



Carbon4Grass Fescues

Off-setting your carbon footprint
through grass

Origin Amenity Solutions, a leading force in the UK amenity industry



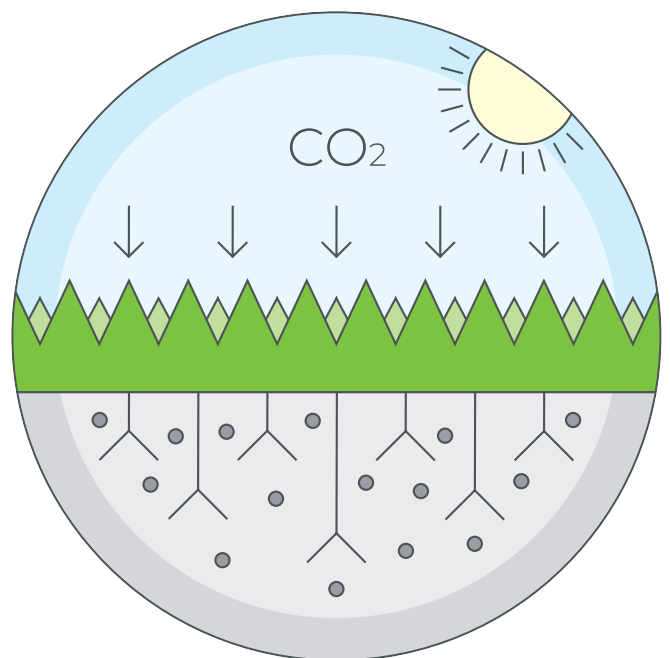
Carbon4Grass is a range of grass seed mixes that have been developed to support the industry's awareness of carbon mitigation in golf, sports, amenity and landscaped areas. Carbon4Grass 100% fescue mixes contain cultivars that sequester relatively more carbon than comparative mixes without compromising on performance quality, offsetting carbon greenhouse gas emissions generated by the clubhouse and course maintenance.

The greenhouse effect

Grasses, just like trees are chlorophyll-based plants, absorbing carbon dioxide (CO_2) from the atmosphere through photosynthesis. A proportion of the absorbed carbon is transferred from the dense canopy of grasses into the fibrous root system and finally into the soil. It is estimated that one hectare of natural, open grassland can sequester up to 2.5 tonnes of $\text{CO}_{2\text{eq}}$ per annum, creating a net carbon sink within the soil profile. For example, areas of long grass on the golf course such as roughs are a valuable resource for 'capturing' carbon.

Managed turf

Intensively managed surfaces on the course including greens, tees, fairways and maintained rough will have a considerable impact on the environment compared with unmaintained grassland. With frequent maintenance and mowing the carbon footprint increases, reinforcing the case for Carbon4Grass seed mixes that mitigate the impact of carbon production.



Carbon is absorbed through grass canopy during photosynthesis and sequestered through the fibrous root system into the soil as plants senesce and decompose.

Carbon4Grass fescue seed mixes

Our range of Carbon4Grass mixes can help mitigate the impact your golf course contributes towards the environment.

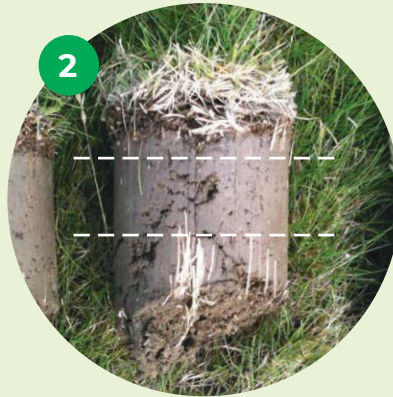
- Absorb carbon dioxide
- Transfer CO₂ from the sward and roots into the soil
- Specially selected Carbon4Grass cultivars sequester more CO₂
- Choice of three specialist 100% fescue mixes for use around the course
- Top performing cultivars
- Highest quality grass seed



The carbon measurement process



Three samples are taken from 1m² grass plots. The carbon content of the soils was measured prior to sowing.



Each sample is divided into three sections, 0 – 15mm, 16 – 50mm, 51-70mm and dried until all humidity is removed.



