proud of.

Thanks to the runners RPR creates an extremely strong turf, of a strength that is unheard of for a perennial ryegrass. The runners (*determinate stolons*) hook onto each other, creating a network of grass. This gives it an extremely high tolerance for use, as well as the ability to repair itself.

RPR combines extreme strength with fast establishment. This is part of the revolution: an extremely strong turf which also establishes itself quickly. This combines the best of two worlds, something which could previously only be achieved by sowing different varieties.



Once the players are ready to take the field, RPR is too! Thanks to the runners, it has a very high capacity for self-repair in the spring.

Repairing winter damage

Grass on demand at lower temperatures!

SOS (Super Over Seeding) establishes itself faster than any other variety. When you need grass as quickly as possible, SOS is the only choice. Thanks to its extremely fast establishment and growing time, turf recovery time is shortened by 15 days. This is something that no other mixture can do. SOS is especially useful for repairing winter damage.



In addition to having the fastest establishment time, SOS is unique in the temperature at which it establishes itself. From as low as 6° Celsius, SOS produces a turf which can immediately handle even the toughest football match. Because it can be sown shortly after the winter, clubs no longer need to improvise and alternate between fields that might or might not be suitable for play.

Over-seeding with SOS ensures that annual meadow grass growing in sports fields is suppressed. This means that bare patches are avoided, and that lighter patches caused by annual meadow grass are no longer a problem. Because SOS grows deep roots and germinates even at low temperatures, annual meadow grass doesn't get a chance to establish itself.

European Turf variety lists

Europe's most finest varieties!



In Europe most countries publish a national variety list. In such a list a selection can be made between different grass species, e.g. between *lolium perenne* and *poa pratensis*. Within the species you can distinguish between sports and lawns

or landscape. European turf grass variety lists are guidelines for the application of varieties and mixtures for sports, lawns and golf. An important list for North Western Europe is the British Turf Grass Seed issued by BSPB and the trials are conducted at STRI in Bingley (UK).

In general the German speaking countries rely on using the RSM list (issued by FLL) whereas the Scandinavians have their own SCANTURF list and the Dutch the so-called 'Grasgids'.

All variety lists represent the quality and performance of the listed varieties. On all lists Barenbrug varieties have top rankings for e.g. wear tolerance, disease resistance and tolerance to close mowing.

Calendar

Overview of sowing times

Barenbrug's superior grass mixtures can be sown at any time of year, as long as the subsoil has thawed. With the right mixture from Barenbrug, you will never have to deal with bare turf.

Consult the following table for information on when to sow the mixtures.

| Months | RPR | Bar Champion | Rapide | Supersport | Water Saver | SOS | Speedy Green |
|-----------|-----|--------------|--------|------------|-------------|-----|--------------|
| January | | | | | | ✓ | |
| February | | | | | | ✓ | |
| March | ✓ | ✓ | | | | ✓ | ✓ |
| April | ✓ | ✓ | ✓ | | | ✓ | ✓ |
| May | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| June | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| July | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| August | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| September | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| October | ✓ | ✓ | | | | ✓ | ✓ |
| November | | | | | | ✓ | |
| December | | | | | | ✓ | |

NEW

RPR

Self regenerating and highest traffic possible



- ✓ New seeding
- ✓ Overseeding

- Highest wear tolerance!
- Revolutionary: perennial ryegrass with stolons!
- Extremely strong and fast turf.
- Less annual meadow grass.
- Very high capacity for self-repair in spring.

Composition

| | |
|----------------|------|
| RPR | 50 % |
| Lolium perenne | 50 % |



Specifications

- *Speed of establishment: very fast* • *Nitrogen requirement: high*
- *Speed of growth: fast* • *Sowing rate: 2 - 2.5 kg/100 m²*
- *Mowing height: from 20 mm* • *15 kg packaging*

www.barenbrug.biz/rpr

NEW

Bar Champion

Fast establishment with top registered varieties



- ✓ New seeding
- ✓ Overseeding

- Quick recovery after the winter period.
- Smooth appearance thanks to perennial ryegrass.
- Able to withstand closer mowing.
- Reliable and tested as the best.



Composition

| | |
|---|-------|
| Lolium perenne (at least two varieties) | 100 % |
|---|-------|

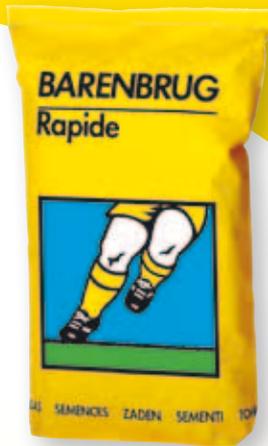
Specifications

- *Speed of establishment: very fast* • *Nitrogen requirement: high*
- *Speed of growth: fast* • *Sowing rate: 2 - 2.5 kg/100 m²*
- *Mowing height: from 20 mm* • *15 kg packaging*

www.barenbrug.biz/barchampion

Rapide

Sports mixture of top variety register varieties!



- New seeding
- Overseeding

- High wear tolerance.
- Strong root system.
- Quick recovery after the winter period.
- Fast establishment.
- Reliable and tested as the best.



Composition

| | |
|----------------|------|
| Lolium perenne | 75 % |
| Poa pratensis | 25 % |

Specifications

- *Speed of establishment: fast* • *Nitrogen requirement: normal*
- *Speed of growth: normal* • *Sowing rate: 2 - 2.5 kg/100 m²*
- *Mowing height: from 25 mm* • *15 kg packaging*

www.barenbrug.biz/rapide

Supersport

For sowing a new field and heavy use



- New seeding
- Overseeding

- Excellent wear tolerance.
- Less irrigation required.
- Tolerant to closer mowing.
- Reliable and tested as the best.

Composition

| | |
|-----------------|------|
| Lolium perennes | 50 % |
| Poa pratensis | 50 % |



Specifications

- *Speed of establishment: slow* • *Nitrogen requirement: normal*
- *Speed of growth: normal* • *Sowing rate: 2 - 2.5 kg/100 m²*
- *Mowing height: from 25 mm* • *15 kg packaging*

www.barenbrug.biz/supersport

Water Saver

*Most sustainable
grass for sports fields*

- ✓ New seeding
- ✓ Overseeding



- Extremely deep roots (*down to 60 cm deep*).
- Highly drought-tolerant.
- Less irrigation required.
- Less fertiliser required.
- Contributes to soil stability.

Composition

| | |
|---------------------|------|
| Festuca arundinacea | 80 % |
| Poa pratensis | 10 % |
| Lolium perenne | 10 % |



Specifications

- *Speed of establishment: normal* • *Nitrogen requirement: low*
- *Speed of growth: normal* • *Sowing rate: 3 - 3.5 kg/100 m²*
- *Mowing height: from 30 mm* • *15 kg packaging*

www.barenbrug.biz/watersaver-sports

SOS

Super-fast recovery at low temperatures



- New seeding
- Overseeding

- Fastest establishment.
- For overseeding at low temperatures (from 6°).
- For extremely fast recovery of football fields and parks.
- Increases the number of playing hours.
- Reduction of annual meadow grass.

