Welcome to the Sherriff Amenity Product Guide 2017-18

This guide is intended to provide technical information about the products we supply. Due to space restriction we cannot list our complete product range, please contact your local Sherriff Amenity specialist if you are interested in a product that is not in this guide.

About Us - Sherriff Amenity is a wholly owned specialist amenity division of Agrovista UK Ltd, the premier supplier of agronomy advice and crop protection products to the UK arable, vegetable, fruit and protected crop markets. The business is part of the global Marubeni Corporation.

Our People - All components of Sherriff Amenity have a common thread that binds the segments together into one cohesive unit – and that is our people. Our staff are dedicated to their customers and business associates and strive to maintain the ethos of professionalism and quality, delivering the highest standards of service and customer care. Sherriff Amenity’s nationwide sales team of over 30 BASIS and FACTS qualified specialists provide our clients with a professional service.

Nationwide Distribution – Providing the highest quality advice available and comprehensive product range is one thing, but this has to be supported by an efficient and reliable distribution service. This ensures that our customers receive their order when they need them, allowing optimum use of weather windows.

The Future – We recognise that the face of our industry is changing rapidly and are equipped to respond to these changes before they happen – not when it is too late. As such, we continue to develop and research the most cost-effective and environmentally sound approach for our clients requirements. We are continually seeking to develop the business, where opportunities arise – through technology, investment or acquisition.

Chemicals: Always read the label and product information before use. Use pesticides safely.

Fertilisers: NPK input figures are based on w/w calculations.

Products: Inclusion of products in this guide does not constitute an endorsement, failure to mention products does not imply criticism.

Recommendations: Information in this product guide is intended to provide guidance, but cannot constitute a recommendation.

We recommend that you contact your local Sherriff Amenity Specialist where more detailed information is required.

The information provided in this product guide is accurate at the date of publication so far as Sherriff Amenity are aware, but is of a general nature only and is not intended to address specific issues or to be a complete source of information. Customers should seek specific advice before acting on information contained within this guide.

This guide is intended to provide technical information about the products we supply. Due to space restriction we cannot list our complete product range, please contact your local Sherriff Amenity specialist if you are interested in a product that is not in this guide.

Sherriff Amenity cannot take responsibility for any omissions from, or errors in, the general information provided in this product guide.

Product Range- Sherriff Amenity are distributors for the below manufacturers, for more information on our full range of product contact your local area representative or visit our website www.sherriffamenity.com

Amega Sciences Limagrain
BASF Melspring
Bayer Nufarm Ltd
Bowcom Omex
DLF Orion FT
DMMP Ltd Plant Impact
Dragonfli Team Sprayers
Farmura Ltd Thomas Elliot
Headland Amenity Trade Corp (OGT)
ICL Vitax
Koppert YARA

All trademarks are acknowledged.

For more information on our full range of products visit our website www.sherriffamenity.com
The influence of soil pH on nutrient availability

Nitrogen (N)
Phosphorus (P)
Potassium (K)
Calcium
Magnesium
Sulphur
Copper
Zinc
Iron
Manganese
Boron
Fulvic Acids
Silicon
Cap Fungi
Turf Disease
Herbicides
Inspection of specified plant protection application equipment
**Overview**

Nitrogen is one of the most important nutrients that grasses need to sustain healthy growth. It is an essential component of many of the building blocks of living organisms such as amino acids, proteins, nucleic acids (DNA and RNA) and chlorophyll. Turf grown on soils deficient in nitrogen will lack vigour, colour, wear tolerance and a natural resistance to disease.

It is not possible to obtain sufficient quantities of nitrogen from mining activities to provide the raw materials for fertiliser manufacture, so any additional resources of this vital nutrient must be taken from the atmosphere, where it accounts for about 80% of the air we breathe - in the form of dinitrogen (N₂). Chemically, dinitrogen is represented as N ≡ N. The triple bond between the two nitrogen atoms is very strong, which makes this molecule highly stable and practically inert. To be useful in plant nutrition, nitrogen must be 'fixed' in the form of ammonium (NH₄⁺) or nitrate (NO₃⁻) ions.

Prior to the introduction of man-made nitrogenous fertilisers, the major sources of nitrogen for plants were from recycled plant and animal wastes, broken down by microorganisms, and also from nitrogen fixing bacteria living free in the soil or in the root nodules of certain leguminous plants. A small amount of nitrogen is fixed by lightning strikes where the high energy from the discharge heats the air locally to about 30,000°C, splitting molecules of N₂ and O₂ and forming nitrogen oxides (NO and NO₂). These oxides dissolve in rain water and fall as weak nitrous and nitric acids. Lightning discharges account for about 5% of the total nitrogen fixed from the air. Nitrogen can be artificially fixed in a process that involves the reaction of nitrogen and hydrogen to produce ammonia. Today this accounts for more than a hundred million tons of artificial fertiliser manufactured each year.

**Key functions in the plant**
- A fundamental component for plant growth, being important for amino acid synthesis and subsequent protein formation
- Formation of nucleic acids
- Synthesis of chlorophyll and ATP (adenosine triphosphate)
- Core role in photosynthesis and energy production

**Factors affecting availability to plant**
- Deficiency most common on soils prone to leaching and drought (sandy or light soils with low organic matter)
- Availability is reduced below pH 5.5 and on very alkaline soils
- High rainfall areas or heavily irrigated areas
- Drought affects nutrient uptake
- Transient deficiencies can occur during periods of rapid growth where demand exceeds the rate of nitrogen uptake
- Compacted soils and areas of poor drainage affect root development and subsequent nitrogen uptake

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**Phosphorus (P)**

**Overview**

Phosphorus is an important requirement of many plant compounds that are essential for growth.

Most soils in the UK have adequate phosphate, although soil indices have declined in recent years. However, not all is in ‘pools’ that are available to the plant. Potentially up to 90% of phosphate applied is not utilised. Movement of phosphate is very slow (0.02 mm/day). Plant roots take up phosphorus from soil solution mainly as the HPO⁻ and HPO₂⁻ ions. Phosphate (–ve charge) can be ‘locked up’ in soils with high levels of cations (+ve charge, eg. calcium, magnesium or iron). Availability is reduced in heavy clays or other soils with high fixing capacity and in very acidic soils (eg. peats or heathland) or very alkaline soils, (eg. calcareous soils) where calcium phosphate precipitation occurs.

Sources of phosphate for use in inorganic fertiliser will become limiting in the next 30 years and more will need to be utilised from organic manures and improvements in availability from soil reserves by increasing plant growth promoting rhizobacteria (PGPRb) levels (eg. Bacillus and Rhizobacter).

**Key functions in the plant**
- Key component of ATP (adenosine tri-phosphate) which is used in the energy transfer process within the plant
- Involved in nucleic acid formation, protein synthesis and carbohydrate metabolism
- Formation of cell membranes, phospholipids
- Important role in stimulating early growth and development

**Factors affecting availability to plant**
- Deficiencies can occur during periods of rapid growth or during cold/wet conditions.
- Deficiency can also occur in soils with low organic matter
- Compacted or waterlogged soils limit root growth and the ability of the plant to absorb phosphate
Potassium (K)

Overview
Potassium is an essential component of plant nutrition. Potassium deficient plants are known to be less resistant to plant diseases.

Key functions in the plant
- Maintenance of water balance in the plant, helps regulate cell water content and plant turgor, maintaining stem strength
- Important role in transpiration by controlling stomatal pore opening and closing
- Good mobility in the plant
- There are 4 pools of potassium in the soil, most are in soil minerals. These weather to release slowly available potassium embedded in clays, readily available potassium held on the surface of clays, organic matter and potassium in soil solution

Factors affecting availability to plant
- Low pH soils
- Deficiency can be common at the end of the growing season, especially on light, sandy soils
- Soils with low clay reserves where little K is released, and on sandy or light soils where K can be leached
- Drought and high levels of magnesium reduce uptake
The Evolution² range of micro-granular, compound fertilisers are formulated specifically for use on fine turf areas such as golf greens, bowls greens, cricket squares, grass tennis courts and ornamental lawns.

Evolution² Micro has a wide range of analyses, each giving precise control of nutrient input throughout the year.

The micro granules (0.5-1.7 mm) are formulated to provide even and consistent coverage with a rapid turf response.

