QUALITY SPORTS GRASS SEED MIXTURES 2015 COvering the Worlds Greatest Stages
Supporting the natural turf industry through sponsorship and research

Johnsons Sports Seed remains the only dedicated sports turf seed range in the UK. We are major supporters of the UK turf management industry, being lifelong exhibitors at the BIGGA, BTME exhibition, and major sponsors of the IOG Turf Management awards. It is through these close relationships with the industry’s leading associations, turf managers, agronomists and the world’s largest seed breeders that we are able to bring you what we believe is our strongest line up of sports turf seed mixtures ever!

Market leading seed portfolio

We believe strongly in the value of global breeding backed up with local independent trials and product evaluation. Our customers can judge for themselves the quality of our seed mixtures, based on genuine scientific trials results, rather than marketing hype. 2015 sees DLF/Johnsons cultivars topping the Turfgrass seed booklet once again. Amongst the highlights is the new sports turf perennial ryegrass Eurocordus which completes the Top ranked line up in J Premier Pitch v.8.1, our highest performance renovation mix ever! New Humbolt chewings fescue and Beudin slender creeping red fescue join our fine turf line up, topping the tables for tee and fairway use with the highest ratings for visual merit and exceptional disease resistance.

**New Tetraploid ryegrasses take centre stage**

Our new tetraploid ryegrass cultivars took centre stage at the World Cup in Brazil. As world leaders in tetraploid ryegrass technology we have now introduced the new second generation tetraploid Fabian, which combines incredible disease resistance and root strength with improved shoot density and wear tolerance, now included in the new J Tee, J Pitch & J 4Turf mixtures.

**Pioneering seed coat technology**

Johnsons Seeds lead the world in seed coat technologies, helping turf professionals save both time and money and ensuring perfect results are achieved every time.

We recognise that not everyone manages a championship venue however, our latest research shows how the unique iSeed® coating can further improve your overseeding results, even when seeding into less than perfect conditions.

All Johnsons Sports turf mixtures are pre-coated with GroMax biostimulant and our most popular mixtures are also available with the patented iSeed® nutrient coating, ensuring that you get even better value from the top class cultivars in your Johnsons mixtures.

For information on how Johnsons could improve the results of your next overseeding program talk to your local distributor or our team of regional technical support managers.

Derek Smith
AMENITY SALES & MARKETING MANAGER
# MIX SELECTOR

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- Highly Recommended
- Recommended
Technical Support
Our experienced team of national technical managers are available for Johnsons customers, delivering sound advice on mixture & cultivar selection, field support and maintenance.

Global Research, UK Development
Significant investment in staff and facilities has been made across the globe to support this vital area of the company. Breeding and mixture trials of all species are grown and evaluated in the UK - customers are always welcome to visit our research & demonstration sites. Close links with leading independent organisations such as STRI, TGA, BIGGA, ILI & IOG ensure that Johnsons Sports Seed mixtures remain at the forefront of technical development in amenity grass.

Following the successful establishment of our Irish demonstration plots, we are looking to develop further sites across the UK for product evaluation and customer training.

All products independently tested for proven results.

Johnsons, A History Of Success
For over 190 years Johnsons Sports Seed mixtures have been helping to produce quality sports turf with an unequalled reputation for technical excellence, reflecting the standards set by the people who use them – men and women who lead the way in sports turf management. Every year more of the UK’s leading turf management professionals choose Johnsons seed.

Johnsons Sports Seed mixtures are produced by the world’s largest grass breeder and producer, DLF Trifolium Ltd.
Mixing

Our seed mixtures are produced in our purpose built storage and processing facilities which are staffed by our fully trained personnel. We have the largest dedicated ‘amenity only’ mixing plant in the UK with separate rye and non ryegrass mixers. This ensures the efficient production and despatch of all products & guarantees results.

Seed Lot Preparation

Our seed is cleaned and processed in our own facilities. Using our own laboratories we pay particular attention to the following operations:

DRYING - to ensure that seed stays viable for the longest possible time.

PURITY - selection quality in excess of HVS standard, ensuring seed does not contain anything other than the cultivar that was produced.

GERMINATION - all amenity seed lots checked on intake and tested at regular intervals during storage to ensure the highest levels of germination.

P & G CERTIFICATES - available upon request.

Production

The quality of the seed that you use depends on the quality of the production. Johnsons choose their production areas depending on the climate and the expertise of the producers. These producers receive constant technical support and the production fields are regularly inspected.

Selection, Production, Quality Seed
Our world is changing quickly, customers are always looking for the best solutions and high quality grass seed products. However, they are also looking to reduce inputs of herbicides, fertilisers and water to preserve our environment.

The R&D department of DLF TRIFOLIUM has been working for a long time on products that need lower inputs and several years ago began collaboration with the Yara fertiliser company. The aim was to combine the best grass seed genetics with all the nutrients needed by a seedling in a single coating, so as to improve the establishment of the plant but also reduce inputs.

After substantial laboratory, greenhouse and user trials, iSeed® was developed and has subsequently been successfully tested in user trials in many European countries.

iSeed®: Years of research and development

Traditionally fertilisers can be applied in several ways, either broadcast, in bands, mixed with seed, or as a seed coating. Phosphorus is especially important as a pre-seeding application for early establishment as P is easily fixed in the soil into forms that are unavailable for plant uptake. When broadcasting fertiliser, the utilization rate of phosphorus is generally between 5 and 10%. Nutrient uptake is faster (20%) when the nutrients are available in the soil and not broadcast. This is a marked advantage when overseeding.

The risk of applying fertilisers as a seed coating is that they are likely to cause phytotoxicity, as some soluble fertilisers can increase salinity. iSeed® has changed this rule!

iSeed® is a patented seed coating that focuses on improving nutrient utilization during the early stages of plant growth. Typical nitrogen content found in other commercial products is 1-2%, with the effects often being negligible. The iSeed® coating contains 20% nitrogen and 4% phosphate, the N being a combination of fast acting and slow release. As the fertiliser is coated onto the seeds, the germinating and developing seedling receives the benefit, not the surrounding plants. This is particularly important when overseeding into a competitive sward.

A unique solution

The nitrogen and phosphate in iSeed® are up to four times more efficient compared to broadcast applied ordinary fertilisers.

With iSeed®, the key nutrients are attached to the germinating seed and developing roots. The roots and shoots grow rapidly and the seedlings become strong and vigorous. This improves the uptake of all the available soil nutrients and decreases nutrient losses into the environment by fixation or leaching.
WHAT OUR CUSTOMERS THINK

We have been using Johnsons J Premier Wicket and Ji Premier Wicket on our square since I became full time head groundsman in 2010. It’s delivered excellent results, rapid establishment, good health and wear tolerance over the long cricket season.

Simon Lee
Head Groundsman | Somerset County Cricket Club

The iSeed germinated at the same speed as the competitor but really kicked on around day 10,” says Andy. “After two weeks, the renovated wickets were like chalk and cheese and I was amazed by the vitality of the grass plants.

Andy Mackay
Head Groundsman | Sussex County Cricket Club

In 35 years of turfgrass management I have never seen seed germinate as quickly or establish as comprehensively as Johnsons iSeed®.

Paul Worster
BIGGA Chairman 2010 | Courses Manager Minchinhampton Golf Club

The fact that the seed coating carries all the nutrients that the plant needs to gain a great start appealed because of the clear financial benefits of not having to apply a pre-seed fertiliser. The results have been impressive.

Martin Knight
Head Groundsman | Worcester Rugby Club

The iSeed® treatment significantly affected establishment and growth, improving the rate of both!

STRI
(Source: STRI Bingley 2007)
New GroMax Seed Treatment

- Improves establishment
- Stimulates root growth
- Improved tolerance to stress
- Enhances water and nutrient uptake

Biostimulants assist the seedling’s ability to take advantage of the soil’s own inherent reserves of nutrient by stimulating the soil’s microflora, resulting in improved root growth and establishment.