Composition

| | |
|----------------|------|
| SOS | 50 % |
| Lolium perenne | 50 % |



Specifications

- Speed of establishment: extremely fast • Nitrogen requirement: high
- Speed of growth: extremely fast • Sowing rate: 3 - 5 kg/100 m²
- Mowing height: from 20 mm • 15 kg packaging

www.barenbrug.biz/sos

Speedy Green

Widely used overseeding mixture



- New seeding
- Overseeding

- For recovery of heavy duty fields.
- Fast germination and fast establishment.
- Suitable for repair of sports fields, parks and other heavy duty areas.



Composition

| | |
|---|-------|
| Lolium perenne (at least two varieties) | 100 % |
|---|-------|

Specifications

- Speed of establishment: very fast • Nitrogen requirement: high
- Speed of growth: fast • Sowing rate: 2.0 - 2.5 kg/100 m²
- Mowing height: from 20 mm • 15 kg packaging

www.barenbrug.biz/speedygreen

Golf

Barenbrug has been breeding grasses for golf courses for more than fifty years. This has resulted in highly advanced, globally leading golf-course mixes. Barenbrug works closely together with greenkeepers and golf-course architects all over the world to constantly develop new, innovative varieties that meet practical requirements.

New varieties are tested in official variety trials and local practical trials in close cooperation with various national and international organisations, such as FEGGA, EIGCA, STRI and Elmwood College (*with the St. Andrews and Pebble Beach golf courses*).

As befits a leading grass specialist, Barenbrug offers a wide range of golf-course mixes. In addition to our standard mixes, this catalogue contains a series of mixes with specific characteristics for varying conditions. Our range for example comprises six grass seed mixes specially intended for greens, varying from grasses with enhanced resistance to diseases to grasses that become established extremely quickly.

Sustainability is becoming an increasingly important concern in the golf sector, too. Barenbrug has therefore selected a range of grass seed mixes characterised by sustainable, economical maintenance. These mixes are sold under our Green Earth label and meet our sustainability criteria: less use of water, fertilisers, herbicides and insecticides and less mowing. With its professional approach to grasses, the golf market is an extra source of inspiration for Barenbrug's growers and product developers.

We would particularly like to highlight the latest innovation RPR. From now on, RPR technology will be used in our Bar Intensive RPR and Bar Extreme RPR mixtures, both strong grasses that can be used on tees and fairways.



| | Bar Intensive RPR | Bar Extreme RPR | Bar Fescue | Bar Fescue Plus | Bar Superb | Bar All Bent | Bar Duo Bent | Bar Trio Bent | Bar Fairway | Bar Tee | Bar Platinum |
|----------------------------|---|-----------------|------------|-----------------|------------|--------------|--------------|---------------|-------------|---------|--------------|
| GREEN | Particularly suitable for bentgrass greens | | | | ✓ | ✓ | ✓ | ✓ | | | |
| | Particularly suitable for red fescue greens | | ✓ | ✓ | ✓ | | | | | | ✓ |
| | Mowing heights from | | 5 mm | 5 mm | 4 mm | 3 mm | 3 mm | 2.5 mm | | | 6 mm |
| | Higher ball speeds | | | | ✓ | ✓ | ✓ | ✓ | | | |
| | Higher wear tolerance in summer | | ✓ | | ✓ | | ✓ | ✓ | | | ✓ |
| | Higher wear tolerance in winter | | | | ✓ | ✓ | | | | | |
| | Higher resistance to diseases | | ✓ | | ✓ | | ✓ | ✓ | | | ✓ |
| | Higher turf density | | | | ✓ | | ✓ | ✓ | | | |
| | Year round green colour | | | | ✓ | | ✓ | ✓ | | | ✓ |
| | Higher salt tolerance | | | | ✓ | | | | | | |
| | Fast establishment | | | | | | | ✓ | | | |
| | With the Green Earth label | | | ✓ | ✓ | | | | | | ✓ |
| | - Requires less fertiliser | | | ✓ | ✓ | | | | | | |
| - Requires less mowing | | | ✓ | ✓ | | | | | | | |
| - Requires less irrigation | | | ✓ | ✓ | | | ✓ | | | | |
| - Requires less pesticide | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | |
| FAIRWAY | Particularly suitable for fairways | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ |
| | Mowing heights from | 10 mm | 10 mm | 10 mm | 10 mm | | | | 10 mm | | 8 mm |
| | Higher wear tolerance | ✓ | ✓ | | | | | | | | |
| | Higher resistance to diseases | ✓ | | ✓ | ✓ | | | | ✓ | | ✓ |
| | Higher turf density | ✓ | | ✓ | ✓ | | | | ✓ | | ✓ |
| | Year round green colour | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ |
| | Self-repairing | ✓ | ✓ | ✓ | ✓ | | | | | | |
| | Fast establishment | ✓ | ✓ | | | | | | | | |
| | With the Green Earth label | | | ✓ | ✓ | | | | ✓ | | |
| | - Requires less fertiliser | | | ✓ | ✓ | | | | ✓ | | |
| | - Requires less mowing | | | ✓ | ✓ | | | | ✓ | | |
| | - Requires less irrigation | ✓ | | ✓ | ✓ | | | | ✓ | | |
| | - Requires less pesticide | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ |
| TEE | Particularly suitable for tees | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ |
| | Close mowing tolerance | | | ✓ | ✓ | ✓ | | | | | |
| | Mowing heights from | 10 mm | 10 mm | 5 mm | 5 mm | 4 mm | | | | 8 mm | 6 mm |
| | Higher wear tolerance | ✓ | ✓ | | | | | | | | |
| | Higher resistance to diseases | ✓ | | ✓ | ✓ | ✓ | | | | ✓ | ✓ |
| | Higher turf density | ✓ | | ✓ | | ✓ | | | | ✓ | ✓ |
| | Year round green colour | ✓ | ✓ | | ✓ | | | | | | ✓ |
| | Self-repairing | ✓ | ✓ | | | | | | | | |
| | Fast establishment | ✓ | ✓ | | | | | | | | |
| | With the Green Earth label | | | ✓ | ✓ | | | | | ✓ | ✓ |
| | - Requires less fertiliser | | | ✓ | ✓ | | | | | ✓ | ✓ |
| | - Requires less mowing | | | ✓ | ✓ | | | | | ✓ | ✓ |
| | - Requires less irrigation | ✓ | | ✓ | ✓ | | | | | ✓ | ✓ |
| - Requires less pesticide | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | |

Golf - latest developments

Golf courses with RPR: strong as iron!

Strong as iron! Regenerating Perennial Ryegrass



You naturally want to avoid damage to your golf course, RPR makes it possible! RPR is a regenerating perennial ryegrass building determinate

stolons. It is the first perennial ryegrass variety having this particular characteristic. RPR stands up to heavy traffic while keeping its good looks. As a creeping perennial ryegrass RPR outperforms traditional perennial ryegrass resulting in a regenerating perennial ryegrass with the highest wear tolerance and close mowing tolerance. Due to the stolons RPR is many times stronger than other perennial ryegrasses whilst maintaining the same speed. When combined with fine leaved perennial ryegrass RPR can be very well applied on tees and fairways.

RPR combines extreme firmness and strength with a speed of establishment and regeneration. In other words: *the best of two worlds.*



Green Earth

Sustainable, economical grass

Sustainable, economical grass. Economically and ecologically sound use and management of grass rank among our key priorities in our efforts to develop new grass varieties. With the introduction of our Green Earth quality label we have given a greener touch to the use and management of grass. After all, no two grass mixes are entirely the same. Thanks to our great expertise and many years' experience we know precisely what grass varieties and grass mixes may lead to further improvements in the sustainable use and management of grass.