**Key Benefits**
- Faster and more efficient recovery from stress
- Strengthens and improves recovery from adverse climatic conditions
- Invigorating and stimulating effect
- Immediate response to foliar application
- Formulated with organic biomolecules of a natural origin

**Nutrient Input (Kg/Ha)**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>4-0-7</th>
<th>14-4-8</th>
<th>14-0-14</th>
<th>8-0-0</th>
<th>5-5-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nitrogen (N)</td>
<td>4%</td>
<td>14%</td>
<td>14%</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Ammoniacal N</td>
<td>4%</td>
<td>6%</td>
<td>7.4%</td>
<td>4.3%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Ureic N</td>
<td>-</td>
<td>4%</td>
<td>2.3%</td>
<td>3.5%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Urea Formaldehyde</td>
<td>-</td>
<td>4.1%</td>
<td>4.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Phosphorus Pentoxide (P₂O₅)</td>
<td>-</td>
<td>4%</td>
<td>-</td>
<td>-</td>
<td>5%</td>
</tr>
<tr>
<td>Potassium Oxide (K₂O)</td>
<td>7%</td>
<td>8%</td>
<td>14%</td>
<td>-</td>
<td>10%</td>
</tr>
<tr>
<td>Magnesium (MgO)</td>
<td>3.3%</td>
<td>2%</td>
<td>2%</td>
<td>3.3%</td>
<td>-</td>
</tr>
<tr>
<td>Total Iron (Fe)</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Product**

<table>
<thead>
<tr>
<th>Product</th>
<th>Pack size</th>
<th>Rate (g/m²)</th>
<th>Coverage (m²)</th>
<th>Bags Per Ha</th>
<th>Longevity (Weeks)</th>
<th>Usage Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evolution² Micro 4-0-7</td>
<td>20Kg</td>
<td>35</td>
<td>571</td>
<td>18</td>
<td>6</td>
<td>F</td>
</tr>
<tr>
<td>Evolution² Micro 14-4-8</td>
<td>20Kg</td>
<td>20-30</td>
<td>667-1000</td>
<td>10-15</td>
<td>6</td>
<td>F</td>
</tr>
<tr>
<td>Evolution² Micro 8-0-0</td>
<td>20Kg</td>
<td>30-35</td>
<td>571-667</td>
<td>15-18</td>
<td>6</td>
<td>F</td>
</tr>
<tr>
<td>Evolution² Micro 5-5-10</td>
<td>20Kg</td>
<td>35</td>
<td>571</td>
<td>18</td>
<td>6</td>
<td>F</td>
</tr>
</tbody>
</table>

For more information

www.sherriffamenity.com
Evolution² Mini

The Evolution² range of mini-granular, compound fertilisers is formulated specifically for use on areas such as golf fairways, football and rugby pitches, racecourses and ornamental turf.

Evolution² Mini has a wide range of analyses, each giving precise control over nutrient input levels throughout the year.

The mini-granules (0.5-3.35 mm) are formulated to provide even and consistent coverage with a rapid turf response.

Key Benefits

- 6 week conventional release fertiliser
- Broad range for use all year
- Mini-granule for even and consistent coverage
- Rapid turf response

<table>
<thead>
<tr>
<th>Product</th>
<th>9-7-7</th>
<th>12-6-6</th>
<th>12-0-9</th>
<th>4-12-12</th>
<th>6-9-6</th>
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</thead>
<tbody>
<tr>
<td>Total Nitrogen (N)</td>
<td>9%</td>
<td>12%</td>
<td>12%</td>
<td>4%</td>
<td>6%</td>
</tr>
<tr>
<td>Ammoniacal N</td>
<td>9%</td>
<td>6.2%</td>
<td>12%</td>
<td>4%</td>
<td>6%</td>
</tr>
<tr>
<td>Ureic N</td>
<td>-</td>
<td>5.8%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Urea Formaldehyde</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Phosphorus Pentoxide (P₂O₅)</td>
<td>7%</td>
<td>6%</td>
<td>-</td>
<td>12%</td>
<td>9%</td>
</tr>
<tr>
<td>Potassium Oxide (K₂O)</td>
<td>7%</td>
<td>6%</td>
<td>9%</td>
<td>12%</td>
<td>6%</td>
</tr>
<tr>
<td>Magnesium (MgO)</td>
<td>-</td>
<td>3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Iron (Fe)</td>
<td>-</td>
<td>-</td>
<td>1%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nutrient Input (Kg/ Ha)</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 g/m²</td>
<td>31.5</td>
<td>24.5</td>
<td>42</td>
<td>21</td>
<td>21</td>
<td>42</td>
<td>-</td>
<td>31.5</td>
<td>14</td>
<td>42</td>
<td>21</td>
<td>31.5</td>
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<tr>
<td>50 g/m²</td>
<td>45</td>
<td>35</td>
<td>35</td>
<td>30</td>
<td>30</td>
<td>60</td>
<td>-</td>
<td>45</td>
<td>20</td>
<td>60</td>
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<td>45</td>
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<tr>
<td>70 g/m²</td>
<td>63</td>
<td>49</td>
<td>49</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>28</td>
<td>84</td>
<td>84</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

For more information

www.sherriffamenity.com
Evolution Controlled is a fertiliser range consisting of nutrients packaged in a coated granule that are released over an extended period of time. Longevity is determined by the thickness of the granule coating and by soil temperature. High temperatures accelerate nutrient release, while lower temperatures reduce the process. Evolution controlled products are therefore very effective in supplying nutrients to the grass relative to current growth requirements. For use on Fairways, tees, approaches, sports pitches, racecourses and general amenity areas. The finer granulation is suitable for fine turf areas including cricket squares, bowls and lawns.

**Key Benefits**

- Range covers a 3-7 month longevity
- Response to match the growth
- Quick start
- Reduced leaching
- Chloride Free

### Controlled Release (% of N)

<table>
<thead>
<tr>
<th>Product</th>
<th>25-5-15 (3-4 Month)</th>
<th>15-0-30 (3-4 Month)</th>
<th>30-5-15 (6-7 Month)</th>
<th>18-0-32 (6-7 Month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nitrogen (N)</td>
<td>25%</td>
<td>15%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Polymer Coated Urea</td>
<td>16.25%</td>
<td>9.75%</td>
<td>22.5%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Ammonium from DAP</td>
<td>3%</td>
<td>-</td>
<td>1.8%</td>
<td>-</td>
</tr>
<tr>
<td>Urea</td>
<td>2.75%</td>
<td>2.55%</td>
<td>1.5%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Nitrate from Potassium Nitrate</td>
<td>3%</td>
<td>2.7%</td>
<td>4.2%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Phosphate: Diammonium phosphate</td>
<td>5%</td>
<td>-</td>
<td>5%</td>
<td>-</td>
</tr>
<tr>
<td>Total Potassium (K2O)</td>
<td>15%</td>
<td>30%</td>
<td>15%</td>
<td>32%</td>
</tr>
<tr>
<td>Potassium Sulphate</td>
<td>5.25%</td>
<td>21%</td>
<td>-</td>
<td>16%</td>
</tr>
<tr>
<td>Potassium Nitrate</td>
<td>9.75%</td>
<td>9%</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Magnesium (MgO)</td>
<td>1%</td>
<td>1.6%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Calcium (Ca)</td>
<td>2.1%</td>
<td>3.2%</td>
<td>0.5%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Nutrient Input (Kg/Ha)</td>
<td>N P K N P K N P K N P K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 g/m²</td>
<td>62.5 12.5 37.5 37.5 75 75 12.5 37.5 45 - 87.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 g/m²</td>
<td>75 15 45 45 - 90 90 15 45 54 - 105</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 g/m²</td>
<td>87.5 17.5 52.5 52.5 - 105 105 17.5 52.5 63 - 122</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>40 g/m²</td>
<td>- - - - - - 120 20 60 72 - 140</td>
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<td></td>
</tr>
<tr>
<td>45 g/m²</td>
<td>- - - - - - 135 22.5 67.5 81 - 157</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 g/m²</td>
<td>- - - - - - 150 25 75 90 - 175</td>
<td></td>
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</tr>
</tbody>
</table>

For more information [www.sherrifffamenity.com](http://www.sherrifffamenity.com)
Granular Fertiliser

A range of dual phase, controlled release fertilisers for use on turf mown above 6mm.

Evolution5 contains a homogenous fast start NPK granule to give a quick response after application, blended with a controlled release granule utilising Polymer Sulphur Coated Urea (PSCU) technology to provide steady growth for up to 5 months.

Key Benefits

- Coated urea gives 4 to 5 months longevity
- Precise release mechanism enures peace of mind
- Strong, dense growth of sward

### Evolution5

<table>
<thead>
<tr>
<th>Product</th>
<th>Usage Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine 25-5-10</td>
<td>J F M A M J J A S O N D</td>
</tr>
<tr>
<td>Fine 14-0-28</td>
<td>J F M A M J J A S O N D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nutrient Inputs (kg/ha): Rate</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 g/m²</td>
<td>62.5</td>
<td>12.5</td>
<td>35</td>
<td>35</td>
<td>-</td>
<td>70</td>
</tr>
<tr>
<td>30 g/m²</td>
<td>75</td>
<td>15</td>
<td>30</td>
<td>42</td>
<td>-</td>
<td>84</td>
</tr>
<tr>
<td>35 g/m²</td>
<td>87.5</td>
<td>17.5</td>
<td>35</td>
<td>49</td>
<td>-</td>
<td>98</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nutrient Input (Kg/ha)</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 g/m²</td>
<td>62.5</td>
<td>12.5</td>
<td>20</td>
<td>30</td>
<td>12.5</td>
<td>52.5</td>
</tr>
<tr>
<td>30 g/m²</td>
<td>75</td>
<td>15</td>
<td>28</td>
<td>42</td>
<td>17.5</td>
<td>73.5</td>
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<tr>
<td>35 g/m²</td>
<td>87.5</td>
<td>17.5</td>
<td>36</td>
<td>54</td>
<td>22.5</td>
<td>94.5</td>
</tr>
</tbody>
</table>

Product | Usage Period |
----------|--------------|
Evolution5 25-5-8 | J F M A M J J A S O N D |
Evolution5 12-5-21 | J F M A M J J A S O N D |
Evolution Xtra products contain fertiliser in a form not immediately available to grass. Inhibitors slow the conversion of nutrients by physical and chemical means or by the action of microorganisms.

