

**SGT - SUSTAINABLE GRASS TECHNOLOGY**





## “Sustainable Grass Technology” – Barenbrug’s research-driven concept designed to deliver outstanding turf performance in high stress conditions with reduced fertiliser, chemical and water inputs.

Barenbrug aims to develop seed cultivars and grass seed mixes that respond to customers’ needs and a changing climate. Our Sustainable Grass Technology (SGT) products are designed to reduce the chemical, fertiliser and water input for turf managers.

Products under the SGT banner promise stress-tolerant grass for sustainable turf management and are the result of years of independent and in-house trials.

Barenbrug’s SGT products have been tested extensively, and offer exceptional performance in one or more of four pillars of research:

- Nitrogen-use efficiency to reduce fertiliser use and cost
- Drought tolerance to increase survival and reduce the need for irrigation in stress periods
- Increased disease tolerance to reduce the need for fungicide
- Lower biomass production (or clipping yield) to reduce mowing frequency, man hours and fuel use

Visit our website to explore our detailed video series showcasing the years of independent and in-house trials that led to the development of SGT:  
[www.barenbrug.co.uk/sports/technologies/sgt](http://www.barenbrug.co.uk/sports/technologies/sgt)



Sustainable

### Drought tolerance

The SGT products are curated from particular species and cultivars. In drought trials at Landlab in Italy and Barenbrug breeding stations, hard fescue always out-performs red fescue in periods of heat and drought (Fig. 1). The launch of **SGT All Hard** for 2026 allows end-users to focus efforts in overseeding gains in this species, and hard fescue also features strongly in both **SGT Fine Fescue** and **SGT Rye Fairway**.



Figure 1 - Drone Image From Landlab. Highlighted plots are the hard fescue. The quality and endurance of hard fescue stood alone during the most intense heat.

Integral in **SGT All Hard** and **SGT Fine Fescue** for 2026 are two new cultivars of hard fescue, *Barlegant* and *Beacon*. *Barlegant* offers a new standard of turf quality for the species and is listed as the new #1 cultivar in Table L6 of Turfgrass Seed 2026; *Beacon* is not far behind in the #2 position.

In the GEVES Turfgrass List (independent trials in several European countries), *Beacon* is #1-ranked for hard and sheep’s fescue for Lawn Index. The introduction of these two new cultivars cements SGT products in their market-leading position for overseeding golf fairways.



### Nitrogen Efficiency

In **SGT Rye Fairway**, *Barprrium* offers proven capacity for nitrogen-use efficiency, requiring up to 50% less nitrogen. In an 18 month STRI trial (shown in Fig. 2), results demonstrate nitrogen efficiency from a number of cultivars against live ground cover. *Barprrium* delivers the highest mean turf cover compared to all other cultivars. Put simply, it requires far less N to deliver equivalent turf performance.

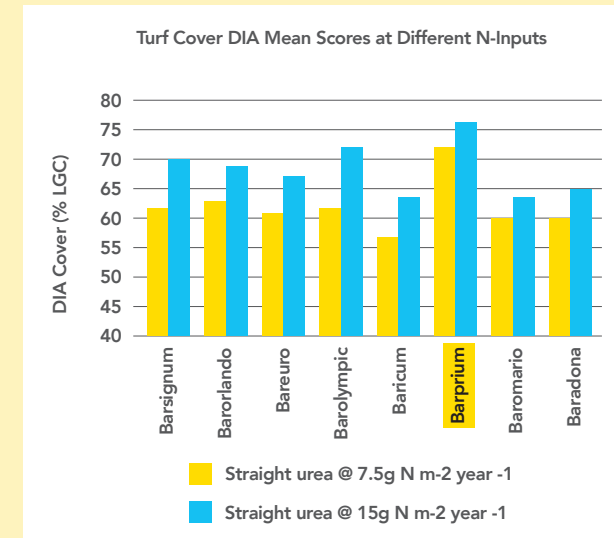


Figure 2 - STRI N-Efficiency Trial Data. *Barprrium* delivers equivalent mean turf cover to all other cultivars at 50% less nitrogen input.

STRI researchers concluded: “The best performing cultivar in this trial was *Barprrium*, with good turf quality and coverage observed at all N levels and N types. Even at very low levels of N, *Barprrium* still showed good quality and coverage.”

*Barprrium* is highly ranked in the BSPB Turfgrass Seed 2026 booklet with a mean score of 7.4 on Table L1 and exhibits strong summer colour – another useful characteristic for low-input golf fairways.