All varieties and mixes sold under our Green Earth label have been tested by independent organisations. With this label we hope to contribute towards a green world in which future generations will also be able to enjoy sports and recreation on natural grass.

Four criteria

The grass mixes that we offer for sale under our Green Earth quality label must meet at least one of four specific criteria. Only grass seed mixes that meet one or more of these criteria qualify for our Green Earth label.

Those criteria are:

- Less use of water.
- Less use of fertilisers.
- Less use of herbicides and fungicides.
- Less use of mowing.

Read more about Green Earth on page 42 - 47.



Bentgrass

Just like green baize

There are two types of bentgrass: *Agrostis capillaris* (colonial bent) and *Agrostis stolonifera* (creeping bent).

Agrostis capillaris

Barenbrug has for many years specialised in the production of high-quality colonial bentgrass (*Agrostis capillaris*) varieties. With its limited heat and drought tolerance, colonial bentgrass does well in the temperate climate of northwest Europe. It has an average to high maintenance requirement and can be mown quite short, to 3.5 - 4 mm, without any problems. Barenbrug's intensive breeding programme has yielded three major successes: Bardot, Heriot and Barking. Barking ranks high in the 2015 STRI list and is to be found for example on the St. Andrews golf courses, in many cases combined with Heriot, another strong variety and the older renown Bardot. All Barenbrug varieties have been specially selected for their resistance to diseases, sward formation, recovery after winter and performance after short mowing (3.0 mm).



Agrostis stolonifera

We have recently expanded our range of creeping bents to include representatives of well-known creeping bent varieties such as L93, Declaration, Tigershark and Ignite. A favourable characteristic of creeping bent is that it can be mown even shorter than colonial bent. But it does call for intensive, expert maintenance. Because it forms many stolons (*horizontal shoots growing on surface*), it involves the risk of excessive thatch build up. Creeping bent is also a good medium for diseases such as dollar spot (*Sclerotinia homoeocarpa*) and pink snow mould (*Microdochium nivale*).



Our range has been specially selected for resistance to diseases and drought, speed of establishment, short density and good performance under close mowing (to 2.5 mm).

Barking plays a prominent role in our Bar Duo Bent mix, alongside the creeping bent variety Ignite. Bar Duo Bent is intended as a more sustainable alternative to 100 % creeping bent (*Agrostis stolonifera*). The mix is ideal for a climate zone characterised by hot, dry summers and slightly milder winters.

| | Excellent tolerance to dollar spot | Uniformity on green | Fine leaf texture | Dark genetic colour | Colour retention under cool circumstances | Aggressive establishment | Strong against poa annua | High shoot density | Drought tolerance | Winter hardiness |
|-------------|------------------------------------|---------------------|-------------------|---------------------|---|--------------------------|--------------------------|--------------------|-------------------|------------------|
| Declaration | ✓ | ✓ | ✓ | | ✓ | | | | | |
| Alpha | | | | ✓ | | ✓ | ✓ | ✓ | | |
| L93 | | | ✓ | | ✓ | ✓ | | | | ✓ |
| Tigershark | | | | | | ✓ | ✓ | | ✓ | |
| Ignite | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | |
| 007 | ✓ | | | ✓ | ✓ | | ✓ | | | ✓ |
| TeeOne | | | | ✓ | | | | ✓ | | |

NEW

Bar Intensive RPR

Golf courses that are as strong as iron with a very dense sward

- Green
- Fairway
- Tee
- Rough



- Denser sward.
- High disease resistance.
- Suitable for seeding and overseeding.
- Less damage due to regenerating capacity.
- Higher playing intensity allowed.
- Green all year round.

Composition

| | |
|------------------------------|------|
| RPR | 25 % |
| Lolium perenne (fine leaved) | 25 % |
| Festuca rubra commutata | 25 % |
| Festuca rubra litoralis | 25 % |



Specifications

- Speed of establishment: fast • Fertiliser requirement: normal
- Speed of growth: fast • Sowing rate: 20 - 25 g/m²
- Mowing height: from 10 mm • 15 kg package
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/barintensive-rpr

NEW

Bar Extreme RPR

Golf courses that are as strong as iron and establish extremely fast

- Green
- Fairway
- Tee
- Rough



- Very fast establishment.
- Less annual meadow grass (*poa annua*) ingress.
- Most suitable for overseeding.
- Less damage due to regenerating capacity.
- Higher playing intensity allowed.
- Green all year round.



Composition

| | |
|------------------------------|------|
| RPR | 35 % |
| Lolium perenne (fine-leaved) | 65 % |

Specifications

- Speed of establishment: very fast • Fertiliser requirement: high
- Speed of growth: very fast • Sowing rate: 25 - 30 g/m²
- Mowing height: from 10 mm • Packaging: 15 kg
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/barextreme-rpr

Bar Fescue

Sustainable and all round

- ✓ Green
- ✓ Fairway
- ✓ Tee
- ✓ Rough



- Close mowing tolerance down to 5 mm.
- High turf density.
- Higher playing intensity in summer possible.
- Higher disease resistance.
- Less fertiliser required.
- Excellent drought tolerance.
- Less irrigation required.



Composition

| | |
|-------------------------|------|
| Festuca rubra commutata | 50 % |
| Festuca rubra litoralis | 50 % |

Specifications

- Speed of establishment: slow • Fertiliser requirement: low
- Speed of growth: normal • Sowing rate: 25 - 30 gr/m²
- Mowing height: from 5 mm • Packaging: 15 kg
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/barfescue

NEW

Bar Fescue Plus

Most sustainable turf for golf

- ✓ Green
- ✓ Fairway
- ✓ Tee
- ✓ Rough



- Close mowing tolerance down to 5 mm.
- Year round green.
- Less fertiliser required.
- Excellent drought tolerance.
- Less irrigation required.
- Less mowing required.
- Higher disease resistance.

Composition

| | |
|--------------------------|------|
| Festuca ovina duriuscula | 30 % |
| Festuca rubra litoralis | 40 % |
| Festuca rubra commutata | 30 % |



Specifications

- Speed of establishment: slow • Fertiliser requirement: very low
- Speed of growth: normal • Sowing rate: 25 - 30 gr/m²
- Mowing height: from 5 mm • Packaging: 15 kg
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/barfescueplus

Bar Superb

A high class green in all seasons of the year

- Green
- Fairway
- Tee
- Rough



- Close mowing tolerance down to 4 mm.
- Higher ball speed.
- More traffic possible in summer & winter.
- Higher disease resistance.
- High turf density.
- Year round green.

30



Composition

| | |
|-------------------------|------|
| Festuca rubra commutata | 40 % |
| Festuca rubra litoralis | 40 % |
| Agrostis capillaris | 20 % |

Specifications

- *Speed of establishment: normal • Fertiliser requirement: normal*
- *Speed of growth: normal • Sowing rate: 25 - 30 gr/m²*
- *Mowing height: from 4 mm • Packaging: 15 kg*
- *Sowing depth: 0.4 - 0.6 cm*

www.barenbrug.biz/barsuperb

Bar All Bent

Fast greens and perfect winter performance

- Green
- Fairway
- Tee
- Rough



- Close mowing tolerance down to 3 mm.
- Greens for higher ball speed.
- Higher playing intensity possible in winter.
- Higher disease resistance.