Significant environmental benefits result from this mechanism of release, as nutrients are less likely to be lost by leaching from irrigation and rainfall, or by soil fixation and volatilisation. This is particularly apparent when compared to the use of conventional fast release fertiliser products, where solubilised forms of nutrient unused by the grass can easily be leached away. Evolution Xtra can be used on sports pitches, tees, approaches, fairways, racecourse and general amenity areas.

**Key Benefits**

- Lasts up to 3 months
- Efficient use of nitrogen
- Chloride free
- Low scorch potential
- Water soluble tank-mix options

---

### Nutrient Input (Kg/Ha)

<table>
<thead>
<tr>
<th>Rate (g/m²)</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 g/m²</td>
<td>20%</td>
<td>8</td>
<td>8</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>25 g/m²</td>
<td>571</td>
<td>1000</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>30 g/m²</td>
<td>84</td>
<td>14</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>35 g/m²</td>
<td>24-4-4</td>
<td>10-10-10</td>
<td>15-2-20</td>
<td>46-0-0</td>
<td>46-0-0</td>
<td></td>
</tr>
</tbody>
</table>

---

### Key Benefits

- Lasts up to 3 months
- Efficient use of nitrogen
- Chloride free
- Low scorch potential
- Water soluble tank-mix options

---

**Evolution Xtra**

**Pack size**

- Evolution Xtra 24-4-4: 20Kg
- Evolution Xtra 10-10-10: 20Kg
- Evolution Xtra 15-2-20: 20Kg
- Evolution Xtra 46-0-0 Granular: 20Kg
- Evolution Xtra 46-0-0 Soluble: 20Kg

---

**For more information**

www.sherriffamenity.com
Absolute NPK 15-5-20

A conventional release, high potash fertiliser that produces strong growth, good appearance and toughness with superior wear quality, just when you need it.

Absolute NPK’s perfect balance of nutrients make it an ideal choice for outfield sports turf and racecourses. It can be used throughout the growing season.

**Key Benefits**
- Ideal for use on turf with heavy wear
- High potash content
- Low Potash to discourage weed grass
- Contains vital trace elements

<table>
<thead>
<tr>
<th>Total Nitrogen (N)</th>
<th>15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammoniacal N</td>
<td>2.4%</td>
</tr>
<tr>
<td>Ureic N</td>
<td>12.6%</td>
</tr>
<tr>
<td>Phosphorus Pentoxide (P₂O₅)</td>
<td>5%</td>
</tr>
<tr>
<td>Potassium Oxide (K₂O)</td>
<td>20%</td>
</tr>
<tr>
<td>Magnesium Oxide (MgO)</td>
<td>2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rate</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 g/m²</td>
<td>30</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>40 g/m²</td>
<td>60</td>
<td>20</td>
<td>80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (g/m²)</th>
<th>Pack Coverage (m²)</th>
<th>Bags Per Ha</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20Kg</td>
<td>20-40</td>
<td>500-1000</td>
<td>10-20</td>
<td>6-8 weeks</td>
</tr>
</tbody>
</table>

Marathon TCR 4-3-4

Marathon TCR was developed to provide rapid recovery from stress situations on fine turf areas caused by essential maintenance.

It contains a mixture of nitrogen sources to provide both immediate and prolonged growth for recovery so that playing surfaces can be quickly returned to use. An extremely versatile product that can be used on both fine and outfield areas.

**Key Benefits**
- Rapid recovery from essential maintenance
- Helps deal with stress and abrasion caused by re-filling core holes
- Fast green-up of damaged turf

<table>
<thead>
<tr>
<th>Total Nitrogen (N)</th>
<th>4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammoniacal N</td>
<td>1.5%</td>
</tr>
<tr>
<td>Organic Nitrogen</td>
<td>2.5%</td>
</tr>
<tr>
<td>Phosphorus Pentoxide (P₂O₅)</td>
<td>3%</td>
</tr>
<tr>
<td>Potassium Oxide (K₂O)</td>
<td>4%</td>
</tr>
<tr>
<td>Calcium Oxide (CaO)</td>
<td>8%</td>
</tr>
<tr>
<td>Magnesium Oxide (MgO)</td>
<td>3.5%</td>
</tr>
<tr>
<td>Iron (Fe)</td>
<td>0.5%</td>
</tr>
<tr>
<td>Organic Matter</td>
<td>41%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nutrient Input (kg/ha)</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 g/m²</td>
<td>14</td>
<td>10.5</td>
<td>14</td>
</tr>
<tr>
<td>50 g/m²</td>
<td>20</td>
<td>15</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (g/m²)</th>
<th>Pack Coverage (m²)</th>
<th>Bags Per Ha</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20Kg</td>
<td>20-40</td>
<td>500-1000</td>
<td>10-20</td>
<td>3-6 weeks</td>
</tr>
</tbody>
</table>
Marathon Golf

A range of slow release fertilisers designed to provide optimum nutrition levels for golf greens and other close mown, intensively managed turf.

Marathon Golf has a patented organic complex base that provides the extended release characteristics needed to give steady growth without dramatically increasing clipping yields.

This organic fraction slowly feeds the plant whilst encouraging soil life to flourish and increase the recycling of nutrients already in the rootzone, which helps give optimum results.

Key Benefits

- Denser Sward
- High resistance to stress
- Compact turf
- Increased tilerin
- Active deep root development

For more information

www.sherriffamenity.com
Marathon Sport is a range of extended release fertilisers that provide long-lasting, balanced growth on golf fairways, tees, surrounds, sportsfields and ornamental lawns maintained at a height of 10 mm and above.

The result of following a Marathon fertiliser programme is a sward with firm, shorter leaf blades brought about by the increase in tillering and improvement in leaf cell structure. Marathon fertilisers benefit from having both organic and mineral components bound together to ensure that the nitrogen is multi-stage released, therefore it is available for steady plant growth from the moment it is applied and for a period that can last for 3-4 months.

Key Benefits

- Denser Sward
- High resistance to stress
- Compact turf
- Increased tillering
- Active deep root development

<table>
<thead>
<tr>
<th>Product</th>
<th>Pack Size</th>
<th>Rate (g/m²)</th>
<th>Coverage (m²)</th>
<th>Bags Per Ha</th>
<th>Longevity (Weeks)</th>
<th>Usage Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Sport Spring</td>
<td>20Kg</td>
<td>20-35</td>
<td>714-1250</td>
<td>8-12</td>
<td>J</td>
<td>S O N D</td>
</tr>
<tr>
<td>Marathon Sport Summer</td>
<td>20Kg</td>
<td>20-35</td>
<td>714-1250</td>
<td>8-12</td>
<td>J</td>
<td>S O N D</td>
</tr>
<tr>
<td>Marathon Sport Autumn</td>
<td>20Kg</td>
<td>20-35</td>
<td>714-1250</td>
<td>8-14</td>
<td>J</td>
<td>S O N D</td>
</tr>
<tr>
<td>Marathon Allround</td>
<td>20Kg</td>
<td>20-35</td>
<td>714-1250</td>
<td>8-12</td>
<td>J</td>
<td>S O N D</td>
</tr>
<tr>
<td>Marathon Sport Preseed</td>
<td>20Kg</td>
<td>20-35</td>
<td>714-1250</td>
<td>6-10</td>
<td>J</td>
<td>S O N D</td>
</tr>
</tbody>
</table>
Soil pH is a measure of the concentration of H+ ions in solution. A low pH value indicates a high concentration of H+ ions and consequently an acidic soil. With alkaline soils the reverse is true; a high pH value signifying a low concentration of H+ ions. The pH scale is logarithmic (to the base 10) so that a change in pH from 7.0 to 6.0 reflects a 10 fold increase in acidity.

The availability of nutrients to plants is affected by the pH of the soil. Since all nutrients are either weakly positively charged (Cations +ve) or negatively charged (Anions –ve).

Soil colloids (e.g. clays and humus) have a negative charge and attract positively charged cations. They are held or ‘locked up’ until replaced or released by other cations. In this way they become slowly available to plant roots or are leached through the soil profile. Anions are not absorbed by soil colloids (both have a negative charge) and so tend to remain in the soil solution.

This makes them readily available to the plant, but also prone to leaching. The exception is phosphorous which behaves chemically as an anion and is held quite strongly in the soil by cations eg. calcium, magnesium and iron.

Clay and humus provide the sites to absorb cations, and ‘Cation Exchange Capacity’ (CEC) is the ability of a soil to hold cationic nutrients. Therefore, soils with higher organic matter or clay content will have a higher CEC than sands, for example. CEC can be determined by soil analysis.

Soil pH influences CEC because there is an order of preference in which nutrients are bound to soil colloids.

\[
\text{Al}^{3+} > \text{H}^+ > \text{Ca}^{2+} > \text{Mg}^{2+} > \text{K}^+ = \text{NH}_4^+ > \text{Na}^+ 
\]

As soil acidity increases, the concentration of H+ increases (and the soil pH decreases). The H+ ions are attached to the colloids and displace other cations (e.g. Na+ NH4+ K+ Mg2+) from the colloids and into the soil solution. This therefore decreases the CEC of the soil.

Inversely, when soils become more alkaline (pH increases), the amount of available cations in solution decreases because there are fewer H+ ions to push them into the soil solution from the colloids (CEC increases).