Products available in the SGT range represent the culmination of many years of research and targeted at golf course fairway overseeding to combat the effects of climate change and reduce future maintenance inputs.

#### Products available with SGT technology:

SGT All Hard  
SGT Fine Fescue  
SGT Rye Fairway

## Disease Tolerance

Disease tolerance is an increasingly important focus of Barenbrug’s turfgrass breeding programme for Europe. **SGT** products contain varieties that have the highest levels of protection against a range of relevant pathogens.

Hard fescue as a species has excellent tolerance to Dollar Spot, which is an increasing concern, particularly on links courses. Figure 3 has data from recent NTEP trials, showing that hard offers higher levels of tolerance on average compared to the red fescue sub-species. Overseeding fairways with **SGT All Hard**/ or **SGT Fine Fescue** is likely to be a good option to improve fairway performance against Dollar Spot.

| Dollar Spot Tolerance - All data, all locations 2015-2019 NTEP |              |                |                   |               |
|----------------------------------------------------------------|--------------|----------------|-------------------|---------------|
|                                                                | FRR (Strong) | FRC (Chewings) | FO (hard/sheep's) | FRL (slender) |
| cultivars                                                      | 6.9          | 8.2            | 8                 | 7.4           |
|                                                                | 6.7          | 7.9            | 7.8               | 6.6           |
|                                                                | 6.7          | 7.8            | 7.7               | 5.9           |
|                                                                | 6.6          | 7.7            | 7.7               | 5.6           |
|                                                                | 6.2          | 7.6            | 7.6               |               |
|                                                                | 6.1          | 7.6            | 7.5               |               |
|                                                                | 5.8          | 7.5            | 7.5               |               |
|                                                                | 5.6          | 7.4            | 7.4               |               |
|                                                                | 5.4          | 7.2            | 7.4               |               |
|                                                                | 5.2          | 7.1            | 7.2               |               |
|                                                                | 5.2          | 7              | 7.2               |               |
|                                                                | 5.1          | 7              |                   |               |
|                                                                | 4.9          |                |                   |               |
|                                                                | 4.9          |                |                   |               |
|                                                                | 4.7          |                |                   |               |
| Mean                                                           | 5.73         | 7.50           | 7.55              | 6.38          |

Figure 3 - 2015-2019 NTEP fine fescue trials; all data, all locations.

Red Thread is a common turfgrass disease affecting sustainably managed turf areas, such as fairways. SGT mixtures contain highly ranked cultivars for Red Thread tolerance, such as strong creeping red fescues *Barrisie* (#1-ranked; Table L5) and *Barjessica* (#3-ranked; Table L5), slender creeping red fescues *Barnoustie* (#4-ranked), and Chewings red fescue *Nightclub* (#2-ranked).

The designated SGT perennial ryegrass *Barprrium* not only delivers benefits in terms of drought tolerance, nitrogen-use efficiency and lower biomass production, but it also exhibits broad tolerance to a wide range of disease pathogens including *Drechslera* leaf spot, GLS and *Rhizoctonia*.





# SGT All Hard

SGT All Hard 100% hard fescue blend, utilising our sustainable grass technology (SGT), with cultivars bred to deliver reduced water, fertiliser and chemical inputs.

- SGT technology offers outstanding turf performance with reduced water, fertiliser and chemical inputs
- An overseeding mixture of three hard fescues to increase this species composition in sand-based fairways
- Hard fescue exhibits increased drought tolerance over red fescue and higher Dollar Spot tolerance than other fine fescues, including Sheep fescue.
- Wear tolerance and shade tolerance also superior to Sheep fescue
- Potential decrease in insect damage and worm-casting due to high lignin content forming a firm thatch barrier

**Usage**  
Overseeding and divoting for fairways and roughs on sites with particular drought, disease or pest stress.

**Features & Benefits**  
Hard fescue exhibits well-documented tolerance to drought and heat stress and proven performance with low-input maintenance, as well as good overall turf quality for density and visual merit, helping to maintain good aesthetics in the harshest environments. It will tolerate most stress conditions better than red fescues. Barenbrug has confirmed this with over a decade of research, primarily with *Hardtop* as a test cultivar, which makes up the majority of this blend.

Hard fescue also offers increased Dollar Spot tolerance over all other fine fescues (including Sheep fescue) and a potential reduction in insect damage. It is more tolerant of traffic than Sheep fescue additionally.