GroMax is a dry formulation of natural humates and humic acids, seaweed extract, a proprietary blend of natural sugars (sucrose) vitamins (B complex & K) soluble potash and buffering agents. The product is compatible with most micro-nutrients, fertilisers and pesticides.

**Humic acids**
- Rich in auxin type substances which enhance antioxidant synthesis – important in increasing plant metabolism under stress conditions
- Important high carbon food source for soil micro-organisms
- Improve the permeability of cell wall membranes in roots allowing more rapid absorption of essential nutrients

**Seaweed Extract**
- Contains high levels of cytokinins which promote cell division and lateral root growth, and delay the ageing process of plant tissue
- Stimulates root growth after damage by disease or root feeding insects, or under conditions of temperature, water or salt stress

**B-Complex and K Vitamins**
- Act as important catalysts to enhance and drive plant metabolism. Vitamin B1 is widely used as a rooting aid

**Amino acids**
- Form the building blocks of proteins – essential for plant growth and metabolism

**Potassium**
- Plays a vital role in disease resistance and overall hardiness of grass plants

**Sucrose**
- Serves as high energy food source for plant and soil micro-organisms
**Perennial ryegrass**

- **Latin name:** Lolium perenne
- **Seeds/gram:** 600
- **Germination:** 1-2 weeks
- **Shoot density:** 200-350 shoots/100cm²
- **Cutting height:** Normal: 28-40mm, Not less than 4mm
- **Growth:** In tufts

**Distinguishing features:**
- Leaves largely parallel-sided, but narrow to a fine tip
- Upper leaf surface dull with clear ribs
- Underside of leaf glossy with prominent keel
- Leaves and stems reddish at base
- Leaf blade folded in the shoot
- Ligule up to 2mm long
- Clear sheath/auricle

**Properties:**
Perennial ryegrass has very good wearing qualities and germinates quickly. The species is highly suitable for both sports areas and fine turf. Ideal for overseeding because of its rapid establishment in a range of soils.

**Key Cultivars**

- **BIZET 1** With a proven track record under heavy wear at many of the UK’s leading stadia, and in independent trials, Bizet's ability to recover rapidly make it a reliable mixture partner. In a world of close media scrutiny the incredible disease resistance and strong colour do not disappoint.

- **BERLIOZ 1** Often selected with its sister cultivar Bizet, Berlioz performs well under high wear conditions. Highlights are its high shoot density and rapid recovery.

- **CLEMENTINE** Quite simply the cutting edge of modern fine turf ryegrass technology. Bred for exceptional shoot density, the fine leaf and clean cut are just two of the reasons that make this the No. 1 ranked cultivar for lawn, fairway and close mown conditions! If you are searching for the ultimate cultivar to include in your new wicket mixture, look no further!

- **CHARDIN** Quality and adaptability best describe Chardin. Tolerating the close mown surface of the cricket square, whilst combining high shoot density, a fine leaf, very high disease resistance, exceptional wear tolerance and fast recovery at the end of the season.

- **COLUMBINE** No. 1 ranking under intense wear for ground cover, wear tolerance & rapid recovery, the excellent colour and disease resistance makes this an attractive addition to our high performance winter pitch mixtures.

- **DICKENS 1** Delivers a stunning turf when managed between 10 - 20mm thanks to its combination of incredible shoot density and fineness of leaf, along with a high tolerance to red thread and medium dark year round colour. The strong regrowth also makes this a top performer under close mown conditions.

- **NEW EUROCORDUS** No. 1 ranking under intense wear, excellent shoot density and strong recovery make this a strong addition to our sports renovation range.

- **EURODIAMOND** No. 1 ranking under intense wear.

- **MONROE** The ultimate high performance all-rounder!! Already included on the specification list of some of the country’s leading turf managers. Monroe is ranked in the top 3 for all management conditions, something that has never been achieved before! Incredible shoot density, fine leaf, recovery & disease resistance deliver exceptional grass coverage on the pitch, wicket and fairway.
New 4turf™ Turf type tetraploid perennial ryegrass

Latin name: Lolium perenne
Seeds/gram: 550
Germination: 1-2 weeks
Shoot density: 150-250 shoots/100cm²
Cutting height: Normal: 28-40mm
Not less than 4mm
Growth: In tufts

Distinguishing features:
- 4 sets of chromosomes
- Leaves largely parallel-sided, but narrow to a fine tip
- Upper leaf surface dull with clear ribs
- Underside of leaf glossy with prominent keel
- Leaves and stems reddish at base
- Leaf blade folded in the shoot
- Ligule up to 2mm long
- Clear sheath/auricle.

Properties:
4 Turf tetraploid Perennial ryegrass has very good wearing qualities and germinates quickly. Exceptional tolerance to a broad range of environmental stresses. Increased chloroplast and chlorophyll production for improved nitrogen efficiency and deeper colour throughout the seasons. Enhanced root development, stronger and deeper root system. Significantly increased disease resistance, fusarium, leaf spot and red thread. The species is a highly suitable mixture partner for sports turf thanks to its slightly more open nature & because of its rapid establishment in a range of conditions.

Chewings fescue

Latin name: Festuca rubra commutata
Seeds/gram: 1,000
Germination: About 2 weeks
Shoot density: 450-800 shoots/100cm²
Cutting height: Normal: 20-35mm
Not less than 5mm
Growth: In tufts

Distinguishing features:
- Leaves fine, stiff and filamentous
- Young leaf folded in shoot (generally remains unfolded when mature)
- Ligule short, blunt and difficult to distinguish
- Roots bunched together
- No rhizomes
- Leaf sheath complete, not overlapping.

Properties:
The high shoot density and tolerance to close mowing makes the species particularly suitable for golf greens, tees, and fairways. Maintains good colour and a fine appearance throughout the year. Requires minimal water and fertiliser. Tolerates acidic soils.

Key Cultivars

NEW FABIAN This second generation 4Turf Tetraploid demonstrates the significant progress that is already being made in this new field of sports turf ryegrass technology. Bred by DLF Trifolium, currently the market leaders. Fabian delivers a significant increase in wear tolerance, shoot density and recovery over first generation tetraploids, whilst maintaining the exceptional root system, stress tolerance and disease resistance.

DOUBLE Rapid establishment, deep rooting, proven resistance to common sports turf diseases in every major European trial. Maintains exceptional turf quality and a deep green year round colour.

BLENHEIM The high shoot density and attractive winter colour make this an ideal mixture partner for inclusion in high quality fine turf mixtures.

NEW HUMBOLDT No. 1 rating for tee and fairway use. The combination of the high shoot density and excellent disease resistance help to deliver the highest rating for visual merit in the 2015 trial results.

MUSICA Excellent tolerance to close mowing. Proven in independent trials and gracing many of the UK’s finest golf courses, the combination of exceptional turf density and outstanding summer colour make Musica the essential ingredient in any quality golf course mixture.
**Slender creeping red fescue**

- **Latin name:** Festuca rubra litoralis  
- **Seeds/gram:** 1,000  
- **Germination:** About 2 weeks  
- **Shoot density:** 450-800 shoots/100cm²  
- **Cutting height:** Normal: 20-35mm  
  Not less than 5mm  
- **Growth:** Creeping with short rhizomes  

**Distinguishing features:**
- Leaves stiff and filamentous  
- Young leaf folded in shoot (generally remains unfolded when mature)  
- Ligule short, blunt and difficult to distinguish  
- Short rhizomes  
- Leaf sheath complete, not overlapping.

**Properties:**
The high shoot density and tolerance to close cutting makes the species particularly suitable for golf greens, tees & fairways. Moderately salt tolerant. The runners can regenerate cover in worn areas. Mixes well with Festuca rubra commutata.