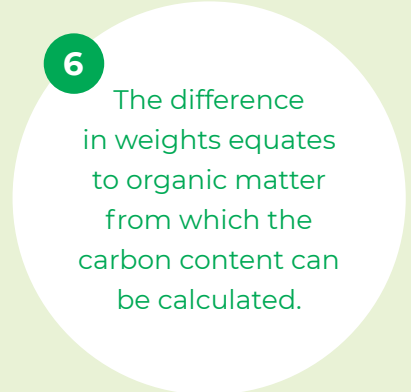
Each sample is finely ground and weighed to 1/1000th of a gram.



Samples are heated to 450°C for 8 hours to burn off the organic matter.



When stabilised at room temperature the sample is re-weighed.



The difference in weights equates to organic matter from which the carbon content can be calculated.

Each trial plot receives the same treatment, number and height of cuts, fertilisation, etc.



R117

100% fine red fescues treated with Germin-8T

25% Bogart: Chewings fescue

25% Greensleeves: Chewings fescue

25% Absolom: Slender creeping red fescue

25% Beudin: Slender creeping red fescue

Where to use

- Greens
- Surrounds

Order code: OAI000849

Pack size: 20kg

| Sowing rate | Overseeding rate | Sowing depth | Mowing height |
|-------------------------|-------------------------|--------------|---------------|
| 20 – 30g/m ² | 10 – 30g/m ² | 4 – 8mm | Down to 4mm |



Germin-8T
Treated Seed



Fine
Leaved



High Shoot
Density



Disease
Tolerant



Salt
Tolerant



Close Mow
Tolerant



R5

100% fescue blend treated with Germin-8T

30% Greensleeves: Chewings fescue

20% Absolom: Slender creeping red fescue

20% Hastings: Strong creeping red fescue

30% Dumas 1: Hard fescue

Where to use

- Surrounds and approaches
- Tees
- Fairways
- Roughs

Order code: OAI000837

Pack size: 20kg

| Sowing rate | Overseeding rate | Sowing depth | Mowing height |
|-------------------------|-------------------------|--------------|---------------|
| 10 – 30g/m ² | 10 – 20g/m ² | 4 – 6mm | Down to 7mm |



Germin-8T
Treated Seed



Rapid
Establishment



Strong
Roots



Fine
Leaved



High Shoot
Density



Year-round
Colour



Wear
Tolerant



Shade
Tolerant



Drought
Tolerant

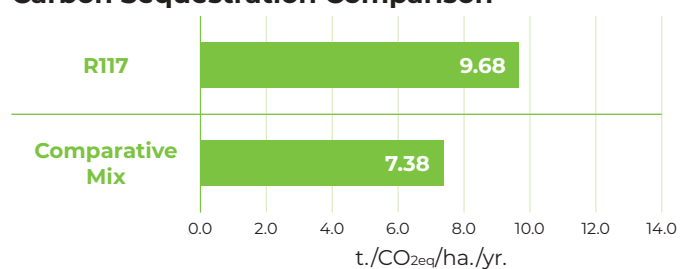


Disease
Tolerant

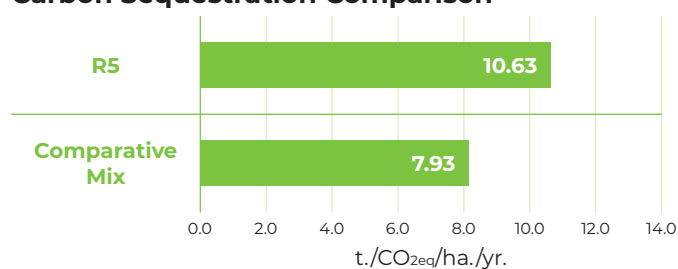


Cleaner
Cut

Carbon Sequestration Comparison



Carbon Sequestration Comparison





Pure Fescue

Multi-fescue blend treated with Germin-8T

20% Quatro: Sheep's fescue

20% Dumas 1: Hard fescue

20% Hastings: Strong creeping red fescue

20% Absolom: Slender creeping red fescue

20% Greensleeves: Chewings fescue

Where to use

- Approaches
- Tees
- Fairways
- Roughs

Order code: OAI000865

Pack size: 20kg

| Sowing rate | Overseeding rate | Sowing depth | Mowing height |
|-------------------------|-------------------------|--------------|---------------|
| 25 – 30g/m ² | 10 – 20g/m ² | 4 – 6mm | Down to 7mm |