New cultivars *Barlegant* and *Beacon* offer unparalleled turf quality parameters for the species in both UK and European trials (BSPB Turfgrass Seed and GEVES Turfgrass List), and *Hardtop* has proven performance in the market. *Mentor* is a listed BSPB variety.

Increasing the proportions of hard fescue in sand-based fairways will assist in sustainable turf management practices of reduced water, nutrient and pesticide inputs.



☐ Greens ☒ Tees ☒ Fairways ☐ Walkways ☒ Roughs

## How to use it



Sowing rate  
20-30g/m<sup>2</sup>



Oversowing rate  
10-20g/m<sup>2</sup>



Sowing depth  
5-10mm below thatch



Mowing height  
down to 7mm

| In the bag       |     | Bag size 20kg |
|------------------|-----|---------------|
| <i>Hardtop</i>   | 50% | Hard fescue   |
| <i>Beacon</i>    | 20% | Hard fescue   |
| <i>Mentor</i>    | 20% | Hard fescue   |
| <i>Barlegant</i> | 10% | Hard fescue   |

Find out more at [barenbrug.co.uk/sports/products/sgt-all-hard](https://barenbrug.co.uk/sports/products/sgt-all-hard)



# SGT Fine Fescue

Pure fine fescue blend, utilising our sustainable grass technology (SGT), with cultivars bred to deliver reduced water, fertiliser and chemical inputs.

- SGT technology offers outstanding turf performance with reduced water, fertiliser and chemical inputs
- An innovative mixture of fine fescue species
- Three #1-ranked cultivars for lawn/fairway use
- 50% hard fescue for increased drought tolerance
- High tolerance to Dollar Spot and Red Thread pathogens



**Usage**

Overseeding, divoting and construction for medium-fine turf on sites with particular drought stress.

**Features & benefits**

Central to the product is a large proportion of hard fescue, a fine fescue species with well-documented tolerance to drought and heat stress and proven performance with low-input maintenance, as well as good overall turf quality for density and visual merit, helping to maintain good aesthetics in the harshest environments. Hard fescue also offers increased Dollar Spot tolerance and a potential reduction in insect damage.

New cultivars of hard fescue *Barlegant* and *Beacon* offer unparalleled turf quality parameters for the species in both UK and European trials (BSPB Turfgrass Seed and GEVES Turfgrass List).

The mix also includes the new #1-rated slender creeping red fescue *Barnoustie* and *Barrissee*, the #1-ranked strong creeping red fescue cultivar for Red Thread tolerance.

☐ Greens ☒ Tees ☒ Fairways ☐ Walkways ☒ Roughs

## How to use it



Sowing rate  
25-35g/m<sup>2</sup>



Oversowing rate  
15-25g/m<sup>2</sup>



Sowing depth  
5-10mm below thatch



Mowing height  
down to 7mm

| In the bag        |     | Bag size 20kg              |
|-------------------|-----|----------------------------|
| <i>Barnoustie</i> | 20% | Slender creeping fescue    |
| <i>Barrissee</i>  | 20% | Strong creeping red fescue |
| <i>Beacon</i>     | 20% | Hard fescue                |
| <i>Barlegant</i>  | 10% | Hard fescue                |
| <i>Barchip</i>    | 10% | Chewings red fescue        |
| <i>Mentor</i>     | 20% | Hard fescue                |

Find out more at [barenbrug.co.uk/sports/products/sgt-fine-fescue](https://barenbrug.co.uk/sports/products/sgt-fine-fescue)

# SGT Rye Fairway

Utilising our sustainable grass technology (SGT) delivering grass requiring reduced water, fertiliser and chemical inputs.

- SGT technology offers outstanding turf performance with reduced water and chemical inputs
- Drought and disease tolerance, and superior colour
- *Barprrium* for fine-leaf grass with proven capacity for nitrogen-use efficiency



**Usage**

Overseeding, divoting and construction of medium-fine turf areas across a range of soil types.

**Features & benefits**

The “driver” of the mixture is *Barprrium* perennial ryegrass. An outstanding fine-leafed ryegrass with proven capacity for nitrogen-use efficiency; put simply, it requires far less nitrogen (up to 50% less) to deliver equivalent turf performance. It also outperforms other ryegrasses in independent drought trials.

*Barprrium* is highly ranked with a mean score of 7.4 on Table L1 Turfgrass Seed 2026 and exhibits strong summer colour, another useful characteristic for low-input golf fairways.