**Key Cultivars**
- **BEUDIN** A welcome addition to the Johnsons portfolio, outstanding turf quality and shoot density under both fairway and close mown conditions increase ball speeds and reduce invasion by poa and other coarse grasses.
- **CEZANNE** A proven fine fescue, excellent salt tolerance, combining high shoot density and outstanding resistance to fusarium with the versatility to perform well under both fairway and golf green conditions. Tolerates hot/dry conditions as well as cold/temperate. Winter colour stands out for the species. A sustainable solution.
- **VALDORA** Selected for its suitability within the oceanic European climatic region, its excellent shoot density under both fairway and close mown conditions make this a strong addition to any fine turf mixture. High disease resistance and good summer colour being key characteristics.

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**Sheeps and Hard fescue**

- **Latin name:** Festuca ovina  
- **Seeds/gram:** 950  
- **Germination:** 2-3 weeks  
- **Shoot density:** 800-1000 shoots/100cm²  
- **Cutting height:** Normal: 15-35mm  
  Not less than 5mm  
- **Growth:** In tufts  

**Distinguishing features:**
- Very fine leaved plant with high shoot density  
- Leaves are thread like, hairless with a strongly ribbed ridged upper surface  
- Leaves greyish to blue green colouration  
- Characteristically forms whorls as a mature plant (Sheeps fescue)  
- Auricles are described as absent or much reduced  
- Ligule is very short  
- Rhizomes absent  
- Leaf sheaths open and overlapping.

**Properties:**
A highly drought tolerant, low nutrient demand grass. Some cultivars tolerate very close mowing. A highly flexible species used in a diverse range of mixtures from golf to moorland. It is particularly useful in low maintenance situations and has a tolerance to a wide range of soils from acidic to neutral. Visually attractive if left uncut.

**Key Cultivars**
- **QUATRO No. 1 rating across European trials** A breakthrough cultivar in fine turf fescues. A fine leaved appearance and level of shoot density that can put the best red fescues to shame. Exceptional salt tolerance and stand out disease resistance, especially to red thread and fusarium. Quatro is hard to beat anytime of year but it is in the winter that the natural colour sets it apart! A truly beautiful cultivar. Perfect for links applications and sustainable management programs.
- **MANETTO** The perfect partner to Quatro, high salt tolerance, fine leaved and exceptional density. Again it’s the excellent natural deep green colour throughout the season and resistance to fungal disease that are the stand out features. Blends perfectly with red fescue for high performance fescue turf.
### Strong creeping red fescue

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<td>Normal: 20-35mm Not less than 12mm</td>
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<td>Growth:</td>
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**Distinguishing features:**
- Leaves stiff and filamentous
- Young leaf folded in shoot (tends to remain unfolded when mature)
- Ligule short, blunt and difficult to distinguish
- Long rhizomes
- Leaf sheath complete, not overlapping.

**Properties:**
Rhizomatous growth stabilises root zones and provides some recovery from damage. This species is used in turf production for binding. Strong creeping red fescue is not suited to close mown areas such as golf greens. It is, however, used in some tees and fairway mixtures as it has some regenerative capacity due to its rhizomes.

### Tall fescue

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<td>In tufts</td>
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</tbody>
</table>

**Distinguishing features:**
- Strongly veined upper leaf surface
- Blade rolled when young
- Large flat mature leaf
- Ligules short
- Small hairy auricles
- Purple red leaf sheath.

**Properties:**
Very good resistance to extremes of heat and cold. Very high drought tolerance. Moderate to good wear tolerance. Some varieties do form rhizomes.

### Smooth stalked meadow grass

<table>
<thead>
<tr>
<th>Latin name:</th>
<th>Poa pratensis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeds/gram:</td>
<td>3,000</td>
</tr>
<tr>
<td>Germination:</td>
<td>3-4 weeks</td>
</tr>
<tr>
<td>Shoot density:</td>
<td>200-350 shoots/100cm²</td>
</tr>
<tr>
<td>Cutting height:</td>
<td>Normal: 20-35mm Not less than 8mm</td>
</tr>
<tr>
<td>Growth:</td>
<td>Creeping with rhizomes</td>
</tr>
</tbody>
</table>

**Distinguishing features:**
- Leaves dark green or with bluish bloom
- Of uniform width, abruptly terminating in boat-shaped tip
- Two pale parallel lines visible along midrib when leaf is held up against light
- Underside of leaf with keel
- Leaf blade folded in the shoot
- Ligule short, rounded, 1-3mm long.

**Properties:**
Forms an attractive carpet with good wearing qualities and regenerative ability. Slow to establish. Ideal for turf production, tees and sports areas.

---

**Key Cultivars**

**ROSSINANTE** Representing a new generation of fine turf strong creeping red fescue, maintaining the aggressive establishment and rhizomatous rooting of a traditional red fescue with the turf quality to match more traditional fine turf red fescue species. The first rubra rubra we have been able to enter into close mown trials. The high shoot density is maintained even down to 6mm.

**CANNAVARO No. 1 rating** Another breeding innovation from the DLF genetic portfolio. Whilst not currently included within the Johnsons range, Cannavaro offers the finest leaf, highest shoot density and best year round colour of any Turf tall fescue in trial. Cannavaro is available for special mixtures.

**SOMBRERO No. 1 rating** Re-setting the benchmark for smooth stalked meadow grass, topping trials for both fine and sports turf use. The combination of its fine leaved appearance, high shoot density and rugged wear tolerance and recovery make Sombrero the first choice for professional turf managers.
**Browntop bent grass**

| Latin name: | Agrostis capillaris syn. tenuis |
| Seeds/gram: | 10,000 |
| Germination: | 2-3 weeks |
| Shoot density: | 400-600 shoots/100cm² |
| Cutting height: | Normal: 4-12mm; good durability at 5mm |
| Growth: | Creeping mainly short rhizomes |

**Distinguishing features:**
- Leaves matt green and broadest at base, gradually narrowing to a fine tip. Leaf with parallel venation, no keel. Upper surface and lower surface of similar appearance.
- Leaf rolled in shoot. Ligule short, truncated, 0.5-2.0mm long. Short rhizomes, to a lesser degree, stolons.

**Properties:**
- Ideal for golf greens in a mixture with Festuca rubra commutata and Festuca rubra litoralis. Does best under relatively poor growth conditions. Over-fertilising, over-watering and compact or waterlogged soil will result in displacement of the species by Poa annua.

**Creeping bent grass**

| Latin name: | Agrostis stolonifera |
| Seeds/gram: | 12,000 |
| Germination: | About 2 weeks |
| Shoot density: | 400-600 shoots/100cm² |
| Cutting height: | Normal: 3-12mm Not over 15mm |
| Growth: | Creeping stolons |

**Distinguishing features:**
- Leaves matt grey-green and broadest at base, gradually narrowing to a fine tip. Leaf with ribs above. Leaf rolled in shoot. Ligule rounded, lightly toothed, up to 5mm long. Can root at nodes. Numerous stolons.

**Properties:**
- High tolerance to close cutting. Relative to browntop bent grass, requires intensive management, fertilising and watering. Tends to become dormant in winter.

**Velvet bent grass**

| Latin name: | Agrostis canina |
| Seeds/gram: | 12,000 |
| Germination: | About 2 weeks |
| Shoot density: | 700-800 shoots/100cm² |
| Cutting height: | Normal: 3-10mm Not over 15mm |
| Growth: | Slender creeping stolons |

**Distinguishing features:**
- Leaves bright green or grey green, finely bladed. Hairless & finely ribbed above. Ligules often pointed, 2-4mm long. Numerous slender stolons rooting at the nodes.

**Properties:**
- Of the bent grass species, velvet bent tolerates the closest cutting, forming a dense attractive sward which can help to prevent the invasion of Poa annua. This native bent grass has the highest natural resistance to common turf grass diseases and exceptional drought tolerance. Over feeding will cause excessive growth and thatch build up.