Composition

Agrostis capillaris (at least two varieties) 100 %



Specifications

- *Speed of establishment: normal • Fertiliser requirement: normal*
- *Speed of growth: normal • Sowing rate: 6 - 8 gr/m²*
- *Mowing height: from 3 mm • Packaging: 15 kg*
- *Sowing depth: 0.4 - 0.6 cm*

www.barenbrug.biz/barallbent

Bar Duo Bent

Fast greens in summer and winter

- Green
- Fairway
- Tee
- Rough



- Close mowing tolerance down to 3 mm.
- Greens for higher ball speed.
- More traffic possible in summer.
- High turf density.
- Year round green.
- Excellent drought tolerance.
- Higher disease resistance.

Composition

| | |
|----------------------|------|
| Agrostis capillaris | 50 % |
| Agrostis stolonifera | 50 % |



Specifications

- Speed of establishment: fast • Fertiliser requirement: normal
- Speed of growth: normal • Sowing rate: 6 - 8 gr/m²
- Mowing height: from 3 mm • Packaging: 15 kg
- Sowing depth: 0.4 - 0.6 cm

www.barenbrug.biz/barduobent

NEW

Bar Trio Bent

Perfect mix of excellent creeping bent grasses for the closest mowing!

- Green
- Fairway
- Tee
- Rough



- For the closest mowing, 2.5 mm!
- High resistance to diseases like Dollar Spot and Fusarium.
- High shoot density.
- Fast establishment.
- Fine leaf texture.
- Year round green colour.



Composition

| | |
|--|-------|
| Agrostis stolonifera (three varieties) | 100 % |
|--|-------|

Specifications

- Speed of establishment: fast • Fertiliser requirement: high
- Speed of growth: fast • Sowing rate: 6 - 8 gr/m²
- Mowing height: from 2.5 mm • Packaging: 15 kg
- Sowing depth: 0.4 - 0.6 cm

www.barenbrug.biz/bartriobent

Bar Platinum

All round mixture for greens, tees and fairways

- Green
- Fairway
- Tee
- Rough



- All-round applicable!
- Close mowing tolerance down to 6 mm.
- Less fertiliser & pesticide.
- Higher disease resistance.
- Year round green.

Bar Fairway

Dense and fine leaved sward

- Green
- Fairway
- Tee
- Rough

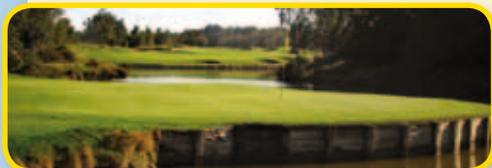


- Close mowing tolerance down to 10 mm.
- High turf density.
- Higher disease resistance.
- Excellent drought tolerance.
- Less fertiliser required.
- Less frequent mowing required.

Composition

| | |
|-------------------------|------|
| Festuca rubra commutata | 50 % |
| Festuca rubra litoralis | 20 % |
| Poa pratensis | 30 % |

32



Composition

| | |
|------------------------------|------|
| Lolium perenne (fine leaved) | 30 % |
| Festuca rubra commutata | 20 % |
| Festuca rubra litoralis | 50 % |

Specifications

- Speed of establishment: normal • Fertiliser requirement: low
- Speed of growth: normal • Sowing rate: 20 - 25 gr/m²
- Mowing height: from 6 mm • Packaging: 15 kg
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/barplatinum



Specifications

- Speed of establishment: slow • Fertiliser requirement: low
- Speed of growth: normal • Sowing rate: 20 - 25 gr/m²
- Mowing height: from 10 mm • Packaging: 15 kg
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/barfairway

Bar Tee

Dense and fine leaved sward

- Green
- Fairway
- Tee
- Rough



- Close mowing tolerance down to 8 mm.
- Higher disease resistance.
- High turf density.
- Less fertiliser required.
- Excellent drought tolerance.
- Less frequent mowing required.



Composition

| | |
|-------------------------|------|
| Festuca rubra commutata | 30 % |
| Festuca rubra litoralis | 30 % |
| Poa pratensis | 40 % |

Specifications

- Speed of establishment: slow • Fertiliser requirement: low
- Speed of growth: normal • Sowing rate: 20 - 25 gr/m²
- Mowing height: from 8 mm • Packaging: 15 kg
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/bartee

Bar Rough

Traditionally reliable landscape mixture for semi and deep roughs

- Green
- Fairway
- Tee
- Rough



- Suitable for all kind of soils.
- Low maintenance required.
- Attractive flowering during the year.
- Very good shade tolerance.

Composition

| | |
|-------------------------|------|
| Festuca rubra commutata | 20 % |
| Festuca rubra litoralis | 30 % |
| Festuca trachyphylla | 40 % |
| Festuca ovina | 10 % |



Specifications

- Speed of establishment: slow • Fertiliser requirement: very low
- Speed of growth: slow • Sowing rate: 10 - 20 gr/m²
- Mowing height: from 10 mm • Packaging: 15 kg
- Sowing depth: 0.5 - 1.0 cm

www.barenbrug.biz/barrough

Lawns and landscaping



Turf grass is crucial in our lives. It is in our back yards, parks and on playing fields. We do not use grass only for practical purposes, also for conditioning the air and improvement of our natural environment. It is more than just aesthetics!

All mixtures in this catalogue have been divided into lawns and landscaping and roadsides and airports. A few mixtures can be used for both your private lawn and for municipal parks respectively. Innovations like Shadow and Water Saver are used for respectively shady green areas and dry soils. For roadsides and airports Barenbrug has developed special mixtures that grow on poor soils and protect against mice and rabbits.



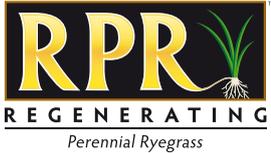
From a legal point of view sustainable management has become necessary. Barenbrug offers mixtures with the Green Earth label. Low Maintenance for example, is a mixture for sustainable and economical maintenance and has a slower growth rate. As a result of this less clippings are produced and less mowing is necessary.

| | | Bar Power RPR | Water Saver | Shadow | Solide | Low Maintenance | Bar Roadside | Bar Airport |
|---------------------------------|-------------------------------|---------------|-------------|--------|--------|-----------------|--------------|-------------|
| LAWNS & LANDSCAPING | Suitable for ornamental lawns | | | ✓ | ✓ | ✓ | | |
| | Suitable for playing lawns | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | Suitable for sport lawns | ✓ | ✓ | ✓ | | | | |
| | Suitable for parks | ✓ | ✓ | ✓ | | ✓ | | |
| | Highest wear tolerance | ✓ | | | | | | |
| | Higher wear tolerance | ✓ | ✓ | ✓ | ✓ | | | |
| | Tolerant to drought | | ✓ | | | ✓ | | |
| | Fast establishment | ✓ | | | ✓ | | | |
| | Sun and shade | | ✓ | ✓ | | ✓ | | |
| | Fine leaved | ✓ | | | ✓ | ✓ | | |
| | With the Green Earth label | | ✓ | ✓ | | ✓ | | |
| | - Requires less irrigation | | ✓ | ✓ | ✓ | ✓ | | |
| | - Requires less fertiliser | | ✓ | ✓ | ✓ | ✓ | | |
| - Requires less pesticide | ✓ | ✓ | ✓ | | ✓ | | | |
| - Requires less mowing | | | | | ✓ | | | |
| ROADSIDES & AIRPORTS | Suitable for roadsides | | | | | ✓ | ✓ | |
| | Suitable for airports | | | | | | | ✓ |
| | Low maintenance | | | | | ✓ | | |
| | Tolerant to drought | | | | | ✓ | ✓ | ✓ |
| | Erosion control | | | | | | ✓ | |
| | With the Green Earth label | | | | | ✓ | | |
| | - Requires less irrigation | | | | | ✓ | ✓ | ✓ |
| | - Requires less fertiliser | | | | | ✓ | ✓ | ✓ |
| - Requires less pesticide | | | | | ✓ | ✓ | ✓ | |
| - Requires less mowing | | | | | ✓ | | ✓ | |

Lawns and landscaping - latest developments

Strong as iron!