The fine fescue cultivars are chosen for their turf performance and sustainability traits also. The new slender creeping red fescue *Barnoustie* is ranked #1 in the 2026 BSPB/STRI Turfgrass Seed booklet for lawn/fairway use, and in trials at Landlab in Italy *Hardtop* hard fescue and *Barjessica* strong creeping red fescue perform particularly well in periods of heat and drought.

The mixture exhibits high disease tolerance in low-input environments. Hard fescue copes well under Dollar Spot pressure, and both *Barnoustie* and *Barjessica* have excellent Red Thread tolerance.

☐ Greens ☒ Tees ☒ Fairways ☐ Walkways ☒ Roughs

## How to use it



Sowing rate  
25-35g/m<sup>2</sup>



Oversowing rate  
10-25g/m<sup>2</sup>



Sowing depth  
5-10mm below thatch



Mowing height  
down to 10mm

| In the bag        |     | Bag size 20kg               |
|-------------------|-----|-----------------------------|
| <i>Barprrium</i>  | 40% | Perennial ryegrass          |
| <i>Barnoustie</i> | 25% | Slender creeping red fescue |
| <i>Hardtop</i>    | 20% | Hard fescue                 |
| <i>Barjessica</i> | 15% | Strong creeping red fescue  |

Find out more at [barenbrug.co.uk/sports/products/sgt-rye-fairway](https://barenbrug.co.uk/sports/products/sgt-rye-fairway)



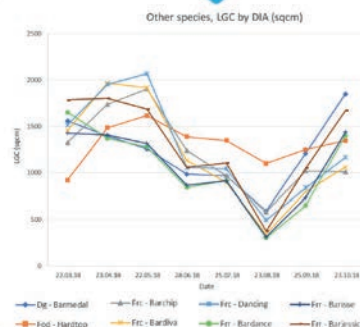


# Why Choose Hard Fescue For Golf Fairways?

The toughest fine fescue for future-proofing medium-fine turf

Barenbrug & Royal Porthcawl

## Climate-Ready Resilience



Graph to show fluctuations in fescue performance (Live Ground Cover assessments) over 9-month period during 2018 in Landlab, Italy. Note the superior performance of Hardtop hard fescue & Barjessica strong creeping red fescue.

## Superior Disease Tolerance



| Dollar Spot Tolerance - All data, all locations 2015 - 2019 NTEP |              |                |                   |               |
|------------------------------------------------------------------|--------------|----------------|-------------------|---------------|
| Cultivars                                                        | FRR (Strong) | FRC (Chewings) | FO (Hard/Sheep's) | FRL (Slender) |
| 15 cultivars                                                     | 12 cultivars | 11 cultivars   | 4 cultivars       |               |
| Mean                                                             | 5.73         | 7.50           | 7.55              | 6.38          |

2015-2019 NTEP Fine fescue trials; all data, all locations.

## Outstanding Drought & Heat Tolerance

- Higher survival rates than red fescue
- Lower stomatal density = reduced water loss
- Proven in Barenbrug & Landlab trials

## Dollar Spot Resistance

- Rated *Good to Excellent*
- Higher tolerance than other fine fescues, including Sheep (Patton et al., 2022)

## Breeding Advancements



| Cultivar  | Shoot Density | Visual Merit | Mean |
|-----------|---------------|--------------|------|
| Barlegant | 7.2           | 7.5          | 7.4  |
| Beacon    | 7.3           | 6.9          | 7.1  |
| Crystal   | 7.4           | 6.8          | 7.1  |
| Sword     | 6.8           | 6.8          | 6.8  |
| Hardtop   | 6.2           | 5.9          | 6.1  |
| Dumas 1   | 5.9           | 5.8          | 5.9  |
| Mentor    | 5.6           | 5.6          | 5.6  |

Data for Hard Fescue under Lawn maintenance; Table L6 BSPB Turfgrass Seed 2026.