---

**Key Cultivars**

**ARROWTOWN No. 1 Rating** The Johnsons' seed range already offered the strongest bentgrass portfolio in the UK but Arrowtown is a cultivar set to rewrite the rule book. Arrowtown was bred from exceptionally fine and dense plants collected from greens at Arrowtown Golf Club in NZ. The really exceptional level of shoot density and fineness of leaf even at the closest of cuts deliver maximum ball speed and trueness potential.

**MANOR** This New Zealand bred cultivar has exceptional shoot density and a high tolerance to close mown wear, helping to prevent the spread of Poa annua. Manor also has excellent tolerance to fusarium. An ideal alternative to a fescue for inland courses wishing to reduce Poa annua and improve green speed.

**COBRA NOVA No. 1 rating** Quite simply the highest rated creeping bentgrass in both STRI and NTEP trials suitable for golf greens. The fine leaf, exceptional density and remarkable colour lead the market. Tolerates mowing down to 2.5mm.

**VILLA 1** Proven results across Europe, exceptional shoot density and wear tolerance under close mown management, attractive colour and exceptional disease resistance.
GOLF MIXTURES

Johnsons Sports Seed is made up of a range of mixtures for greens, tees, fairways and roughs. Within each mixture the varieties have been carefully selected for top performance.

Fast, True greens
Johnson's Sports Seed is selected for year round homogeneous surfaces with a lack of disease. Choices of mix can be made from traditional high input mixtures to sustainable solutions based on the most recent research developments.

Low growing fairways
The fairway surface is always under pressure as it performs such an important task. The annual growth of mixtures containing modern cultivars from the Johnsons Sports Seed range such as Quatro & Manetto fine fescue is less than many standard mixtures and consequently a more satisfactory quality turf, along with reduced costs and carbon outputs can be achieved.

Improved wear tolerance
Increased wear tolerance eases maintenance and ensures that the grass, even in the most exposed areas, meets the needs of the most demanding players.

Hardwearing tees
Johnson's Sports Seed tee mixtures allow frequent play even on relatively small tee areas. High density and wear tolerance give a perfect turf for ideal teeing off. Overseeding with carefully selected mixtures provides a quick recovery.

Long lasting low input rough
The Johnsons Sports Seed range for golf roughs is designed to reduce input requirements and improve visual quality without slowing play.

COVERING THE WORLDS GREATEST STAGES

“I have chosen Johnsons Sports Seed for the overseeding of all the main areas of the course, in particular the J Fescue mixture. The varieties are top rated and perform exceptionally well in our links environment. With the added pressure of the upcoming Open Championship we rely on high quality seed to compliment our preparation work.”

Craig Gilholm
Links Manager | Royal Liverpool Golf Club
The Open Championship 2014
## GREEN Golf & bowling greens

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>MUSICA</td>
<td>Chewings Fescue</td>
<td>7.8</td>
</tr>
<tr>
<td>40%</td>
<td>CEZANNE</td>
<td>Slender Creeping Red Fescue</td>
<td>7.7</td>
</tr>
<tr>
<td>10%</td>
<td>ARROWTOWN</td>
<td>Browntop Bent</td>
<td>7.9</td>
</tr>
<tr>
<td>10%</td>
<td>MANOR</td>
<td>Browntop Bent</td>
<td>7.2</td>
</tr>
</tbody>
</table>

**SOWING RATE** 20-30g/m²  **OVERSOWING** 10-20g/m²  **MOWING HEIGHT** Down to 4mm

**Fast sustainable greens**

- Highest rated bentgrass cultivars
- Traditional green specification
- Highly tolerant of close mowing
- Fine, dense turf
- Excellent disease resistance, & natural colour

**GroMax** treated, maximises seedling development

## RYE GREEN Intense wear, golf & bowling greens

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
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<tbody>
<tr>
<td>30%</td>
<td>CLEMENTINE</td>
<td>Perennial Ryegrass</td>
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<tr>
<td>30%</td>
<td>DICKENS 1</td>
<td>Perennial Ryegrass</td>
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<tr>
<td>20%</td>
<td>CEZANNE</td>
<td>Slender Creeping Red Fescue</td>
<td>7.7</td>
</tr>
<tr>
<td>10%</td>
<td>MANOR</td>
<td>Browntop Bent</td>
<td>7.2</td>
</tr>
<tr>
<td>10%</td>
<td>JORVIK</td>
<td>Browntop Bent</td>
<td>6.6</td>
</tr>
</tbody>
</table>

**SOWING RATE** 25-35g/m²  **OVERSOWING** 10-20g/m²  **MOWING HEIGHT** Down to 4mm

**Ideal for renovation of extremely heavily worn greens**

- New Clementine No. 1 rated UK cultivar under close mowing!
- Fast establishment
- New cv’s for improved wear under extreme close mowing
- Excellent recovery
- Exceptional fineness of leaf
- High shoot density

**NEW FORMULATION 2015**

**GroMax** treated, maximises seedling development
PREMIER GREEN  Golf greens, high performance renovation mix

ALL BENT  Golf greens (A capillaris)

**PREMIER GREEN**

<table>
<thead>
<tr>
<th>%</th>
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<th>Species</th>
<th>STRI Rating</th>
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<tbody>
<tr>
<td>20%</td>
<td>MUSICA</td>
<td>Chewings Fescue</td>
<td>7.8</td>
</tr>
<tr>
<td>20%</td>
<td>BEUDIN</td>
<td>Slender Creeping Red Fescue</td>
<td>7.8</td>
</tr>
<tr>
<td>30%</td>
<td>ARROWTOWN</td>
<td>Browntop Bent</td>
<td>7.9</td>
</tr>
<tr>
<td>30%</td>
<td>MANOR</td>
<td>Browntop Bent</td>
<td>7.2</td>
</tr>
</tbody>
</table>

**ALL BENT**

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
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</thead>
<tbody>
<tr>
<td>50%</td>
<td>ARROWTOWN</td>
<td>Browntop Bent</td>
<td>7.9</td>
</tr>
<tr>
<td>50%</td>
<td>MANOR</td>
<td>Browntop Bent</td>
<td>7.2</td>
</tr>
</tbody>
</table>

New No. 1 rated Arrowtown & No. 2 Manor, J All Bent sets a new standard for density and visual quality

Quality bentgrass allows a closer cut and greater wear tolerance over pure fescue swards

Fast sustainable greens!!

All bent overseeding mixture, helps to reduce invasion by Poa annua when used regularly throughout the growing season

**GroMax**
treated, maximises seedling development

**iSeed**  Ji All Bent - iSeed option available
**VELVET**  Sustainable golf greens (A canina)

- **SOWING RATE**: 8g/m²
- **OVERSOWING**: 4g/m²
- **MOWING HEIGHT**: Down to 3mm

**New generation velvet bentgrass blend for unbeatable greens quality**

- **Fast sustainable greens!!**
- Exceptional turf density, delivers faster ball roll for a given height of cut!
- Very rapid establishment even in competitive high Poa swards
- Lower Nitrogen & water requirements = sustainable turf
- Natural dark colour and disease resistance over traditional greens

**GroMax** treated, maximises seedling development

---

**CREEPING BENTS**  Overseeding (A stolonifera)

- **SOWING RATE**: 8g/m²
- **OVERSOWING**: 4g/m²
- **MOWING HEIGHT**: Down to 3mm

**A top rated creeping bent for UK and Irish conditions**

- Dense, compact growth  Tolerant of close mowing, fast greens
- Rapid establishment and wear tolerance  Low thatch

**The No. 1 rated creeping bent for UK and Irish conditions**

- Highest rating for tolerance of close mowing STRI & NTEP
  - Excellent resistance to disease, red thread, dollar spot & fusarium
- Rapid establishment and wear tolerance
  - Exceptional shoot density and dark green colour, low thatch