Regenerating Perennial Ryegrass



Grass plays a prominent part in gardens. An attractive lawn will immediately enhance the look of any garden. Sadly, many gardens look disappointing

because of the poor quality of their lawns. You will of course want a lawn that children can happily play on without causing too much damage. That's now possible with the revolutionary Bar Power RPR.

Waiting for grass to grow can take a long time. Things can now be speeded up with the fast-establishing Bar Power RPR. Once the grass has established you will be able to enjoy a beautiful lawn with high wear tolerance. Due to the RPR technology a dense sward is guaranteed which will regenerate after any damage.

Bar Power RPR's unique composition results in an attractive sward that tolerates wear very well. A natural lawn is the most beautiful and most sustainable basis of any garden.

RPR is a regenerating perennial ryegrass that forms stolons. This makes it the first perennial ryegrass variety with this specific characteristic. Until now, smooth stalked meadow grass was the only type of stoloniferous grass. The stolons make RPR many times stronger than other types of perennial ryegrass without in any way affecting its fast growth. The result is a regenerating perennial ryegrass with excellent wear tolerance and a high visual quality, making it very suitable for garden lawns, parks and landscaping areas. RPR has already proved its value in sports pitches and golf courses.

Green Earth

Ecological management and ease of use



With the introduction of the quality label Green Earth, Barenbrug helps greenkeepers to ensure more sustainable use and management of their grass. All the varieties and mixtures bearing the Green Earth quality

mark have been independently tested by national and international research organisations. With its Green Earth, Barenbrug hopes to contribute towards a green earth on which next generations will also be able to enjoy sports and other recreational activities.

Low Maintenance is one of the mixtures that have been approved for the Green Earth quality mark. Low Maintenance contains a relatively high percentage of crested hairgrass (*koeleria macrantha*), which was developed for the specific purpose of ensuring ecological management and ease of use. What makes Low Maintenance so unique is the slow growth of the crested hairgrass, enabling reductions in the volume of clippings of up to 50 % in relation to a traditional playing field, and the grass can be mown up to 40 % less often. So Low Maintenance scores high in all the criteria of the Green Earth quality mark, i.e. less consumption of water, fertilisers and pesticides and less mowing.

Water Saver is another mixture bearing the Green Earth quality mark. As its name implies, this mixture needs less water. The ability to root to great depths, of up to 60 cm, means that Water Saver can tolerate drought extremely well. The grass's long roots can take up nutrients from deep down in the soil, at depths that other grass plants cannot reach, ensuring good soil stability. So, with its lower water and fertiliser needs, Water Saver meets the requirements of the Green Earth quality mark.

Creative solutions

Expertise and experience thanks to 110 years of investments

Over the years, we have acquired unique expertise on our varieties and grass seed mixtures. Constant investments in research and development over a period of 110 years have enabled us to develop innovative products offering creative, unequalled market solutions. Below are the most interesting innovative solutions for managers of public green areas and owners of private gardens.

Fewer clippings and many more benefits

Our Green Earth quality label makes us a pioneer in the field of sustainable lawn maintenance. Thanks to the efforts of our breeders all over the world our range also includes perennial ryegrass, which requires less fertiliser, grows slowly and is moreover finer than any other grass species, resulting in substantially fewer clippings when it is mown. Barenbrug has Green Earth mixtures for all types of swards - sports pitches, recreational grass and lawns - containing varieties specially selected for their compliance with criteria such as sustainability, speed of growth, fertiliser needs and disease resistance.

A green lawn for any type of soil, even the most demanding

Another creative, innovative solution is Barenbrug's fine-leaf tall fescue, contained in our Water Saver mixture. This grass species is unique in that it tolerates both drought and wetness. Because, even though we live in a temperate climate, the types of soil occurring here are so diverse that they may become both dry and wet. Clay is a good example of such a soil: it may be very dry in summer and very wet in winter. Excellent results can also be achieved in other applications, for example in car parks or on sandy or stony soils. Water Saver is the only solution for such conditions because of the grass's unique system of roots that can reach depths of up to 60 cm.

An attractive lawn, even in shady areas

At the time of its introduction, the species tufted hair grass (*Descampsia caespitosa*) that is contained in our Shadow mixture won an innovation award. It is another good example of a unique, creative solution for lawns, being the only grass species that combines good shade tolerance with high wear tolerance. Another advantage of this grass species over other shade-tolerant species such as red fescue is that it shows very little thatch buildup. Thanks to its northern origins, tufted hair grass is very resistant to winter conditions, ensuring stable growth in early spring, and it is also more resistant in heavy, damp soil.

A unique result with low maintenance

Like our other unique grass species, our crested hairgrass (*Koeleria macrantha*), contained in our Low Maintenance mixture, also won an innovation award on its introduction. Crested hairgrass (*Koeleria macrantha*) extremely slowly and has unique aesthetic characteristics. It also shows little thatch buildup. As you may expect from a mixture bearing such a name, our Low Maintenance requires little maintenance, making it your ideal partner for extensive management of your green spaces.

Barenbrug hopes you will enjoy your lawn for many years to come.

NEW

Bar Power RPR

Lawns strong as iron

- Lawns
- Landscaping
- Roadsides
- Airports



- RPR technology inside!
- Fast and strong.
- Regenerating ability due to stolons.
- Wide application possibilities.
- For new and overseeding.
- High disease resistance.
- Less weeds.
- High turf density.



Composition

| | |
|-------------------------|------|
| RPR | 30 % |
| Lolium perenne | 25 % |
| Festuca rubra commutata | 30 % |
| Festuca rubra | 15 % |

Specifications

- Speed of establishment: fast • Nitrogen requirement: normal
- Speed of growth: fast • Sowing rate: 2.0 - 2.5 kg/100 m²
- Mowing height: from 10 mm • 5, 15 kg packaging

www.barenbrug.biz/barpower-rpr

NEW

Water Saver

Grass with less water

- Lawns
- Landscaping
- Roadsides
- Airports



- Less water required.
- Less work required for irrigation.
- Less cost for your water.
- Less water means no poa annua.
- Less potable water means more for human use.
- With Green Earth label.

Composition

| | |
|---------------------|------|
| Festuca arundinacea | 80 % |
| Poa pratensis | 10 % |
| Lolium perenne | 10 % |



Specifications

- Speed of establishment: normal • Nitrogen requirement: normal
- Speed of growth: normal • Sowing rate: 3 - 3.5 kg/100 m²
- Mowing height: 30 - 40 mm • 15 kg packaging

www.barenbrug.biz/watersaver-lawn

Lawns and landscaping

Shadow

Strong in sun and shade



- Lawns
- Landscaping
- Roadsides
- Airports

- Very shade tolerant due to descampsia cespitosa.
- Suitable for use in continental regions.
- No moss ingression.
- Less irrigation required.
- Less fertiliser required.