## Sustainable, Low-Input Performance



### Thrives in Poor Soils

- Excellent for free-draining, low-fertility environments
- Higher nutrient use efficiency (NUE) than red fescue (Bourgoin, 1997)

### Slow Growth = Less Maintenance

- Less mowing & thatch production
- Perfect for fairways & roughs with infrequent mechanical inputs

## Hard vs Sheep Fescue



### Not All Fescues Are Equal

- Hard is more tolerant to wear & shade (Braun et al., 2020) & Dollar Spot
- More variety choice of hard fescue in market

### Genetic Difference

- Hard = hexaploid (42 chromosomes)
- Sheep = tetraploid (28 chromosomes)

## Part of Barenbrug's SGT Concept



### 4 Pillars of SGT Mixtures:

- Drought Tolerance
- Low Biomass Production
- Nutrient Use Efficiency
- Disease Tolerance

Products available in the SGT range:  
SGT Rye Fairway  
SGT Fine Fescue  
NEW: SGT A1 Hard

**"Barenbrug SGT Fine Fescue is currently our product of choice for links fairways. Following grass loss during the 2018 drought, we needed a seed mixture that would withstand prolonged periods of drought and heat. A discussion with Dr. David Greenshields led to us increasing our hard fescue usage and trialling new and improved varieties of this species. We have seen significant benefit in terms of grass coverage and feel confident that we are in a better position to cope with extreme weather conditions moving forward. It is great to see that Barenbrug have launched SGT Fine Fescue on the back of success at Royal Porthcawl and other venues, in addition to the continued research and development that supports the product."**

Royal Porthcawl Golf Club

\*References: Bourgoin, B. (1997). Variability of fine-leaved fescues (*Festuca* spp.) grown at low nitrogen levels. *International Turfgrass Society Research Journal*; 8: 611-620.

Patton, A., Braun, R., Barnes, M., Nelson, K., Reiter, M., Watkins, E., Kowaleski, A., Koch, P. & Murphy, J. (2022) Fine fescues: Understanding the differences. *Horticulture and Landscape Architecture, Turf-63-W* Purdue Extension, online.

Braun, R., Patton, A., Watkins, E., Koch, P., Anderson, N., Bonos, S. & Brilman, L. (2020). Fine fescues: A review of the species, their improvement, production, establishment, and management. *Crop Science*; 60: 1142-1187.



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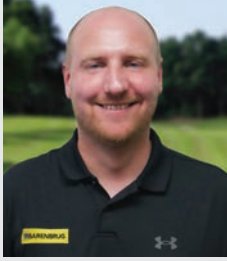
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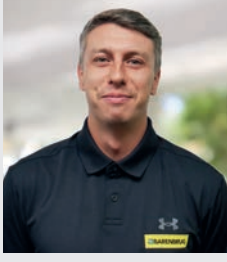
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## Barenbrug

Grass experts since 1904

Our profession is plant breeding: selecting and developing quality grass varieties with the unique characteristics needed to meet the ever-increasing demands of amenity turf surfaces.

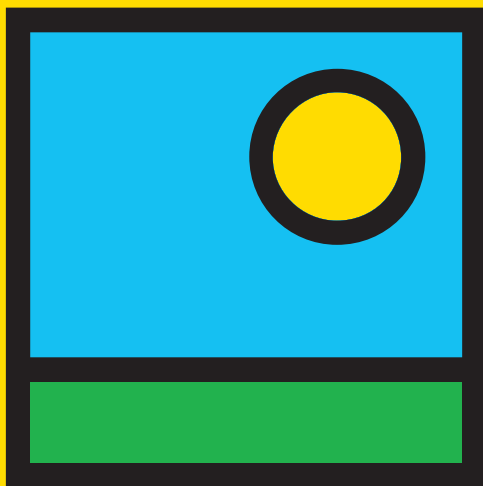
From its founding days in 1904, the Royal Barenbrug Group has grown into a global seed company with breeding and research stations on six continents. Still privately owned, our knowledge and experience of grass seed is second to none. We specialise in plant breeding, seed production, and the international marketing of grasses across a wide range of industries.

At Barenbrug, we work together as a team to serve our clients wherever they need us. We have a team of technical experts based throughout the UK, as well as office locations across the country and as part of the wider Barenbrug Group worldwide. We make our collective knowledge, experience, and global network available to our clients.

With operating companies in 18 countries on 6 continents, we have been the leading grass seed business in the world for over 120 years.

www.barenbrug.co.uk





# BARENBRUG

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**Conditions of sale**

In case of unavailability Barenbrug UK Limited reserves the right to substitute any variety in any mixture with one of similar merit. Any change will be detailed on the bag.  
The placing of an order constitutes an acceptance of our terms and conditions of sale by the buyer.  
Full terms and conditions can be found at [www.barenbrug.co.uk](http://www.barenbrug.co.uk).