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
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<tbody>
<tr>
<td>50%</td>
<td>VILLA 1</td>
<td>Velvet Bent</td>
<td>8.1</td>
</tr>
<tr>
<td>50%</td>
<td>LEGENDARY</td>
<td>Velvet Bent</td>
<td>-</td>
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<table>
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<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
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</thead>
<tbody>
<tr>
<td>100%</td>
<td>INDEPENDENCE</td>
<td>Creeping Bent</td>
<td>6.9</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>SOWING RATE 8g/m²</th>
<th>OVERSOWING 4g/m²</th>
<th>MOWING HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Down to 3mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>COBRA NOVA</td>
<td>Creeping Bent</td>
<td>7.2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SOWING RATE 8g/m²</th>
<th>OVERSOWING 4g/m²</th>
<th>MOWING HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Down to 3mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FESCUE
Greens, tees & fairways

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>BEUDIN</td>
<td>Slender Creeping Red Fescue</td>
<td>7.9</td>
</tr>
<tr>
<td>30%</td>
<td>CEZANNE</td>
<td>Slender Creeping Red Fescue</td>
<td>7.6</td>
</tr>
<tr>
<td>35%</td>
<td>MUSICA</td>
<td>Chewings Fescue</td>
<td>7.4</td>
</tr>
<tr>
<td>15%</td>
<td>HUMBOLDT</td>
<td>Chewings Fescue</td>
<td>7.7</td>
</tr>
</tbody>
</table>

SOWING RATE 25-35g/m²
OVERSOWING 10-25g/m²
MOWING HEIGHT Down to 5mm

100% Fine fescue blend ideal for sustainable management programs & links greens
Top rated cultivars, with Beudin & Humboldt
Drought tolerant and highly resistant to disease
Good shade & salt tolerance
Reduces fertiliser and water requirements, lowers carbon footprint

GroMax treated, maximises seedling development

iFescue - iSeed option available

LINKS
Greens surrounds, tees, fairways & semi rough

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15%</td>
<td>CEZANNE</td>
<td>Slender Creeping Red Fescue</td>
<td>7.6</td>
</tr>
<tr>
<td>15%</td>
<td>BEUDIN</td>
<td>Slender Creeping Red Fescue</td>
<td>7.9</td>
</tr>
<tr>
<td>10%</td>
<td>MUSICA</td>
<td>Chewings Fescue</td>
<td>7.4</td>
</tr>
<tr>
<td>20%</td>
<td>ROSSINANTE</td>
<td>Strong Creeping Red Fescue</td>
<td>6.1</td>
</tr>
<tr>
<td>30%</td>
<td>MANETTO</td>
<td>Hard Fescue</td>
<td>7.2</td>
</tr>
<tr>
<td>10%</td>
<td>QUATRO</td>
<td>Sheeps Fescue</td>
<td>8.3</td>
</tr>
</tbody>
</table>

SOWING RATE 25-35g/m²
OVERSOWING 10-25g/m²
MOWING HEIGHT Down to 10mm

100% Fine fescue blend designed for links golf conditions & sustainable management programs
Top rated Hard & Sheeps fescue for improved salt tolerance & excellent colour, can help to reduce fertiliser requirements
New Beudin, highest rating for visual merit under fairway management
Highly resistant to disease, can reduce fungicide inputs
High drought tolerance, can reduce water requirements
Lower carbon footprint

GroMax treated, maximises seedling development
In the last five years I have seen a significant increase in fescue since exclusively using Johnsons seed via Goldcrop Ltd. We have gone from an 80% Poa annua dominated sward to an 80% fescue dominated sward. I have always found the seed to be of the highest quality and their technical back up second to none. I would recommend Johnsons seed to anyone and will certainly continue to use it in the future.

Fintan Brennan
Links Superintendent | The Links Portmarnock

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>MUSICA</td>
<td>Chewings Fescue</td>
<td>7.4</td>
</tr>
<tr>
<td>15%</td>
<td>BLEenheim</td>
<td>Chewings Fescue</td>
<td>7.2</td>
</tr>
<tr>
<td>20%</td>
<td>BEUDIN</td>
<td>Slender Creeping Red Fescue</td>
<td>7.9</td>
</tr>
<tr>
<td>35%</td>
<td>ROSSINANTE</td>
<td>Strong Creeping Red Fescue</td>
<td>6.1</td>
</tr>
<tr>
<td>20%</td>
<td>MANETTO</td>
<td>Hard Fescue</td>
<td>7.2</td>
</tr>
</tbody>
</table>

- 100% Fescue mixture, including unique New Manetto Hard fescue
- New Beudin, highest rating for visual merit under fairway management
- Unbeatable shoot density helps reduce Poa annua invasion
- Improved drought tolerance and disease resistance
- Naturally darker colour & fine leaved appearance
- Sustainable overseeding mixture can reduce water and fertiliser requirements
- Reduced clippings and lower carbon footprint
- IFS treated, maximises seedling development

Ji Fairway - iSeed option available
### PREMIER FAIRWAY

**Hard wearing fairways & tees (with ssmg)**

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>MUSICA</td>
<td>Chewings Fescue</td>
<td>7.4</td>
</tr>
<tr>
<td>15%</td>
<td>BLENHEIM</td>
<td>Chewings Fescue</td>
<td>7.2</td>
</tr>
<tr>
<td>20%</td>
<td>BEUDIN</td>
<td>Slender Creeping Red Fescue</td>
<td>7.9</td>
</tr>
<tr>
<td>15%</td>
<td>SOMBRERO</td>
<td>Smooth Stalked Meadow Grass</td>
<td>7.6</td>
</tr>
<tr>
<td>20%</td>
<td>ROSSINANTE</td>
<td>Strong Creeping Red Fescue</td>
<td>6.1</td>
</tr>
<tr>
<td>20%</td>
<td>MANETTO</td>
<td>Hard Fescue</td>
<td>7.2</td>
</tr>
</tbody>
</table>

**SOWING RATE**: 25-35g/m²  
**OVERSOWING**: 10-25g/m²  
**MOWING HEIGHT**: Down to 10mm

100% Fescue mixture, including unique New Manetto hard fescue  
New Beudin, highest rating for visual merit under fairway management  
Unbeatable shoot density helps to reduce Poa annua invasion  
No. 1 rated Sombrero SSMG strengthens turf and increases wear tolerance  
Improved drought tolerance and disease resistance  
Reduced water and fertiliser requirements  
Reduced cutting requirement & lower carbon footprint

### TEE

**Hard Wearing, shaded golf tees & pathways (with ryegrass)**

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>FABIAN</td>
<td>4Turf Tetraploid Perennial Ryegrass</td>
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<tr>
<td>20%</td>
<td>CONRAD</td>
<td>Perennial Ryegrass</td>
<td>6.8</td>
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<tr>
<td>20%</td>
<td>STRAVINSKY</td>
<td>Perennial Ryegrass</td>
<td>6.0</td>
</tr>
<tr>
<td>30%</td>
<td>ROSSINANTE</td>
<td>Strong Creeping Red Fescue</td>
<td>6.1</td>
</tr>
<tr>
<td>10%</td>
<td>SABRENA 1</td>
<td>Rough Stalked Meadow Grass</td>
<td>-</td>
</tr>
</tbody>
</table>

**SOWING RATE**: 35-50g/m²  
**OVERSOWING**: 15-25g/m²  
**MOWING HEIGHT**: Down to 10mm

Unique Combination of 4Turf tetraploid ryegrass and Sabrena RSMG delivers very rapid establishment for frequently worn shaded turf, with exceptional density and improved disease resistance  
Hard wearing even under close mown conditions  
Combination of new ryegrass cultivars for exceptional fineness and density

GroMax treated, maximises seedling development

Ji Tee - iSeed option available
**RYE FAIRWAY**  
Hard wearing golf fairways, tees, driving ranges & cricket outfields (with ryegrass)

![Image of golf course](image)