A small proportion of soil particles (1-5%) have a positive charge, and similar to the CEC, the Anion Exchange Capacity is a measurement of the positive charges in soils affecting the amount of negative charges which a soil can absorb. Again there is an order of preference of absorption.

\[
\text{H}_2\text{PO}_4^- > \text{SO}_4^{2-} > \text{NO}_3^- > \text{Cl}^- 
\]

AEC generally decreases when pH drops and increases when pH rises. In general, most micronutrients become less available as the pH increases (eg. manganese, copper, zinc and iron), with the exception of molybdenum and boron (above pH 9) which become more available. Very acidic soils can reduce the availability of potassium, magnesium, calcium and molybdenum. For example, at pH 8 the availability of manganese is reduced in comparison to pH 6.5.
Nitrogen Sources

Nitrogen is available for plant nutrition in a number of different forms:

- **Urea** – formed by reacting ammonia with carbon dioxide \( \text{CO}_2 \) at high pressure. Urea contains 46% nitrogen and is soluble in water, so it can be applied as either a granule or liquid. Nitrogen (N)

- **Ammonium nitrate** – also known as ‘Nitram’ is produced from ammonia by reaction with nitric acid. Ammonium nitrate contains 34% nitrogen and is also soluble in water.

- **Calcium ammonium nitrate** – a mixture of ammonium nitrate and calcium or magnesium carbonate. Calcium ammonium nitrate contains 25-28% nitrogen.

- **Sulphate of ammonia** – is useful where deficiencies of sulphur occur. It contains 21% nitrogen and 24% sulphur.

- **Potassium nitrate** – manufactured by reacting sodium nitrate with potassium chloride. Potassium nitrate can be used in colder temperatures as it is available to the plant without the need for nitrification by soil bacteria. It contains 13.5 percent nitrogen and 45 percent water-soluble potassium as \( \text{K}_2\text{O} \), making it ideal for use to correct potassium deficiency in early spring.

- **Calcium nitrate** – is used to remedy deficiencies in calcium and reduce soil acidity. It contains 15.5% nitrogen and 19% water soluble calcium.

- **Methylene Urea** – provides a chemical slow release nitrogen source containing 37-40% total nitrogen; of which about a quarter is available in the short term with most of the remainder being released slowly over 2 to 3 months – depending on the ambient temperature.
The E² Pro high performance liquid fertiliser range is based on advanced formulation technology that provides rapid leaf penetration and quickly relieves nutrient deficiency symptoms.

With superior efficacy, relatively low amounts of nutrients are required to achieve the same effects as unformulated products and the interval between repeat sprays can often be extended. E² Pro liquid fertilisers are manufactured using specially selected high grade inorganic salts that are very low in impurities, giving long-term storage stability to the entire range.

E² Pro liquid fertilisers are designed for rapid mixing, compatibility with other components in the spray tank and efficient nutrient uptake into the leaf. The E² Pro range of liquid fertilisers can be tank-mixed with one another and with certain other liquid supplements to provide a tailor made liquid feed programme to suit all types of turf areas.

**Key Benefits**

- Tank-mixable
- Wide range of analysis
- Flexible application rates
- Consistent colour

For more information

www.sherriffamenity.com
E² Pro iNStant is a highly economical conventional liquid fertiliser, utilising readily available ammonium sulphate. A wide application rate makes it perfect for all growth requirements.

Programmed applications of E² iNStant, every 4-6 weeks will promote the gradual acidification of soil. An acidic surface will help to reduce disease and worm casting activity.

Key Benefits
- Nutrients readily available to the plant
- Acidifying liquid
- Discourages disease & worms
- Tank-mixable

<table>
<thead>
<tr>
<th>Nutrient Input (Kg/Ha)</th>
<th>N</th>
<th>S0₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 L/Ha</td>
<td>2.9</td>
<td>8.2</td>
</tr>
<tr>
<td>50 L/Ha</td>
<td>4.8</td>
<td>13.6</td>
</tr>
<tr>
<td>75 L/Ha</td>
<td>7.3</td>
<td>20.4</td>
</tr>
<tr>
<td>100 L/Ha</td>
<td>9.7</td>
<td>27.2</td>
</tr>
<tr>
<td>10 L/Ha</td>
<td>11.6</td>
<td>32.7</td>
</tr>
</tbody>
</table>

Pack size | Rate (L/Ha) | Water Rate (L/Ha) | Specific Gravity | Longevity |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Litre</td>
<td>30-120</td>
<td>200-400</td>
<td>1.21</td>
<td>4-6 weeks</td>
</tr>
</tbody>
</table>

Usage Period
- J | F | M | A | M | J | J | A | S | O | N | D

E² Pro PhosRite is a rapidly absorbed foliar feed that provides high levels of phosphite, a nutrient known to stimulate healthy growth and support the plant’s natural defences.

E² Pro PhosRite is rapidly absorbed into the plant leaves where it is translocated as phosphite within the plant cells. This stimulates strong, healthy growth and plants with a better root structure that are more able to withstand stress.

Key Benefits
- Promotes healthy growth
- Encourages deeper rooting
- Relieves stress
- Ideal tonic or spring starter
- Tank-mixable

<table>
<thead>
<tr>
<th>Total Nitrogen (N)</th>
<th>w/v%</th>
<th>w/w%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4%</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ureic N</th>
<th>4%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Total Phosphate (P)</th>
<th>w/v%</th>
<th>w/w%</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.5%</td>
<td>28%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Of which water soluble</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Phospite</th>
<th>37.5%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Total Potassium (K)</th>
<th>w/v%</th>
<th>w/w%</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.5%</td>
<td>13%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nutrient Input (Kg/Ha)</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 L/Ha</td>
<td>0.2</td>
<td>1.875</td>
<td>0.875</td>
</tr>
<tr>
<td>50 L/Ha</td>
<td>0.4</td>
<td>3.75</td>
<td>1.75</td>
</tr>
</tbody>
</table>

Pack size | Rate (L/Ha) | Water Rate (L/Ha) | Specific Gravity | Longevity |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Litre</td>
<td>5-10</td>
<td>200-400</td>
<td>1.34</td>
<td>4 weeks</td>
</tr>
</tbody>
</table>

Usage Period
- J | F | M | A | M | J | J | A | S | O | N | D
E-Gypsum Flo

E-Gypsum Flo is a flowable formulation of the mineral gypsum, which offers many benefits as a soil amendment to the turf managers of today.

E-Gypsum Flo provides essential nutrients calcium and sulphur without dramatically affecting soil pH. Calcium in a soluble form works directly to improve soil structure, reducing compaction and improving aeration.

Key Benefits

• Improves compacted soil
• Reduces sodium build up
• Supports the efficient use of fertiliser
• Improves drainage

Gypsum is composed of calcium sulphate (CaSO4), which occurs naturally in the di-hydrate form (CaSO4 2H2O). E-Gypsum Flo provides essential nutrients calcium and sulphur without dramatically affecting soil pH.

Regular use of E-Gypsum Flo can help to correct high sodium levels, an imbalance in soil that may arise from the intensive use of fertilisers and irrigation water or from inundation of coastal soils by seawater.

The product is also highly valued for improving drainage, increasing the stability of organic matter and reducing surface crusting that can undermine rapid seed germination.

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Rate (L/ha)</th>
<th>Water Rate (L/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandy Loam</td>
<td>30-50</td>
<td>500</td>
</tr>
<tr>
<td>Clay Loam</td>
<td>50-100</td>
<td>500</td>
</tr>
</tbody>
</table>

Pack size Specific Gravity Usage Period

10 Litre 1.58 J F M A M J J A S O N D

K-Max

A high potassium fertiliser with low nitrate N, designed to discourage the soft lush growth associated with disease such as Fusarium Patch.

The ratio of nitrogen to potassium gives a product that will harden the growth and toughen the sward in all amenity situations, from fine turf grass such as golf and bowling greens to outfield sports pitches and parkland.

Key Benefits

• Nitrate nitrogen
• High Potassium
• Tank-mixable
• Turf hardener
• Discourages soft growth

<table>
<thead>
<tr>
<th>w/v%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nitrogen (N)</td>
</tr>
<tr>
<td>Nitrate</td>
</tr>
<tr>
<td>Potassium (K)</td>
</tr>
</tbody>
</table>

Nutrient Input (Kg/Ha)

<table>
<thead>
<tr>
<th>Nutrient Input (Kg/Ha)</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 L/ha</td>
<td>2.57</td>
<td>-</td>
<td>9.13</td>
</tr>
<tr>
<td>30L/ha</td>
<td>5.14</td>
<td>-</td>
<td>18.25</td>
</tr>
<tr>
<td>40 L/ha</td>
<td>6.86</td>
<td>-</td>
<td>24.34</td>
</tr>
</tbody>
</table>

Pack size Rate (L/ha) Water Rate (L/ha) Specific Gravity Longevity

10 Litre 15-40 400-600 1.58 4-6 weeks

Usage Period

J F M A M J J A S O N D

www.sherriffamenity.com
iNtrench is an innovative controlled uptake nitrogen fertiliser designed specifically for the needs of professional sports turf.

Its stable form of urea nitrogen, plus potassium or calcium and Speedo technology, deliver enduring growth response. iNtrench gives up to 10 weeks of improved blade colour and a shorter, denser sward that is more robust and limits weed ingress.

iNtrench contains a particularly stable form of urea nitrogen created using a cation complex, a trade secret production process, plus patented Speedo technology.

This unique formulation inhibits the action of nitrifying microbes as well as resisting leaching and volatilisation. Hence the nitrogen in iNtrench stays within the rootzone for an extended period, permitting lower application rates than other slow release fertilisers.