Composition

| | |
|-------------------------|------|
| Descampsia cespitosa | 40 % |
| Festuca rubra commutata | 20 % |
| Festuca rubra litoralis | 20 % |
| Poa pratensis | 20 % |



Specifications

- Speed of establishment: normal • Nitrogen requirement: normal
- Speed of growth: normal • Sowing rate: 2 - 2.5 kg/100 m²
- Mowing height: from 15 mm • 15 kg packaging

www.barenbrug.biz/shadow

Solide

Strong turf with high ornamental value



- Lawns
- Landscaping
- Roadsides
- Airports

- For playing lawns and landscaping.
- High ornamental value due to fine leaves.
- Fast recovery after damage.
- Close mowing possible (down to 10 mm).

Composition

| | |
|------------------------------|------|
| Lolium perenne – fine leaved | 35 % |
| Poa pratensis | 20 % |
| Festuca rubra commutata | 35 % |
| Festuca rubra litoralis | 10 % |



Specifications

- Speed of establishment: fast • Nitrogen requirement: normal
- Speed of growth: normal • Sowing rate: 2 - 2.5 kg/100 m²
- Mowing height: from 15 mm • 15 kg packaging

www.barenbrug.biz/solide

Low Maintenance

Most sustainable solution for your lawn

- Lawns
- Landscaping
- Roadsides
- Airports



- Very environmentally friendly mixture.
- 30 % less mowing guaranteed.
- Low fertiliser levels required.
- Labour and money saving.



Composition

| | |
|------------------------------|------|
| Koeleria macrantha | 40 % |
| Lolium perenne - fine leaved | 10 % |
| Festuca rubra litoralis | 15 % |
| Festuca rubra commutata | 15 % |
| Poa pratensis | 20 % |

Specifications

- *Speed of establishment: slow* • *Nitrogen requirement: very low*
- *Speed of growth: slow* • *Sowing rate: 2 - 2.5 kg/100 m²*
- *Mowing height: from 15 mm* • *15 kg packaging*

www.barenbrug.biz/low-maintenance

Lawns and landscaping

Bar Roadside

Fast establishing roadsides



- Lawns
- Landscaping
- Roadsides
- Airports

- Fast establishment.
- Good turf density.
- Prevents erosion.
- Less mowing needed.
- Fewer clippings.
- Suppresses weeds.
- High salt tolerance.

Composition

| | |
|-------------------------|------|
| Lolium perenne | 35 % |
| Poa pratensis | 5 % |
| Festuca rubra commutata | 20 % |
| Festuca rubra rubra | 40 % |



Specifications

- Speed of establishment: fast • Nitrogen requirement: low
- Speed of growth: normal • Sowing rate: 1 - 2 kg/100 m²
- Mowing height: from 15 mm • 15 kg packaging

www.barenbrug.biz/roadside

Bar Airport

Fewer birds at airports due to special grass



- Lawns
- Landscaping
- Roadsides
- Airports

- No small wild animals.
- Reduces number of prey birds and geese.
- Prevents bird strikes.
- Contains varieties with particular features.
- Safer runways!



Composition

| | |
|--|------|
| Festuca arundinacea (with erect growth habit) | 60 % |
| Descampsia cespitosa | 40 % |

Specifications

- Speed of establishment: normal • Nitrogen requirement: low
- Speed of growth: low • Sowing rate: 1.5 kg/100 m²
- Mowing height: from 40 mm • 15 kg packaging

www.barenbrug.biz/barairport

Green Earth

The economically and ecologically sound use and management of grass occupies a prominent position in Barenbrug's product development. Barenbrug's Green Earth quality label helps green space managers to achieve a more sustainable use and management of grass. Through extensive research and many years of expertise, Barenbrug knows better than anyone else which cultivars and mixtures can make an even bigger contribution to the sustainable use and management of grass.



All cultivars and mixtures which bear the Green Earth quality mark have been independently tested by research institutes worldwide. Through Green Earth, Barenbrug hopes to make a contribution to a green planet on which future

generations will be able to continue playing sports and enjoying recreational activities.

Barenbrug has formulated four concrete requirements which grass mixtures need to fulfil in order to be eligible for this sustainability quality mark. A Green Earth label means that the grass scores better than the previous generation in terms of at least one of the following aspects:

- Reduced water use.
- Reduced use of fertilisers.
- Reduced use of herbicides and fungicides.
- Reduced mowing.

| | | Water Saver | Low Maintenance | Bar Fescue | Bar Fescue Plus | Bar Fairway | Bar Tee | Bar Rough |
|------------------------------|----------------------------|-------------|-----------------|------------|-----------------|-------------|---------|-----------|
| SPORT | - Requires less irrigation | ✓ | | | | | | |
| | - Requires less fertiliser | ✓ | | | | | | |
| | - Requires less pesticide | ✓ | | | | | | |
| | - Requires less mowing | | | | | | | |
| LAWNS & LANDSCAPE | - Requires less irrigation | ✓ | ✓ | | | | | |
| | - Requires less fertiliser | ✓ | ✓ | | | | | |
| | - Requires less pesticide | ✓ | ✓ | | | | | |
| | - Requires less mowing | | ✓ | | | | | |
| GOLF | - Requires less irrigation | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | - Requires less fertiliser | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | - Requires less pesticide | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | - Requires less mowing | | | | ✓ | | | ✓ |

Grass seed mixtures with the Green Earth label

Products bearing the Green Earth label smartly use the different species and varieties in order to achieve great sustainability benefits. Fine fescues have high ratings on the ladder of sustainability compared with traditional bentgrasses and annual meadow grasses. *Koeleria macrantha* (*Barkoel*) offers warranties on a much more sustainable and economical management of landscaping areas, compared with traditional species.





Less water

In the past decade, weather conditions have become increasingly extreme. Spring and summer seem to be more and more often characterised by long periods of drought or, on the contrary, extremely heavy rain. Water is of course essential for the germination, establishment and growth of grass. Because of these changing weather conditions, grass is having to meet more stringent requirements.



Water requirements

Thanks to their low water requirements, the products bearing our Green Earth quality mark allow savings of up to 70 % in the use of water. In that respect they make a substantial contribution to the sustainability of grasses for recreational purposes. Heat

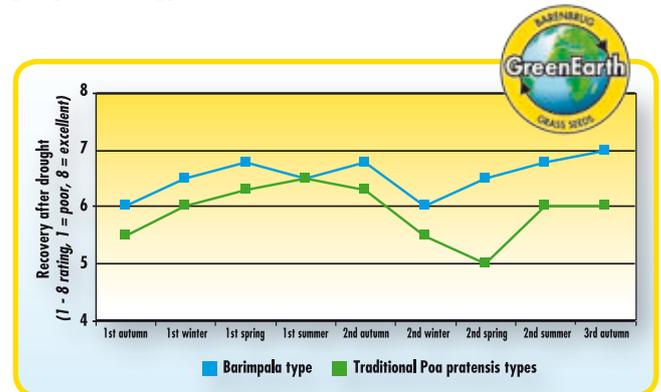
and drought raise the water requirements of grass precisely in periods characterised by a progressive shortage of water. The perfectly coordinated mixes of varieties of our products bearing our Green Earth label require less water and even help save water in the summer! Despite their substantially lower water requirements, these products of course continue to perform well and retain at least the same quality.