<table>
<thead>
<tr>
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<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15%</td>
<td>CHARDIN</td>
<td>Perennial Ryegrass</td>
<td>7.6</td>
</tr>
<tr>
<td>15%</td>
<td>CONRAD</td>
<td>Perennial Ryegrass</td>
<td>6.8</td>
</tr>
<tr>
<td>20%</td>
<td>MUSICA</td>
<td>Chewing Fescue</td>
<td>7.4</td>
</tr>
<tr>
<td>20%</td>
<td>CEZANNE</td>
<td>Slender Creeping Red Fescue</td>
<td>7.6</td>
</tr>
<tr>
<td>30%</td>
<td>ROSSINANTE</td>
<td>Strong Creeping Red Fescue</td>
<td>6.1</td>
</tr>
</tbody>
</table>

**NEW FORMULATION 2015**

SOWING RATE 35-50g/m²  
OVERSOWING 15-25g/m²  
MOWING HEIGHT Down to 10mm

**ROUGHS**  
Golf rough & dry impoverished soils

![Image of golf course](image)

<table>
<thead>
<tr>
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<th>Cultivar</th>
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<th>STRI Rating</th>
</tr>
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<tbody>
<tr>
<td>10%</td>
<td>HELENA</td>
<td>Slender Creeping Red Fescue</td>
<td>-</td>
</tr>
<tr>
<td>25%</td>
<td>MAXIMA</td>
<td>Strong Creeping Red Fescue</td>
<td>-</td>
</tr>
<tr>
<td>25%</td>
<td>HERALD</td>
<td>Strong Creeping Red Fescue</td>
<td>-</td>
</tr>
<tr>
<td>25%</td>
<td>TRIANA</td>
<td>Hard Fescue</td>
<td>-</td>
</tr>
<tr>
<td>10%</td>
<td>-</td>
<td>Crested Dogstail</td>
<td>-</td>
</tr>
<tr>
<td>5%</td>
<td>HIGHLAND</td>
<td>Browntop Bent</td>
<td>-</td>
</tr>
</tbody>
</table>

**NEW FORMULATION 2015**

SOWING RATE 25-35g/m²  
MOWING HEIGHT Down to 10mm

Attractive when left uncut, the open sward will not slow play unnecessarily & allows the natural regeneration of wild flower meadow species

Very slow regrowth, reducing maintenance costs

Ideal for embankments or areas where access is restricted

Reduced fertiliser requirements

Year round colour

**GroMax** treated, maximises seedling development
sports mixtures

Johnsons Sports Seed is made up of a range of mixtures for tennis, cricket, football, rugby & equestrian turf. Within each mixture the varieties have been carefully selected for top performance.

Guaranteed quality
Turf managers maintaining the full range of sports areas will appreciate the extensive work carried out by our breeding team to produce cultivars offering high ratings for wear tolerance, sward density and tolerance of close mowing. The mixture formulations hereafter and the varieties used, take full advantage of these characteristics, providing the sports turf manager with assured sward performance.

Fast results
The common denominator for all Johnsons Sports Seed mixtures is very quick establishment whether for new seeding or renovation purposes. Results are enhanced by the addition of GroMax and iSeed® seed treatments.

Superior wear tolerance
All varieties in the Johnsons Sports Seed range are selected so that they are hardwearing, dense and disease resistant, minimising the invasion of Poa annua and other weed species.

High visual merit
The use of top rated cultivars in all Johnsons Sports Seed mixtures ensures very high visual merit throughout the season, as well as quick establishment, wear tolerance and disease resistance.
NEW Fabian 4turf™
Tetraploid perennial ryegrass

4TURF is a unique new turf type Tetraploid perennial ryegrass bred specifically by DLF Trifolium for rapid establishment and unique stress tolerance, not to be confused with standard Tetraploids.

Rapid establishment

4TURF seeds are larger than regular ryegrass cultivars, producing stronger seedlings and faster establishment even at lower temperatures.

Top rated disease resistance and stress tolerance

Enhanced rooting for a stronger deeper root system

Excellent mixture partner

4TURF cultivars are slightly less dense than regular diploid ryegrass, allowing companion species in the mixture a better chance of establishment.

Winter Overseeding
Sportsturf Ryegrass

AXCELLA Lolium multiflorum var westerwoldicum

Axcella is the first commercially available annual ryegrass recommended exclusively for turfgrass use. Developed by DLF Trifolium from unique dwarf annual ryegrass plants that exhibit greater shoot density, narrower leaf blades, less vertical growth and a darker green leaf colour than standard annual ryegrass cultivars.

Low temperature germination

Axcella has proven to offer the fastest establishment in both laboratory and field trials under low temperature conditions (4°C).

Rapid establishment!!!

Axcella was developed exclusively for the winter overseeding of dormant turf. Axcella exhibits very strong seedling vigour for rapid, weed free establishment and coverage, properties which led to its selection for preparation of the highly acclaimed pitches at the 2010 World Cup.

Wear Tolerant

The dense and vigorous growth habit delivers the wear tolerance required for the emergency renovation of winter damaged turf!

(Axcella far right showing strong germination and rapid growth under low temperature conditions, versus standard cultivars).
### Court

**High quality tennis courts, cricket wickets & tees**

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>LIGALA</td>
<td>Perennial Ryegrass</td>
<td>–</td>
</tr>
<tr>
<td>50%</td>
<td>DICKENS</td>
<td>Perennial Ryegrass</td>
<td>6.9</td>
</tr>
</tbody>
</table>

**Formulation**

- Sowing rate: 35-75g/m²
- Oversowing: 25-75g/m²
- Mowing height: Down to 2mm

**Description**

- Designed for the rapid renovation of modern natural grass courts
- Strong soil binding characteristics
- Top rated New Dickens PRG for close mown conditions!
- Excellent tolerance to abrasive wear
- Cultivars selected for darker year round colour

**Note:** GroMax treated, maximises seedling development

### Wicket

**Cricket squares, tees & tennis courts**

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>CONRAD</td>
<td>Perennial Ryegrass</td>
<td>–</td>
</tr>
<tr>
<td>50%</td>
<td>CLEOPATRA</td>
<td>Perennial Ryegrass</td>
<td>–</td>
</tr>
</tbody>
</table>

**Formulation**

- Sowing rate: 35-75g/m²
- Oversowing: 25-75g/m²
- Mowing height: Down to 2mm

**Description**

- Designed to perform on traditional clay rootzones
- High shoot density
- Good colour
- Fast establishment & regrowth
- Fine leaved

**Note:** GroMax treated, maximises seedling development
We have been using Johnsons J Premier Wicket at Hampshire for many years and have had consistent positive results including the pitch for the 2014 Test match against India which produced a thrilling game for England. The quality of the surface also resulted in it being marked top in the ECB 4 day category in 2014.

New 4 Cultivar mixture including Clementine, Dickens, Chardin & Monroe PRG delivers the highest rating on 2015 STRI close mown list

New Clementine, outstanding shoot density, combined with a fine leaf and incredible cleanliness of cut for improved camera appeal

Rapid establishment

4 cultivar blend for the highest disease resistance

Attractive colour and fineness of leaf

processed, maximises seedling development

iSeed Ji Premier Wicket - iSeed option available
**PREMIER PITCH**

Premier quality football & rugby pitches

The UK’s number 1 sports turf renovation mixture just got even better!
Europe’s highest rated cultivars, deliver a sward of exceptional wear tolerance and density
Rapid establishment, ready to mow in 3-5 weeks
Rapid recovery and regrowth from wear
Camera friendly, attractive colour, high disease resistance, delivers a turf with exceptional visual merit with proven performance

**SOWING RATE** 35-75g/m²  
**OVERSOWING** 25-75g/m²  
**MOWING HEIGHT** Down to 25mm

Very rapid establishment, ready to mow in 3-5 weeks
Fabian 4Turf tetraploid ryegrass delivers faster establishment, deeper rooting for summer stress tolerance and exceptional winter colour and disease resistance
New highly rated companion cultivars for the highest density & wear tolerance
Ideal for training grounds & high wear turf where irrigation is restricted