Key Benefits

- Slow release of urea nitrogen
- Shorter, denser turf with improved blade colour
- Resilience to stress and mechanical damage
- Enduring effects for up to 10 weeks
- Minimal nitrate leaching

For more information

www.sherriffamenity.com
A range of high quality water soluble fertilisers. Total solubility and easy absorption of nutrients by plants makes the E² Pro Soluble range a highly efficient fertiliser for turf.

The broad NPK analysis within the range covers a host of nutrient requirements. They may also be tank-mixed with approved partner products to fulfil a broader nutrient requirement.

**Key Benefits**

- Broad NPK range of analyses
- Total solubility
- Fast absorption of nutrients by plants
- Flexible application rates
- Tank-mixable

For more information visit [www.sherriffamenity.com](http://www.sherriffamenity.com)
**Ferromel 20**

A water soluble formulation of iron sulphate heptahydrate used for hardening and greening turf.

Ferromel 20 will help discourage worms and moss formation whilst encouraging the proliferation of finer leaved grasses in the sward. Ferromel 20 can be used at any time of year providing frost is not expected. It should not be applied to hard surfaces as it may cause rust staining.

**Key Benefits**
- Hardens turf against disease
- Works rapidly to give turf a dark green colour
- Discourages worm infestation and moss formation
- Encourages finer leaved grasses to develop

<table>
<thead>
<tr>
<th>Total Iron (Fe)</th>
<th>19.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sulphur (SO₃)</td>
<td>27.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (Kg/ha)</th>
<th>Water Rate (L/ha)</th>
<th>Pack Coverage</th>
<th>Bags Per Ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>25Kg</td>
<td>6-25</td>
<td>600-1000</td>
<td>1-4 Ha</td>
<td>0.25-1</td>
</tr>
</tbody>
</table>

**Usage Period**

J J F M A M J J A S O N D

**Krista K Plus**

Krista K Plus is a 100% water soluble, sulphur-free, potassium nitrate fertiliser that is ideal for use all year round but is particularly useful when soil temperatures are low.

Krista K Plus will provide an immediate but gentle boost to growth when other fertilisers are waiting for warmth. The high potassium content will help replenish levels in soils that have developed a deficiency from supporting strong seasonal growth in the summer.

**Key Benefits**
- 100% soluble NK fertiliser
- Ideal for use in cool conditions
- Helps replace potassium in tired soils
- Easy to use

<table>
<thead>
<tr>
<th>Total Nitrogen (N)</th>
<th>13%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate (N)</td>
<td>13%</td>
</tr>
<tr>
<td>Potassium (K)</td>
<td>46%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nutrient Input (Kg/ha)</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Kg/ha</td>
<td>3.25</td>
<td>-</td>
<td>11.5</td>
</tr>
<tr>
<td>50 Kg/ha</td>
<td>6.5</td>
<td>-</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (Kg/ha)</th>
<th>Water Rate (L/ha)</th>
<th>Pack Coverage</th>
<th>Bags Per Ha</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20Kg</td>
<td>25-50</td>
<td>300-600</td>
<td>0.5-1 Ha</td>
<td>1-2</td>
<td>2-4 weeks</td>
</tr>
</tbody>
</table>

**Usage Period**

J J F M A M J J A S O N D
**Calcium**

**Key functions in the plant**
- Calcium pectate is a constituent of the cell walls. Maintains strength and permeability of the cell membrane
- Involved in cell division and elongation, essential for healthy growth
- Disease / pest mitigation by strengthening cell walls
- Involved in nutrient uptake
- Activates a number of plant enzymes
- Involved in heat stress response by the formation of heat shock proteins and stomatal pore function

**Magnesium**

**Key functions in the plant**
- Central atom of chlorophyll molecule and is therefore essential for photosynthesis. However, typically this is only 15-20% of a plant’s requirement for magnesium. Deficiency of magnesium will reduce the plant’s photosynthetic rate
- Key activator of many enzyme reactions and protein synthesis
- Transport of carbohydrates and amino acids from the leaf to the roots and shoots via the phloem.
- Important in nitrogen and phosphate metabolism
- Regulates uptake and cell turgor together with K+

**Sulphur**

**Key functions in the plant**
- Sulphur is an essential component of proteins in plants and animals, since it is required for the formation of two amino acids (cysteine and methionine) that are the building blocks of proteins
- Sulphur is also a component of enzymes (forming bonds within the enzyme structure) and vitamins
- Sulphur is also involved in the reduction of nitrate to amino acids

**Copper**

Copper concentrations in the soil are typically 20ppm (ranging from <10 to 100ppm). Copper is held in a number of different forms in soil, the bulk as organically bound copper. It is also found in soil solution and in exchangeable fractions, weakly bound to inorganic compounds, bound to organic compounds or in the clay lattice. Nearly all of the copper in soil (98%) is unavailable to the plant. However, this reduces the risk of leaching, so copper tends to be relatively uniformly distributed in free draining soils (except Breckland and Icknield soils). Copper is taken up into the plant as the Cu2+ ion.

**Key functions in the plant**
- Important component of several plant enzyme systems, including nitrate reductase, protein synthesis and hormone regulation
- Acts as a catalyst in photosynthesis and respiration
- Required for the manufacture of lignin in cell walls
- Copper, manganese and zinc, are all constituents of superoxide-dismutase (SOD enzyme) important in the detoxification of damaging free oxygen radicals that are formed under stress conditions

**Zinc**

Soils originating from igneous rocks tend to have a high zinc concentration, whilst those from silica are low. The availability is reduced in high pH soils (>7.0) especially in the presence of free calcium carbonate. Zinc deficiency affects fertility and seed production, growth regulation and defence against disease. High soil phosphate concentrations (eg. where fertilizer is placed) can reduce availability of zinc by the formation of zinc phosphate. Zinc is taken up by the plant as the cation Zn2+.

**Key functions in the plant**
- Important in synthesis of nucleic acid
- Required for many enzyme systems in the plant including photosynthesis (CO₂ assimilation), development of chloroplasts, sugar formation and protein synthesis
- Used in metabolism of the hormone auxin
- Low levels of zinc reduce disease resistance to *Rhizoctonia spp*
Iron
Iron typically constitutes 3% of the content of soils, iron is present in soils as oxides that give soil red / brown colour. Iron is transported to root surface as organo-mineral complex, but is taken up as Fe$_2^+$.  
Key functions in the plant
• Required for the synthesis of chlorophyll, 80% of iron content is in chloroplasts
• Involved in respiration (redox reaction)
• Constituent of cytochromes, and involved in utilisation of nitrate and sulphate.
• Involved in lignin synthesis

Manganese
Manganese deficiency is the most widespread micronutrient problem in the UK. Although most soils contain sufficient Mn, soil pH influences availability to the plant. Manganese is taken up into the plant as the cation Mn$_2^+$.  
Key functions in the plant
• Component of enzymes involved in photosynthesis, nitrate reduction, protein synthesis and other plant processes
• Required for chlorophyll synthesis
• Involved in production of vitamin C and carotene
• Manganese, zinc and copper are all constituents of superoxide-dismutase (SOD enzyme) important in the detoxification of damaging free oxygen radicals that are formed under stress conditions

Boron
Key functions in the plant
• Maintenance of cell membranes
• Structural component of cell walls
• Transport of nutrients and sugars through cell membranes
• Production of nucleic acids and cell division
Ferromex Mosskiller Concentrate

Ferromex is a unique high performance liquid moss killer containing stabilised concentrated iron salts created specifically to control moss in professional and amenity turf.

- MAPP registered Liquid Mosskiller
- Rainfast when dry
- Low Scorch potential

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (L/Ha)</th>
<th>Water Rate (L/Ha)</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Litre</td>
<td>150</td>
<td>500-850</td>
<td>1.18</td>
</tr>
</tbody>
</table>

Total Nitrogen (N) 4.6%
Ureic (N) 4.6%
Ferrous Sulphate 16.4%

Nutrient Input (Kg/Ha) N
150 L/Ha 8.14

Usage Period
J F M A M J
J A S O N D

Lawn Sand

A traditional dressing for stimulating grass growth and providing excellent moss control. Lawn Sand also improves grass colour and texture.

- Cost-effective
- Reduces moss
- Ideal early start product
- Improves turf colour

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (g/m²)</th>
<th>Coverage (m²)</th>
<th>Bags per Ha</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Kg</td>
<td>80</td>
<td>250</td>
<td>40</td>
<td>4-6 weeks</td>
</tr>
</tbody>
</table>

Total Nitrogen (N) 4%
Ammoniacal N 4%
Ferrous Sulphate 3%

Nutrient Input (Kg/Ha) N
80 g/m² 2.9

Usage Period
J F M A M J
J A S O N D

Marathon Horti K

A patented blend of mineral and organic fertilisers for shrubs, hanging baskets, bedding and potted plants that releases nutrient for up to 4 months, producing strong and sturdy plants. Conifers and flowering plants will form compact shapes with strong lateral growth.

The organic component of Horti K ensures the minerals from the fertiliser are bound properly by the soil, guaranteeing an active soil life, speeding up the breakdown of dead plant residues.

Horti K releases the correct NPK ratios to allow the compact and steady growth that provides abundant flowering over a long period of time.