Research

Multi-year research under hot, dry conditions has yielded useful information on the drought tolerance of grass. It was already known that certain grass species require substantially less water for optimal growth than others. The Italian research institute Landlab has now shown that there are differences not only between grass species, but also within individual species, so between individual cultivars!

Poa pratensis shows a big genetic variation with respect to tolerance to drought and heat. This means that some varieties perform very well under drought circumstances, others do not. The following graph shows the resilient characteristics of Barimpala poa pratensis types in spring and autumn compared with traditional types.

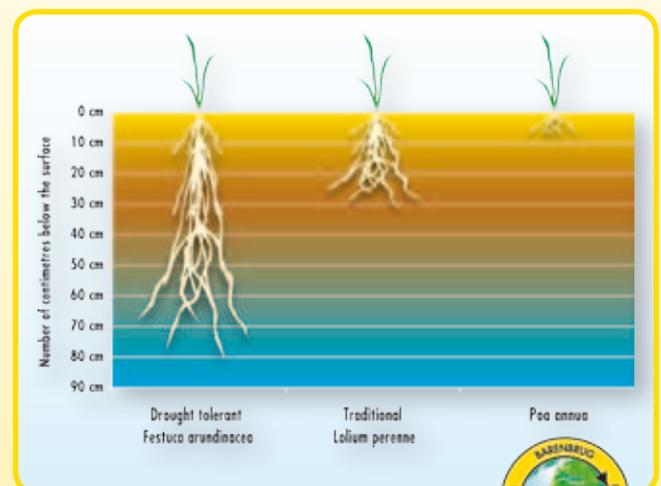
Figure 1: Differences between Barimpala types and traditional poa pratensis types.



The best known drought tolerant species is festuca arundinacea (*tall fescue*). Barenbrug's specific tall fescues are able to create a wide and deep rooting system. Due to this feature tall fescues obtain water from deeper soil layers. Standard grass plants root less deep and can only obtain water from the upper 10 to 15 cm. Such plants will soon die under dry conditions, even before a stage of extreme drought is reached.

High quality tall fescues root to depths of more than 60 cm and store water and sugars in their roots. In this way a buffer for dry periods is created.

Figure 2: Rooting depth different grass species.



Grass needs nutrients to be able to perform as required. Nitrogen is one of the most important elements for the growth of plants. Fertilisers are produced from non-renewable resources in energy-intensive processes. And excess fertiliser constitutes a threat to the ecosystem in ditches surrounding fields in which fertilisers are used.



Fertilisers

Selecting the right grass mixture for a specific intended use can make all the difference as far as fertilisers are concerned, too. Because some grass mixtures perform just as well as others, but with less fertiliser! So you can then use less fertiliser without any risk of the quality of your grass

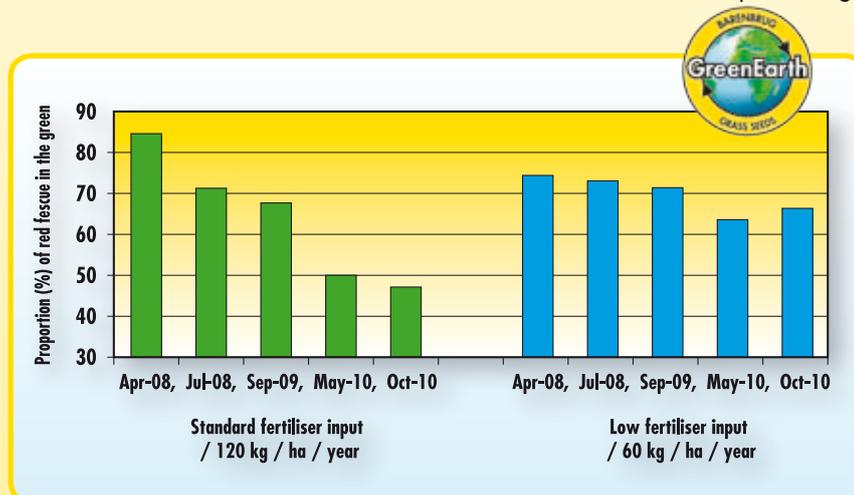
being affected in any way.

Research

A grass plant's nutrients need will generally depend on the following factors:

- The intended use: grass for sports fields must meet different requirements than grass intended for golf courses or parks;
- The species: perennial ryegrass has a higher nutrients need than red fescue;
- Genetic variation: different varieties have different nutrients needs.

Figure 3: Changes in the proportion of red fescue through time at two different fertilisation levels.



Many years of independent research by STRI Bingley in the United Kingdom has shown that red fescue and hard fescue do very well in lawns and golf courses at low to very low fertiliser doses. The results showed that the quality of the grass sward remained the same when the fertiliser dose was lowered. The research focused on comparing the performance of mixes and varieties at a low fertiliser input (60 kg N/ha/year) and a standard input (120 kg N/ha/year). Attention was also paid to the influence of lower fertiliser doses on the resistance to diseases, the growth of annual meadow grass, the sward density, (golf) ball speeds and thatch formation in the sward. Another result of the research is that, over the years, the proportion of red fescue was found to increase at the low fertiliser input relative to the standard input.

As can be seen in figure 3, the proportion of red fescue in the green is lower at a standard dose of fertilisers than at lower doses. So Bar Fescue results in a better green quality at a lower fertiliser input.

From this it can be concluded that if you lower your fertiliser input from 120 to 60 kg/ha/year your grass will retain the quality you want, while you need to use 50 % less fertiliser! Research has shown that this will moreover prevent the growth of annual meadowgrass.

There are also substantial differences between different varieties of the well-known perennial ryegrass. The preliminary results of a recently initiated trial to determine the effects of less nitrogen on the performance of varieties intended for sports purposes are promising, and disprove the long-held belief that perennial ryegrass has a high nitrogen demand.

Source: STRI, 2010 research

Stress situations that may lead to diseases (*fungi*) in grass may occur on sports fields, lawns and golf courses. Our changing climate is also a factor in this respect. Fungi manifest themselves in different ways, and may severely affect a grass sward and the quality of the games played on it. 'Prevention is better than cure' is the motto in this context, too. A problem is that the number of effective (chemical) products for preventing and controlling diseases is steadily decreasing.



Pesticides

Using products containing grass varieties that score best in terms of resistance to diseases can help you cut down the costs spent on pesticides. This will result in greater sustainability without the quality of your grass being affected in any way.

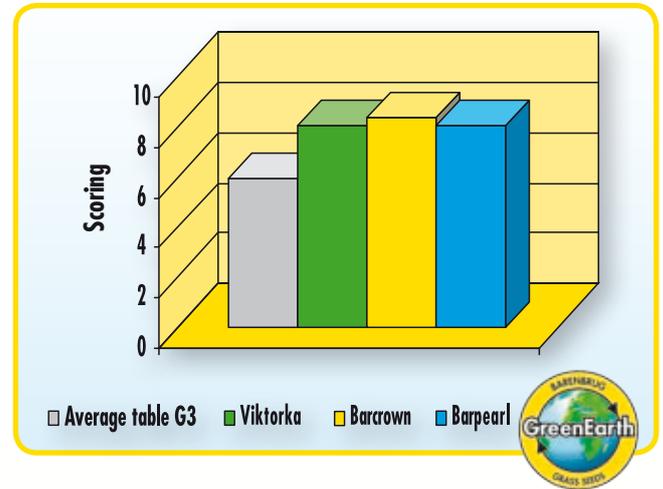
Research

Barenbrug's breeding programme revolves around selection on the basis of genetic varietal characteristics such as resistance to red thread, dollar spot and fusarium. New varieties are tested for their resistance to these diseases all over the world. Only the very best varieties qualify for inclusion in national lists of varieties. When a variety is proposed for inclusion in such a list it is tested by independent institutes, such as the PPO in the Netherlands, the Bundessortenamt in Germany and the STRI in the UK. The results of the tests are to be found in the *Grasgids*, *RegelSaatgutMischungen (RSM)* and *STRI Turf Seeds Bulletin*, respectively.