GroMax treated, maximises seedling development

---

**PREMIER PITCH**

% Cultivar Species STRI Rating

- **20%** EUROTURF Tetraploid Perennial Ryegrass 6.2
- **20%** EUCALYPTUS Perennial Ryegrass 8.1
- **30%** EUROCORDUS Perennial Ryegrass 8.1
- **5%** EUROCORDUS Perennial Ryegrass 8.1

**SOWING RATE** 35-75g/m²  
**OVERSOWING** 25-75g/m²  
**MOWING HEIGHT** Down to 25mm

**NEW FORMULATION 2015**

GroMax treated, maximises seedling development

---

**PITCH**

Football & rugby pitches, gallops & racecourses, (ideal for the renovation of winter wear)

The UK’s number 1 sports turf renovation mixture just got even better!
Europe’s highest rated cultivars, deliver a sward of exceptional wear tolerance and density
Rapid establishment, ready to mow in 3-5 weeks
Rapid recovery and regrowth from wear
Camera friendly, attractive colour, high disease resistance, delivers a turf with exceptional visual merit with proven performance

**SOWING RATE** 35-75g/m²  
**OVERSOWING** 25-75g/m²  
**MOWING HEIGHT** Down to 25mm

Very rapid establishment, ready to mow in 3-5 weeks
Fabian 4Turf tetraploid ryegrass delivers faster establishment, deeper rooting for summer stress tolerance and exceptional winter colour and disease resistance
New highly rated companion cultivars for the highest density & wear tolerance
Ideal for training grounds & high wear turf where irrigation is restricted

GroMax treated, maximises seedling development
We have used the Johnsons Sports Seed J Premier Pitch mixture at Old Trafford for the past six years. The top rated varieties in the blend provide quick, uniform and dense initial establishment and consistent performance throughout the season.

The Premier Pitch mixture has provided exceptional wear tolerance and suits our requirements in such a demanding environment. The mixture has proved itself over several seasons in a range of difficult winter conditions and never let us down.

Tony Sinclair
Grounds Manager | Manchester United FC

IOG 2014 Groundsman Of The Year
### 4TURF

Pre winter overseeding program, winter sports pitches, racecourses & high wear turf

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>75%</td>
<td>DOUBLE</td>
<td>Tetraploid Perennial Ryegrass</td>
<td>5.2</td>
</tr>
<tr>
<td>25%</td>
<td>FABIAN</td>
<td>Tetraploid Perennial Ryegrass</td>
<td>6.2</td>
</tr>
</tbody>
</table>

- **SOWING RATE** - OVERSOWING 10-50g/m²
- **MOWING HEIGHT** Down to 12mm

Specifically designed for an Autumn overseeding program - rapid establishment even under low soil temperatures (3-10°C)

New Double & Fabian 4Turf Tetraploid PRG, deliver the highest levels of disease resistance

Deeper rooting & improved turf colour

**GroMax** treated, maximises seedling development

### RESCUE STADIA

Oct - Dec winter overseeding program, shaded sportsturf, football & rugby pitches

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>AXCELLA</td>
<td>Annual Ryegrass</td>
<td>-</td>
</tr>
<tr>
<td>20%</td>
<td>DOUBLE</td>
<td>Tetraploid Perennial Ryegrass</td>
<td>5.2</td>
</tr>
<tr>
<td>20%</td>
<td>HIMALAYA</td>
<td>Perennial Ryegrass</td>
<td>7.2</td>
</tr>
<tr>
<td>10%</td>
<td>SABRENA 1</td>
<td>Rough Stalked Meadow Grass</td>
<td>-</td>
</tr>
</tbody>
</table>

- **SOWING RATE** - OVERSOWING 10-75g/m²
- **MOWING HEIGHT** Down to 12mm

Specifically designed for autumn/ winter overseeding program - rapid establishment even under low soil temperatures (0-9°C), increased disease resistance and shade tolerance

Axcella, unique turf type annual ryegrass, delivers fastest low temp establishment!

Double 4Turf Tetraploid PRG, rapid establishment & improved disease resistance

Himalaya Diploid PRG (proven low temp germination) high wear tolerance

Sabrena 1 RSMG delivers rapid germination, high shoot density and excellent shade tolerance

**GroMax** treated, maximises seedling development
The new Tetraploid perennial ryegrass provided quick establishment and deeper rooting capacity. With horses going 40/50 mph the grass underneath is bound to get damaged, but the mixture has withstood the pounding. It’s a testament to the grass seed itself which has lived up to my expectation.

Rescue 100

Emergency overseeding & rapid repairs!
Football & rugby pitches, tees, polo fields & racecourses

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>AXCELLA</td>
<td>Annual Ryegrass</td>
<td>-</td>
</tr>
</tbody>
</table>

Sowing Rate - Oversowing 30-50g/m²
Mowing Height Down to 12mm

Designed for winter/spring emergency overseeding
- rapid establishment even under low soil temperatures (down to 3°C)

Axcella, unique turf type annual ryegrass, delivers fastest low temp establishment!

GroMax treated, maximises seedling development

“ADRIAN KAY
Head Groundsman | York Racecourse

2014 IOG Professional Horse Racing Grounds Team Of The Year
### MULTI SPORT
Sports fields, cricket outfields & athletics use

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>CHARDIN</td>
<td>Perennial Ryegrass</td>
<td>7.6</td>
</tr>
<tr>
<td>50%</td>
<td>LIGALA</td>
<td>Perennial Ryegrass</td>
<td>7.2</td>
</tr>
<tr>
<td>25%</td>
<td>ROSSINANTE</td>
<td>Strong Creeping Red Fescue</td>
<td>–</td>
</tr>
</tbody>
</table>

- **SOWING RATE**: 35-50g/m²
- **OVERSOWING**: 25-50g/m²
- **MOWING HEIGHT**: Down to 25mm

A multi purpose mixture designed for schools and colleges where a high quality flexible sward is required

- Top rated cultivars, providing a sward of exceptional wear tolerance and density
- Rapid establishment, ideal for renovation
- New generation fine turf strong creeping red fescue Rossinante
- Attractive colour, cuts cleanly

**GroMax** treated, maximises seedling development

### RR
Rhizome Recovery: new sports stadia, football pitches, polo fields & racecourses

<table>
<thead>
<tr>
<th>%</th>
<th>Cultivar</th>
<th>Species</th>
<th>STRI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>BIZET 1</td>
<td>Perennial Ryegrass</td>
<td>7.3</td>
</tr>
<tr>
<td>20%</td>
<td>EURODIAMOND</td>
<td>Perennial Ryegrass</td>
<td>8.1</td>
</tr>
<tr>
<td>20%</td>
<td>LIGALA</td>
<td>Perennial Ryegrass</td>
<td>7.2</td>
</tr>
<tr>
<td>20%</td>
<td>SOMBRERO</td>
<td>Smooth Stalked Meadow Grass</td>
<td>7.4</td>
</tr>
<tr>
<td>20%</td>
<td>MIRACLE</td>
<td>Smooth Stalked Meadow Grass</td>
<td>6.2</td>
</tr>
</tbody>
</table>

- **SOWING RATE**: 25-50g/m²
- **OVERSOWING**: 25-50g/m²
- **MOWING HEIGHT**: Down to 25mm

The significant rhizomes of Sombrero & Miracle smooth stalked meadow grass deliver improved spring recovery & increased sward strength over traditional ryegrass blends

- New Sombrero No. 1 Rated for wear tolerance, Miracle for improved disease resistance
- Exceptional wear tolerance
- Top rated cultivars
- High shoot density

**GroMax** treated, maximises seedling development
### Conversion Factors

#### Weight
- lbs to kilograms: divide by 2.205
- kilograms to lbs: multiply by 2.205
- tons to tonnes: multiply by 1.016
- tonnes to tons: divide by 1.016
- cwts to kilograms: multiply by 50.794
- kilograms to cwts: divide by 50.794