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate Hanging Basket</th>
<th>Rate Trees &amp; Bushes</th>
<th>Rate Flowerbeds</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Kg</td>
<td>2.3 g per L potting soil</td>
<td>20-30 g/m²</td>
<td>25-35 g/m²</td>
<td>3-4 months</td>
</tr>
</tbody>
</table>

Nitrogen (N) 7%
Phosphate (P) 6%
Potassium (K) 14%

Usage Period
J F M A M J
J A S O N D
VitalBase

A granular, organic soil improver that stimulates microbial activity, reduces thatch and gives turf a balanced and durable growth.

Vitalbase can be used as an alternative to inorganic fertilisers where a low, steady nitrogen input is required and is especially useful in poor soils. Vitalbase will condition and improve soil structures by increasing moisture holding and nutrient retention capacity (CEC).

The stimulated microbial activity that results from Vitalbase application will help to reduce thatch and has the potential to release additional nutrients by breaking down organic matter in the soil. Vitalbase can be used on all soil types, especially in areas where turf needs to be revitalised. This may include golf roughs, fairways, sports pitches, lawns and landscaped areas.

Marathon Iron Salt

Marathon Iron Salt can be used to prevent or cure iron chlorosis. The product hardens turf to make it less susceptible to diseases and moss.

The use of Marathon Iron Salt gives a rapid dark green colour to the grass and encourages finer turf grass species.

- Use throughout the year as required
- Hardens turf
- Gives a rapid dark green colour to the grass
- Helps to reduce worm cast for a short time after application
- Excellent alternative to liquid products

Tiger Mini

An ideal product for lowering soil pH that is particularly beneficial in alkaline soils.

Sulphur in the form of sulphate is an essential plant nutrient. Tiger 90CR can be used to address sulphur deficiencies that can often be found when sand is the major construction material.

- Increased nitrogen utilisation, phosphate and micronutrient uptake
- Lower soil pH
- Small particles are converted for early plant availability
- Resists leaching until converted to sulphate form
Phosphite

Phosphite is a nutrient that stimulates healthy grass growth with enhanced rooting, helping to support the plant’s natural defenses and ability to withstand stress conditions.

Phosphonates are compounds containing a carbon to phosphorus bond, including those products made from the salts and esters (compounds produced by reaction with acid and alcohols) of phosphorus acid. This should not be confused with phosphoric acid, the basic ingredient of phosphorus fertilisers.

Phosphorus acid is a solid substance that forms a strong acid (phosphonic acid) when mixed with water. This solution is too strong to be used on turf and must be combined with an alkaline compound to raise the pH and decrease the potential for burning.

Potassium hydroxide (KOH) is used in some formulations to neutralise the acidity of phosphoric acid. The resulting solution contains mono and di potassium salts of phosphorus acid and is often referred to as potassium phosphite.

Phosphonate fertilisers should not be confused with phosphate fertilisers. Even though phosphonate and phosphate compounds have similar chemical structures they differ significantly in how they act in plants and fungi. Studies have shown that phosphonates are not effective substitutes for phosphate fertiliser. Indeed research has revealed phosphite can be converted to phosphate primarily by soil borne bacteria but the bacteria would not use phosphite until most phosphate was depleted.

Results have shown turf grasses growing in sand culture and treated with equal amounts of potassium phosphite and potassium phosphate support claims that potassium phosphite does not supply useable phosphorus to turf grass. Turf quality along with enhanced rooting is considered to relate specifically to product formulation or from the suppression of minor root pathogens leading to healthier turf and more extensive roots.

Phosphonate fertilisers are absorbed by plants and incorporated into cells as phosphite (H₂P₀₃⁻). The fact that this ion has one less oxygen atom than phosphate means that it does not act in the same manner as phosphate in plants. When absorbed into cells phosphonate fertilisers do not appear to be involved in typical phosphorus metabolism and cannot be directly linked to plant growth, photosynthesis and respiration.

Phosphonate fertiliser is a true systemic (symplastic ambimobility) having significant mobility in both xylem and phloem. Potassium phosphite may also stimulate the plants own natural defences (chemical and physical).

Amino Acids

Grasses need to produce proteins to support the process of normal cellular growth. Proteins are formed by joining together sequences of different amino acids. Many different types of proteins are needed for building cell structures and for the huge variety of enzymes required to facilitate the complex biochemical pathways of a living plant cell.

Plants have a natural ability to manufacture the amino acids needed for protein synthesis and normal growth. However, research has found that supplementing the grasses nutrition with a mixture of amino acids can be beneficial to health, especially during times of high stress caused by; high temperatures, low soil moisture, frost in winter and early spring and recovery from the aftermath of insect, nematode or disease attack. Under stress, grass is less able to absorb mineral nutrients and consequently the ability to synthesise L-amino acids is diminished. Providing turf with ready-made amino acids saves a great deal of energy, which is most beneficial when such environmental conditions are less favorable.

When applied to the soil, amino acids are an excellent food source for microbes and this will ultimately help to produce organic acids in the soil that can be utilised by the turf.

Humic Acids

Humic acids has been shown to have a positive impact on grass growth by increasing surface water penetration, infiltration and soil-water holding capacity. They also increase the availability of micronutrients, phosphorus and potassium.

Humic acids have been shown to retain nutrient ions, thus preventing them from leaching. They will also buffer plants from high concentrations of fertiliser salts. Trials indicate an increase in germination rates and fibrous root development. Humic acids have also been shown to enhance chlorophyll content of leaves by increasing metabolism.

The most significant benefit is the increased ability of plants to deal with stresses such as drought, frost damage, excessive moisture and heat.
Fulvic Acids

Fulvic acids help to dissolve minerals and transform them so they can be readily absorbed by grass. They are of greatest value in the plant, where they enhance, nutrients, vitamins, coenzymes, auxins and metabolism which contribute significantly to plant growth and health.

Fulvic acids also promote carbohydrates and increasing levels result in the accumulation of soluble sugars in the cell, which makes the plant better able to deal with drought stress. Nutrient uptake is also improved by an increase in the permeability of the cell membrane.

Silicon

Silicon represents about one percent of turf biomass but despite its abundance in soils, deficiency in the plant can still occur; particularly in highly weathered soils that have a low pH and low base saturation. Silicon is deposited in tissues, such as the cuticle and cell wall, as an amorphous silica gel. Indeed most silicon is found in the outer cells or epidermis of the plant and in effect forms a mechanical barrier against pathogens. Grass is able to take up this nutrient freely; however, soils with a high organic fraction and those with a high sand content (such as USGA greens and tees) may be deficient in plant-available silicon.

Turfgrass benefits in many ways from the presence of silicon in the soil. Leaves will have a more erect growth habit and improved tolerance to wear. Silicon can also improve the activity of some enzymes involved in photosynthesis, resulting in increased production of sugars and other carbohydrates. In addition, it has a catalytic role in the expression of physiological resistance through the production of chemicals, such as tannic and phenolic compounds, that act to neutralise pathogenic fungi and bacteria.

Despite the many benefits that silicon confers on plant health, a lack of supportive data has meant that it has not previously been considered an essential element of plant nutrition.

Key functions in the plant
- Better pest and disease resistance
- Improved rate of photosynthesis
- Increased root growth
- Water regulation
- Regulates the uptake of nutrients and helps to prevent toxicity
- Strengthening of cells in leaves and stems
GoGreen Energy

GoGreen Energy is a concentrated bio-stimulant, formulated to assist plant health and relieve stress symptoms in a wide variety of amenity turf situations.

It contains seaweed, plant sugars, simple carbohydrates and trace elements that have been specially selected to give optimum results when grass is stressed.

**Key Benefits**

- Low NPK
- Wetter & spreading agent
- Tank-mixable
- Plant Sugar, simple carbohydrates and trace elements
- Ideal as pre-game stadia application

The low NPK analysis, complemented by suitable wetting and spreading agents, makes this an ideal component of any turf maintenance programme. A cold processed seaweed extract was chosen to provide the maximum amounts of plant growth hormones; such as auxins, gibberellins and betains, to capitalise on increasing the root and shoot development. It also contains a full package of trace elements. Seaweed extracted using heat processing contains much less of the 'natural goodness' needed to restore healthy grass plants.

GoGreen Energy uses a natural plant-based source of sugars and other carbohydrates that does not require a destructive sterilisation process, such as is mandatory with products containing hydrocarbons derived from bovine materials.

**Nutrient Input (Kg/Ha)**

<table>
<thead>
<tr>
<th>Nutrient Input</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 L/ha</td>
<td>0.58</td>
<td>1.07</td>
<td>3.18</td>
</tr>
<tr>
<td>60 L/ha</td>
<td>0.88</td>
<td>1.61</td>
<td>4.77</td>
</tr>
</tbody>
</table>

**Pack size**

- Fine & Outfield Rate (L/Ha)
  - 20 & 200 Litre: 40-60

**Specific Gravity**

- 1.22

**Longevity**

- 4-6 weeks

**GoGreen Select**

A unique complex iron sulphate that may be used as a stand-alone or as a tank-mix partner with fertiliser and herbicide.

GoGreen Select is stable and provides an expanded range of spraying options, not normally associated with the use of iron.

**Key Benefits**

- Urea N for low scorch potential
- Non-staining
- Can be tank-mixed with selective herbicides*

Iron acts as a co-factor in a range of enzyme controlled reactions with key roles in energy transfer and nitrogen utilisation. Iron boosts and bolsters the chlorophyll content and photosynthetic capacity of the grass. It is not a structural part of the chlorophyll molecule but it is involved with its manufacture.