Germin-8T
Treated Seed



Fine
Leaved



High Shoot
Density



Shade
Tolerant



Drought
Tolerant



Disease
Tolerant



Salt
Tolerant



3 Way Fescue

100% red fescue blend treated with Germin-8T

25% Greenmile: Chewings fescue

25% Absolom: Slender creeping red fescue

50% Hastings: Strong creeping red fescue

Where to use

- Tees
- Fairways
- Roughs

Order code: OAI000855

Pack size: 20kg

| Sowing rate | Overseeding rate | Sowing depth | Mowing height |
|-------------------------|-------------------------|--------------|---------------|
| 20 – 30g/m ² | 10 – 20g/m ² | 4 – 6mm | Down to 7mm |



Germin-8T
Treated Seed



Strong
Roots



High Shoot
Density



Shade
Tolerant

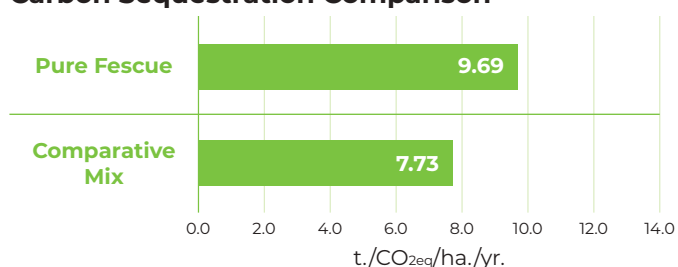


Drought
Tolerant

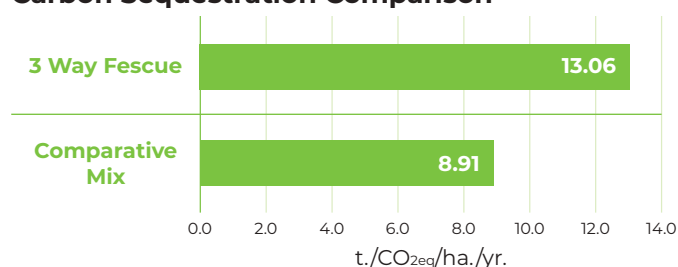


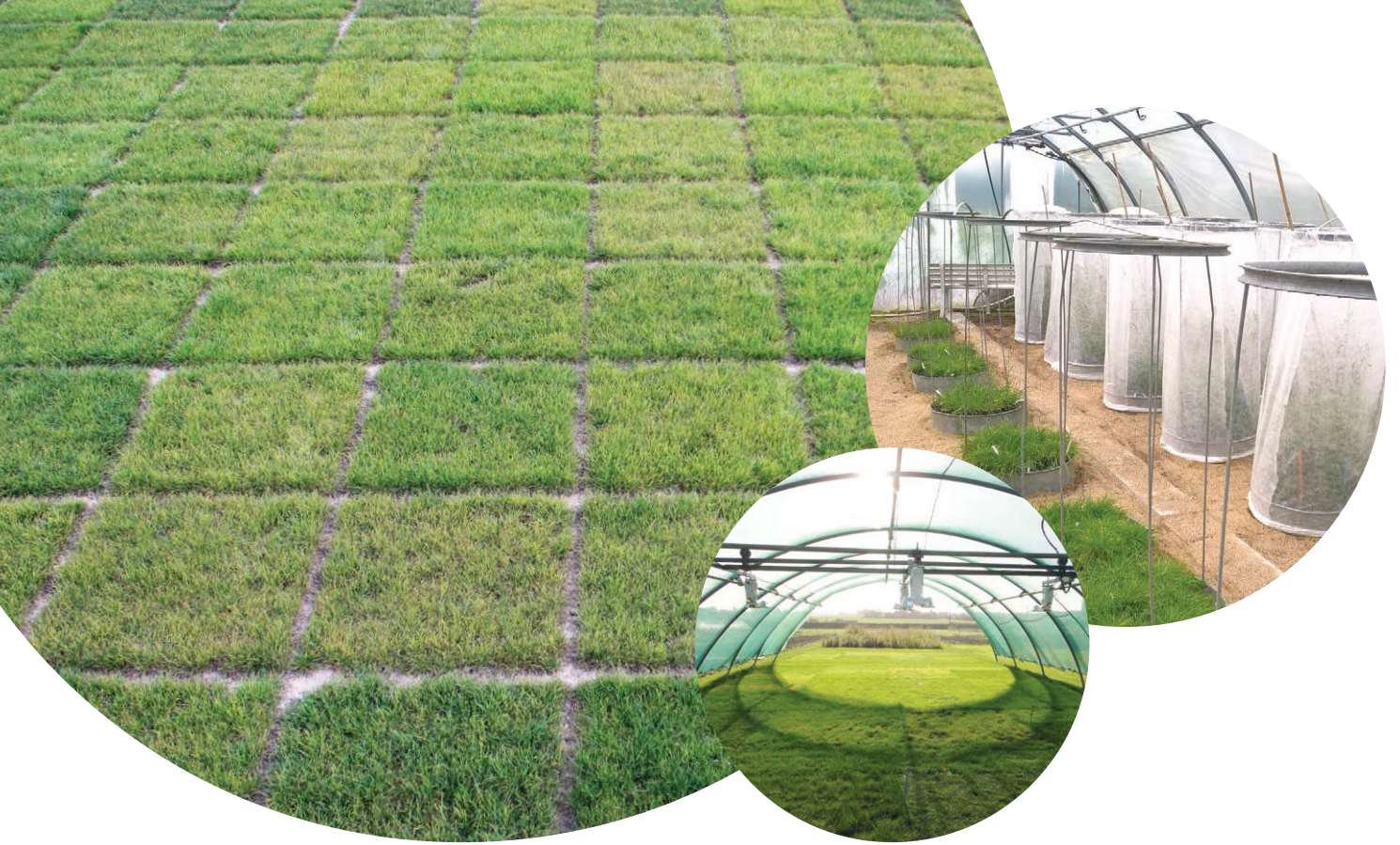
Disease
Tolerant

Carbon Sequestration Comparison



Carbon Sequestration Comparison





18 years of carbon research

Origin Amenity Solutions has been working with dedicated grass breeding and turf researchers since 2005 to identify the differences in carbon sequestration values of managed amenity grass species.

Utilising well established grass plots for the research, the study revealed significant differences between each cultivar and their capacity to store and sequester carbon.

Over the years the research programmes have had many findings. Of particular note is the ability of red fescue to hold more carbon in the roots than other species, but also the in-efficiency of transferring it into the soil. Comparatively perennial ryegrass will hold the least amount of carbon but demonstrates a more efficient transfer of carbon into the ground. Studies have developed since 2005 with new cultivars from the breeding programme introduced into the research over time. The differences in the efficiency of individual cultivars to sequester carbon proved to be significant and this knowledge has been used to create a range of 10 Carbon4Grass mixes, combining increased levels of carbon sequestration potential with desirable amenity characteristics.

“The Carbon4Grass range of mixes has been developed after 18 years of controlled trial plot studies. It follows published research of carbon sequestration in trees which aroused our curiosity to the possibility that grasses could support the same concept of carbon sequestration through their ligneous roots systems and that differences must exist between species and cultivars. It has enabled the team to create a comprehensive range of Carbon4Grass mixes that is mindful of the amenity environment whilst offering carbon offset solutions for greenkeepers, landscapers and grounds maintenance professionals.”

Howard Wood
Independent Environmental Consultant



Working with you to achieve excellence





Making an impact

Changes in our climate are dramatically challenging and shaping our environment. It is within everyone's duty of care to ensure we do the utmost to minimise or offset our carbon footprint and choosing Carbon4Grass mixes is a positive contribution without compromising on quality.



Combined excellence

Origin Amenity Solutions combines the expertise, innovation, knowledge and experience of four leading brands – Headland Amenity, Rigby Taylor, Symbio and Turfkeeper. OAS operates at the leading-edge of plant science and turf technology working with a broad spectrum of amenity products alongside integrated pest management and microbiology programmes.

To find out more about Origin Amenity Solutions and our plans for the future of the turf industry, follow us:

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Our brands:



www.originamenity.com