#### Area
- acres to hectares: divide by 2.471
- hectares to acres: multiply by 2.471
- square yards to square metres: multiply by 0.8361
- square metres to square yards: divide by 0.8361

#### Volume
- pints to litres: multiply by 0.568
- litres to pints: divide by 0.568
- litres to gallons: divide by 4.546

### Sports Pitch Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soccer</td>
<td>100 x 64</td>
</tr>
<tr>
<td>Rugby</td>
<td>100 x 69</td>
</tr>
<tr>
<td>Hockey</td>
<td>91.4 x 55</td>
</tr>
<tr>
<td>Cricket Square</td>
<td>30 x 23</td>
</tr>
<tr>
<td>Lawn Tennis</td>
<td>23.8 x 11</td>
</tr>
<tr>
<td>Bowls</td>
<td>40 x 40</td>
</tr>
<tr>
<td>Croquet</td>
<td>32 x 25.5</td>
</tr>
<tr>
<td>Golf Green</td>
<td>500m²/600m²</td>
</tr>
<tr>
<td>Golf Tee</td>
<td>250m²/500m²</td>
</tr>
</tbody>
</table>

### SOIL pH AND TURF GROWTH

- **ACID**
  - BROWNTOP BENT
  - CHEWINGS FESCUE
  - SLENDER AND STRONG CREEPING RED FESCUES
  - HARD AND SHEEP’S FESCUE
  - ANNUAL MEADOW GRASS

- **ALKALINE**
  - PERENNIAL RYEGRASS
  - SMOOTH STALKED MEADOW GRASS
  - CREEPING BENT
  - HARD AND SHEEP’S FESCUE
  - ANNUAL MEADOW GRASS

Soil pH. Table shows most suitable pH for grass species.
Add colour, diversity and interest to the golf course with UK native wild flower meadow mixtures

In order to meet with the increasing demand for conservation mixtures we have formulated twelve seed mixtures, each designed to recreate a particular habitat.

**Origin**
The wild flowers used in the Wild Flora range are guaranteed to be of native UK origin.

**Quality**
Johnsons Seeds has in-house production facilities allowing us to further improve seed quality.

**Technical support**
Our experienced team is available to provide advice on mixture selection and site management. For larger projects site visits followed by a written report are available.

**Contract growing service**
Johnsons has many years experience in the contract production of wild flower seed and plants. This is particularly useful where extremely large quantities or unusual/rare species are required.

**Special mixture service**
Whilst our standard mixtures will cater for most situations we are always pleased to advise upon and produce mixtures to your own specification.

The RHS Perfect for Pollinators mark is only given to plants or mixtures that support pollinating insects. Bees, butterflies, moths, hoverflies and many others visit flowers to feed on nectar and pollen; while doing so they transfer pollen and increase seed set and fruit development. Find out more at: rhs.org.uk/perfectforpollinators
CORNFIELD ANNUALS
PRO FLORA 1
Native Wild Flowers 20%
Grasses 80%

ACID SOILS (BELOW pH6)
PRO FLORA 2
Native Wild Flowers 20%
Grasses 80%

DAMP, LOAMY SOILS
PRO FLORA 3
Native Wild Flowers 20%
Grasses 80%

CALCAREOUS SOILS (CHALK)
PRO FLORA 4
Native Wild Flowers 20%
Grasses 80%

WET, LOAMY SOILS
PRO FLORA 5
Native Wild Flowers 20%
Grasses 80%

DRY, LOAMY SOILS
PRO FLORA 6
Native Wild Flowers 20%
Grasses 80%

HEDGEROW & LIGHT SHADE
PRO FLORA 7
Native Wild Flowers 20%
Grasses 80%

COUNTRY MEADOW, GENERAL PURPOSE
PRO FLORA 8
Native Wild Flowers 20%
Grasses 80%

HERITAGE GENERAL PURPOSE
PRO FLORA 9
Wild Flowers 10%
Grasses 90%

COUNTRY MEADOW (GENERAL PURPOSE)
PRO FLORA 10
Native Wild Flowers 10%
Grasses 90%

WOODLAND & HEAVY SHADE
PRO FLORA 11
Native Wild Flowers 20%
Grasses 80%

WATER MARGIN & POND EDGES
PRO FLORA 12
Native Wild Flowers 20%
Grasses 80%
MIXTURE SELECTION

WILD FLOWER MAINTENANCE

It is important that the correct mixture is selected to coincide with the soil type and drainage characteristics of each site.

Site preparation
The aim is to produce a firm weed-free tilth to promote healthy germination. Subsoils often provide weed-free areas with a low nutrient status and are therefore suitable for wild flora planting. It is occasionally necessary to remove the topsoil in areas of high fertility (this can be sold to raise revenue) as these soils tend to promote the growth of more vigorous grasses and pernicious weeds. To remove docks and thistles, nettles and weed grasses, the site should be treated with Glyphosate (following the manufacturer’s instructions) prior to seed bed cultivation.

Summary
a. Cultivate site and allow to remain fallow if practical
b. Treat with Glyphosate or remove topsoil
c. Cultivate to 10cm
d. Create a surface tilth

Sowing
Sowing can take place throughout most of the year, providing a good tilth can be prepared, however the months of March/April and August/September are generally the most suitable.
a. Mix seed – regularly mix to ensure even species distribution
b. Drill/broadcast – calibrate sowing device
c. Rate – 5g/m² mixtures with grass 0.5 – 1.0g/m² pure wild flower mixtures
d. Sand – bulk up small seeding rates with 4 parts silica sand to 1 part seed by weight
e. Raking/harrowing – mix seed into soil (depth approx 0.5cm)
f. Ring Roller – use Cambridge Roller to firm seed bed

First year
The requirements in the first year are to control weeds and reduce competition from grasses. Cut the sward to a height of 5cm every two months or when the sward reaches 15cm. Remove all cut material to avoid smothering the sward.

Where persistent weeds are a problem, spot treat with Glyphosate or dig out.

Future maintenance
The sward should be well established after the first 12 months and contain a diverse range of species. Cut to 7.5cm during March/April and remove cuttings. The second cut should take place at the end of the flowering season during August/October (the flowering period may alter slightly according to climatic conditions). Remove all cuttings. The site may require further cuts in the autumn period to remove untidy growth in an extended growing season.

Maintenance summary
First year
First Cut 5cm March/April
(Spring seeding 1st cut in May)
Cut every 2 months or when sward reaches 15cm
Final Cut September/October
Remove all cuttings

Future years
First Cut 7.5cm March/April
Second Cut 7.5cm August/October
Remove all cuttings
Cornfield annuals
Make the first cut in early March and a second cut once the flowering period is over –September/October.
Harrow autumn or spring to regenerate annuals.
Sales Support

**HEAD OFFICE**
T: 01386 791102    F: 01386 792715    E: amenity@dlf.co.uk

Derek Smith  
M : 07778 859905  
E : dsmith@dlf.co.uk

Paul Hadley  
M : 07990 507729  
E : phadley@dlf.co.uk

Dee Bayliss  
E : dbaylisa@dlf.co.uk

**LINCOLN OFFICE**
T: 01522 706510   F: 01522 706519

Mandy Bell  
E : mbell@dlf.co.uk

Regional Technical Support

**NORTH**

John Hughes  
M : 07801 459625  
E : jhughes@dlf.co.uk

**EAST**

Roger Peacock  
M : 07801 459623  
E : peacock@dlf.co.uk

**SOUTH**

Bob Scott  
M : 07824 906933  
E : bscott@dlf.co.uk

**WEST**

Phil Seedhouse  
M : 07778 796470  
E : pseedhouse@dlf.co.uk

www.johnsonssportsseed.co.uk
For contact details of your local distributor visit

www.johnsonssportsseed.co.uk