The greening effect after the application of iron is well recognised and the complex formulation of GoGreen Select encourages rapid uptake by the grass allowing this process to take effect more quickly.

* For approved tank-mixes consult your Sherriff Amenity Representative for more information

**Nutrient Input (Kg/Ha)**

<table>
<thead>
<tr>
<th>Nutrient Input</th>
<th>N</th>
<th>P</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 L/ha</td>
<td>1.48</td>
<td>-</td>
<td>0.41</td>
</tr>
</tbody>
</table>

**Pack size**

- Stand Alone Rate (L/Ha)
  - 10 & 200 Litre: 20

**Specific Gravity**

- 1.24
GoGreen Plus is a versatile, convenient formulation of sulphur-free complexed iron that gives extended green-up, whilst correcting iron deficiency and hardening turf against the onset of disease.

The unique complex regulates the release of iron over a longer period to give a sustained effect without the blackening some iron treatments can cause.

**Key Benefits**
- Rapid action
- Sulphur free
- Hardens turf against disease
- Surfactant/iron for dew control
- Can be used all year round

GoGreen benefits from the addition of potassium gives a greater hardening effect on grass throughout autumn, winter and spring. A trace element package and supplemented magnesium work together with a small amount of nitrogen to improve the health and appearance of turf, without stimulating rapid growth.

The ability of iron tonics to discourage low levels of microdochium patch has been known for many years. GoGreen Plus with it’s additional potassium, magnesium and trace elements is particularly useful in this respect. With this in mind Sherriff Amenity commissioned a series of trials with the STRI and other independent research organisations to evaluate the benefits of tank-mixing GoGreen Plus with Fungicides. As a result of this work we are able to recommend several tank-mixes that give dramatic improvements to the duration of control of heavy levels of Microdochium Patch.

A useful amount of potassium (10%) hardens the grass by strengthening cell walls and augments a trace of naturally occurring nitrogen and 8.7% slow release iron to give a product that improves the health and appearance of the turf without the blackening caused by some iron treatments.

With an analysis of 2.0.10 + 8.7 Fe the product will easily fit into most turf nutritional programmes and can be applied at any time of year. It is specially useful as a spring start fertiliser where low nitrogen input is required.

GoGreen Granules can be used on all fine turf areas; including golf and bowling greens, tees, fairways, sports pitches, outfield turf and ornamental lawns.
SeaVolution

SeaVolution is used as a remedy for poor grass growth caused by stress, restricted root development and root attack by parasitic nematodes and fungal pathogens.

The unique extraction process squeezes every last drop of goodness from the seaweed giving a product that cannot be bettered in its class.

SeaVolution can be used around the golf course on greens, tees, approaches and fairways. It can also be used on bowls greens and other fine turf surfaces, outfield sports areas and ornamental lawns.

SeaVolution Plus

SeaVolution Plus provides all the benefits of SeaVolution but with the addition of chelated iron for fast green-up and maximum hardening of the turfgrass, to discourage disease attacks.

SeaVolution Plus can be used around the golf course on greens, tees, approaches and fairways. It can also be used on bowls greens and other fine turf surfaces, outfield sports areas and ornamental lawns.

Nematode research

Within the European turf grass industry, an increase in nematode damage has led to the use of a range of techniques to reduce both nematode numbers and turf symptoms. The use of cold process seaweed extract has been particularly effective in alleviating stress and reducing visible nematode symptoms.'

Key Benefits

- Cold extracted seaweed range
- Reduces plant stress
- Strengthens the plant and helps develop healthy roots
- Can reduce the effects of a nematode attack
- Rich amino acid content
An organic mini-granular blend of seaweed meal and composted seaweed, containing calcium, magnesium and micronutrients in an unique formulation.

SeaVolution Granular can be used on all sand and soil-based loams, helping to produce an improved soil structure and enhanced root development for the grass plant.

**Key Benefits**
- Contains humic acid, calcium and magnesium
- Three types of seaweed
- Enhanced root development
- High concentration of seaweed extract
- Increases root length and mass
- Consistent proven results
- Fits in with most fertiliser & soil programs

SeaVolution Granular contains three different seaweed types, each component having different benefits:

- **50% Micronised Ascophyllum nodosum**
  Fast acting - available to the plant straight away. It will breakdown completely within 6 weeks of application.

- **25% Ascophyllum seaweed meal**
  Slow release - this conventional seaweed will breakdown within 4 months of application, providing long-term improvement to the soil structure.

- **25% calcified seaweed.** With more than 25% of natural calcium and about 3% of natural magnesium, this product benefits the turf both directly and indirectly.

The components of Rootmass Plus are particularly effective for improving both mass and structure development of the root system, acting directly on parts of the plant below ground and indirectly through enhancement of soil microbial activity.

Rootmass Plus has been developed to maximise the synergies between SeaVolution and natural soil structure enhancers.

The product contains high quality, plant available humic and fulvic acids, a highly soluble chelated iron, together with SeaVolution, the market leading cold processed seaweed extract.

Rootmass Plus is an ideal partner for Magflo 300, and E2 Pro PhosRite, when applied in support of plant nutrients, as the grass is naturally stimulated to lay down additional roots and store growth supplements in the autumn and spring months.
An efficient anti-stress bio-stimulant, containing the maximum concentration of free amino acids, enhanced with nitrogen for faster and more efficient recovery of grass after physical stress.

Amino Turf helps the grass conserve energy otherwise used for the production of L-amino acids. It stimulates soil microbial production of organic acids, providing further support for the requirements of the turf.

**Key Benefits**
- Stress recovery
- Invigorating and stimulating effect
- Fast response
- Formulated with organic biomolecules of a natural origin

Grasses need to produce proteins to support the process of normal cellular growth. Proteins are formed by joining together sequences of different amino acids. Many different types of proteins are needed for building cell structures and for the huge variety of enzymes required to facilitate the complex biochemical pathways of a living plant cell. Plants have a natural ability to manufacture the amino acids needed for protein synthesis and normal growth. However, research has found that supplementing the grasses nutrition with a mixture of amino acids can be beneficial to health, especially during times of high stress caused by; high temperatures, low soil moisture, frost in winter and early spring and recovery from the aftermath of insect, nematode or disease attack. Under stress, grass is less able to absorb mineral nutrients and consequently the ability to synthesize L-amino acids is diminished. Providing turf with ready-made amino acids saves a great deal of energy, which is most beneficial when such environmental conditions are less favorable.

When applied to the soil, amino acids are an excellent food source for microbes and this will ultimately help to produce organic acids in the soil that can be utilised by the turf.

**Nutrient Input (Kg/Ha)**
- N : 0.56
- 10 L/ha : 1.12

**Pack size**
- 5 L
- Rate (l/Ha) : 5-10
- Water Rate (L/Ha) : 200-400
- Specific Gravity : 1.25
- Longevity : 4 weeks

The product acts directly to stimulate soil microbial activity around roots and promotes improvement in water and nutrient uptake. Added NPK and micronutrients ensure the grass is supported for growth and recovery.

**Key Benefits**
- Denser Sward
- High resistance to stress
- Compact turf
- Increased tillering
- Active deep root development

Trials indicate an increase in germination rates and fibrous root development. Humic acids have also been shown to enhance chlorophyll content of leaves by increasing metabolism. The most significant benefit is the increased ability of plants to deal with stresses such as drought, frost damage, excessive moisture and heat.

**Total Humic Extract**
- 29%
- Fulvic Acid : 15%
- Free Amino Acids : 22%
- Organic Nitrogen : 3%
- Phosphorus : 16%
- Potassium : 18%
- Zinc : 0.2%
- Iron : 0.1%
- Manganese : 0.2%
- Molybdenum : 0.25%

**Nutrient Input (Kg/Ha)**
- N : 1.6
- P : 1.8
- K : 2.4
- 10 Kg/ha : 2.7
- 15 Kg/ha : 4 weeks

**Pack size**
- 15 Kg
- Rate (Kg/Ha) : 10-15
- Water Rate (L/Ha) : 200-400
- Longevity : 4 weeks
6 Iron

6 Iron is a convenient, cost-effective liquid soluble iron that can be used to correct iron deficiencies, provide colour, harden turf against disease and discourage moss and algae.

6 Iron is an ideal low cost tonic for turf that can help prevent moss formation, Fusarium and other diseases at the early stages, in order to reduce the turf's dependence on moss killers and expensive fungicides.

- Corrects iron deficiencies
- Provides colour
- Hardens turf against disease
- Discourages moss and algae
- Aids winter hardiness

Calsal

Calsal is a liquid calcium nitrate fertiliser which can be used to help raise soil pH, both nitrate and calcium will help to do this.

Nitrate is also 100% available nitrogen, therefore the product is ideal for use under cold temperature conditions.

- Helps raise soil pH
- Sulphur free
- Tank-mixable

Fossil

Fossil is a phosphite and silicon based nutrient product for foliar application. It supports the plants natural defences against disease, reducing stress and promoting recovery.

Our trials at STRI have shown that Fossil, along with other selected nutritional and adjuvant products, when mixed with certain active ingredients can produce an effective method of disease control. For more information on tank-mixes see the Fungicide section.

- Encourages erect grass growth
- Increases wear tolerance
- Promotes deeper rooting
- Supports natural defence against disease
- Reduces stress and promotes recovery

www.sherriffamenity.com
Magflo 300 can be used to regulate the uptake of other plant nutrients, assist with phosphate metabolism and is essential for chlorophyll production.