Extensive tests are also carried out to determine precisely which combinations of varieties yield the most disease-resistant mixes.

Figure 4 provides a survey of the performance of Barenbrug's varieties in the STRI list relative to the average performance. The resistance to red thread of Barenbrug's latest varieties of slender creeping red fescue is on average 30 % higher than the average score in the STRI Turf Seeds Bulletin 2015!

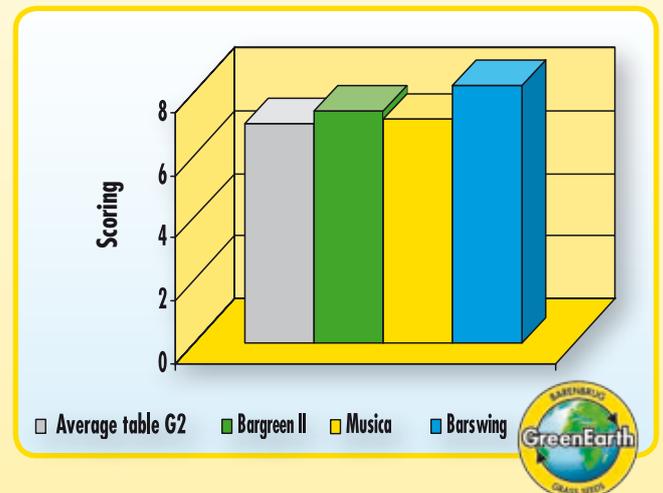
Figure 4: The resistance to red thread of three Barenbrug slender creeping red fescue varieties (*FRL, festuca rubra litoralis*) relative to the average in the STRI list 2015.



Source: STRI Turfgrass Seeds 2015

Figure 5 shows the resistance to red thread of common red fescue (*FRC, festuca rubra commutata*). The average score is 6.2. whereas the average score of Barenbrug's latest varieties is more than 7. With these new varieties the risk of red thread infection is a good deal lower, even at lower fertiliser inputs. Our Green Earth products are 35 % more disease-resistant than standard products.

Figure 5: The resistance to red thread of three Barenbrug common red fescue (FRC) varieties relative to the average in the STRI list 2015.



Source: STRI Turfgrass Seeds 2015

Sustainable grass management also means less mowing. In the growing season grass may produce a lot of mass at high temperatures and high light intensities. Then the grass must be mowed more often, which involves more labour, machine costs and fuel (fossil energy) and simultaneously results in higher CO₂ emissions.



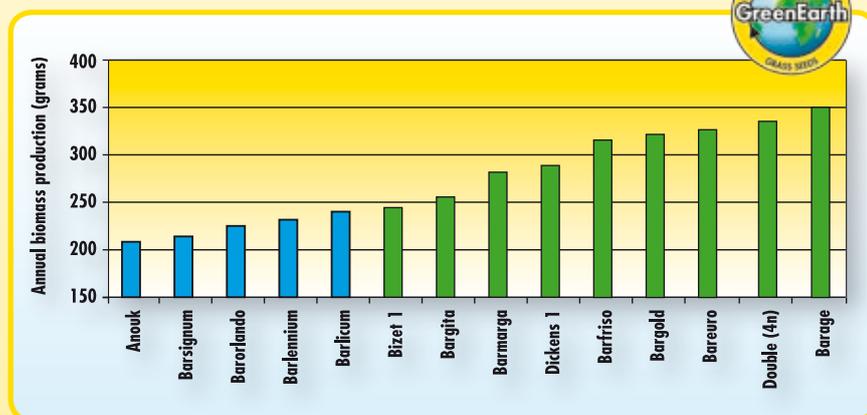
Mowing movements

Barenbrug has been investing heavily in research into the biomass production of grass for over five years now. The results show that there are substantial differences in growth height and grass production between individual species, but also within those species, in other words, at cultivar level.

Research

Perennial ryegrass - There are substantial differences between individual perennial ryegrass cultivars. Generally speaking, the older sports field varieties like Barrage produce a lot more biomass than the newer varieties, especially the fine-leaved ones. The differences may be more than 30 %. Figure 6 shows the difference per year produced by several perennial ryegrass varieties. Barsignum, characterised by slightly finer leaves, produces more than 40 % less biomass than the existing broad-leaved sports field varieties.

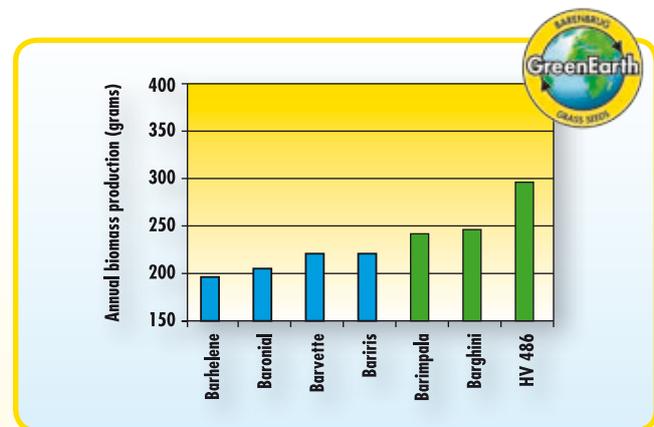
Figure 6: Mowing trial various Lolium perenne varieties.



40 % less biomass = 40 % less mowing
Source: Landlab, 2014

Smooth stalked meadow grass - Although the differences in biomass production are smaller in the case of smooth stalked meadow grass than in the case of perennial ryegrass, the growth heights of smooth stalked meadow grass varieties may vary substantially. Again, the fine-leaved varieties grow more slowly than the broader-leaved varieties. Figure 7 gives an impression of the biomass production differences per year of some smooth stalked meadow grass varieties. Differences run up to 33 %!

Figure 7: Mowing trial various poa pratensis varieties.



33 % less biomass = 33 % less mowing
Source: Landlab, 2014

Turf Grasses



Descampsia cespitosa
Tufted hairgrass



Agrostis capillaris
Browntop bent



Festuca arundinacea
Tall fescue



Agrostis stolonifera
Creeping bent



Festuca trachyphylla
Hard fescue



Cynodon dactylon
Bermuda grass



Festuca rubra rubra
Strong creeping red fescue



Festuca rubra commutata
Chewings fescue



Phleum pratense
Timothy



Festuca rubra litoralis
Slender creeping red fescue



Poa annua
Annual meadowgrass



Koeleria macrantha
Crested hairgrass



Poa pratensis
Smooth-stalked meadow-grass



Lolium perenne
Perennial ryegrass

Great in Grass

Sales and support

Our main regional sales distributors provide specialist knowledge regarding the various applications for our extensive range of quality products.

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BARNEYBURG