Plant availability is directly influenced by other plant nutrients. High levels of potassium can interfere with the uptake of magnesium as can elevated levels of ammonium fertilisers in soils already low in magnesium.

- High concentration of Mg
- Wide range of tank-mix options
- Excellent plant absorption
- Highly mobile in plant
- Lasting effect
- Very safe formulation

Manifol Excel is a concentrated product for the treatment of manganese deficiency.

Soils with low levels of plant available manganese are especially vulnerable to Take-all infection. Indeed, the pathogen can convert available manganese to forms that are unavailable for plant uptake, to enhance the severity of infection.

As the pH of the soil increases, the requirement for manganese increases. With less availability, there is a requirement for a higher level of input to overcome deficiency.

- Aids the synthesis of chlorophyll
- Activation of enzymes
- Nitrate assimilation
- Involved in transportation in the photosynthetic process
- Vital to plant defence mechanisms
- Utilised for the production of chemicals that act to defend the plant against soil borne infections

Purity is a mini grade soil conditioner made from plant extract which is designed to purify the soil before the on-set of spring growth and autumn/winter shut down.

The aim of this product is to provide the soil with a building block of organic matter, which will stimulate available nutrients to release steadily over a 6-8 week period whether retained or applied by use of a NPK fertiliser.

This product can be used all year round but we recommend application in early spring and early autumn/winter. Apply Purity evenly over the turf at 30g/m² (300 Kg/ha) To enhance and start the process, water in after application for 5-10 minutes. This is designed to wash the plant extracts into the turf and start the break down process.

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (L/ha)</th>
<th>Water Rate (L/ha)</th>
<th>Specific Gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Litre</td>
<td>2-4</td>
<td>200-500</td>
<td>1.51</td>
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</table>

<table>
<thead>
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<th>Pack size</th>
<th>Rate (L/ha)</th>
<th>Water Rate (L/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Litre</td>
<td>1</td>
<td>200-400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (g/m²)</th>
<th>Coverage (m²)</th>
<th>Bags per Ha</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>25kg</td>
<td>30</td>
<td>833</td>
<td>12</td>
<td>6-8 weeks</td>
</tr>
</tbody>
</table>

| Nitrogen | 1.1% |
| Phosphate | 0.26% |
| Magnesium | 0.02% |
A high quality organic nutrient and plant bio-stimulant, containing silicon, salicylic acid and garlic. Designed to stimulate natural defence mechanisms and aid recovery of grass following disease attack.

Bio-stimulants have been shown to influence several metabolic processes such as respiration, photosynthesis, nucleic acid synthesis and ion uptake. They may enhance nutrient availability, water holding capacity, increase antioxidants, enhance metabolism and increase chlorophyll production.

Turf Shield Pro is a concentrated liquid fertiliser based on garlic extract produced by cell-burst technology.

Allicin contained in the garlic extract, co-formulated with sulphur and aromatic aldehyde, acts as a naturally-based plant health promoter that helps to boost the plant’s ability to defend itself against pest attack. Turf Shield Pro is a natural soil amendment product, which helps to promote root development and overall plant health.

Turf Shield Pro is not a pesticide and has no known pesticidal activity, the strong odour associated with Turf Shield Pro means treated areas become less attractive to organisms in the soil such as earthworms, leatherjackets and nematodes.

- Promotes an uninviting environment to pests
- Helps prevent root damage caused by pests
- Reduces risk of disease
- Increases vigour and plant health

Stor-it is a mineral soil improver that is based on activated clinoptilolite.

This porous volcanic clay is charged with easily exchangeable cat-ions, like the clay humus complex and increases the CEC in the soil. Furthermore it absorbs up to 50% of its own weight in water.

Stor-it can make greens perform better by managing water availability.

- Even water distribution through rootzone
- Drier and faster greens surface
- Increased nutrient availability
- Regulates excess salts

Pack size | Application Method | Application Rate | Application Notes
---|---|---|---
25 Kg | Amendment to construction mix | 10 % | |
Coring | 25 % | Apply 25%w/w add to sand or dressing |

Usage Period

J F M A M J
J A S O N D

Initial Application Rate

1 L/ha

Subsequent Application Rates

3-5 L/ha

Water Rate (L/ha)

200-500
Autumn is often referred to as the ‘season of mists and mellow fruitfulness’ and each year it can bring back the problems caused by fungi on turf. Falling night temperatures cool the soil, thus slowing the growth of grass and, with an increase in humidity that results from frequent autumn rainfall, conditions are right for the invasion of the fungi. Greenkeepers and groundsmen get ready to do battle with the disease patches that can spoil the appearance and play of the turf they manage. However, this is also a time when we see an invasion of the macroscopic fungi that also inhabit the soil. These cap producing fungi literally give ‘rise’ to the structures we know as mushrooms and toadstools. In this short article I will be taking a look at the larger fungi and the options we have to deal with them.

According to literature there is no difference between mushrooms and toadstools; except perhaps on the weekly shopping list, where most supermarkets offer only a variety of different mushrooms for sale! The terms mushroom and toadstool both refer to the fruiting body of types of fungi that produce these large structures, whose sole purpose is to distribute reproductive spores. In the past there was a tendency to refer to poisonous species as toadstools but there was no clear rule on this. Many thousands of species of mushrooms are found worldwide; a rough estimate would be 20,000 species globally with some 4,000 in the UK. Mushrooms are classified in the order Agaricales and are spread between two phyla; Basidiomycota and Ascomycota. The ‘white’ or ‘button’ mushroom (Agaricus bisporus) is the most common form of edible mushroom, accounting for 90% of all types consumed in the western world. Some strains of A. bisporus have darker flesh and are sold as ‘Portobello’ and ‘chestnut’ mushrooms.

Certain species of mushrooms are highly nutritious; providing us with a balanced food that is low in fat, carbohydrates and salt yet contains some essential minerals and vitamins. Healers in ancient times recognised the medicinal benefits of mushrooms and today our scientists have discovered the valuable contribution they make towards improving well-being; lowering cholesterol, blood pressure, supporting the immune system and helping in the fight against certain forms of cancer.

The vast majority of mushrooms are edible although not all will suit the human palate. A few species are poisonous and can have serious or even fatal consequences when consumed. Some poisonous mushrooms appear similar to edible varieties, so extreme caution must be exercised when eating wild mushrooms. The land owner’s permission should also be sought before picking fungi.

There are three types of problems caused by macroscopic fungi on turf.

- Litter left behind when the fruiting structures are broken up by mowing.
- Fairy rings
- Hallucinogenic species

The presence of mushrooms littering the surface can usually be attributed to pieces of decaying wood or dead plant matter below the surface. The fungus is just doing a bit of re-cycling and will not damage the grass other than making a mess. There are no chemical remedies to deal with this problem so probably the easiest method of control is to remove the caps as soon as possible after they are first seen. Grasp the stalk as low down as possible and deposit the caps well away from the turf – on a compost heap would be best.

The reproductive spores are often borne on gills on the underside of the cap. When mature they fall and are carried on the wind to establish the mushroom in new locations. If the caps are removed cleanly and swiftly we can hope to minimise the spread of the problem in future. I have noticed that the caps on my lawn wither when I apply an autumn fertiliser, which may be due to the high iron content in the product.

The second group of problem mushrooms on turf are produced by fairy ring fungi. Strictly speaking they cause a disease of the soil rather than the turf because there is no invasion of the grass plant tissue. Instead we see symptoms that are external effects on the turf caused by a fungal presence beneath. The fungal mycelium is usually found between 75 and 150mm below the grass surface. The ring shape is the result of the underground fungal mycelium growing in a rough circle away from a starting point. The rings will increase in size each year as the fungus moves through the soil, feeding on organic matter as it spreads outwards. Depending on the species, the ring will increase in diameter by 30 to 50cm per year. If you are prepared to wait long enough it will eventually move into neighbouring land! If two rings meet they usually join together as one. We recognise three types of fairy ring according to the severity of the symptoms.

Type 1 fairy rings produce a circle in which the grass is stunted or absent. There are usually toadstools arising from this area of poor growth (dead area) and for a few cm on either side. The dead area is caused by the deposition of thick wax in the soil where the fungus is located, which prevents water from reaching the grass roots.

Type 1 rings are also characterised by a band of stimulated grass adjacent to the dead area; which is longer, thicker and darker green in colour when compared to the surrounding turf. The stimulated growth results from excretion of waste products such as nitrates and other nutrients by the fungal mycelium as it breaks down organic matter for food.

The most common species causing type 1 rings In the UK is *Marasmius oreades* but each of the three ring types is associated with many different fungi.

The second type of fairy ring produces a band of stimulated grass growth in which mushrooms or puffballs can be found at certain times of the year. Although this is not as damaging as the type one ring, since it does not kill the grass, it is still a disfiguring scar on an area of close mown fine turf such as golf or bowling greens. The dark bands or ‘ribbons’ are more evident in long hot dry summers when the surrounding grass tends to lack colour.
Type 2 fairy rings - produce a band of stimulated grass growth that may also contain puffballs or caps

The third type of fairy ring has only a circle of toadstools or puffballs, without having a stimulated or a dead area. Type 3 fairy rings are essentially the same as the first group of problem caps on turf, apart from their circular growth habit. Harvesting caps or puffballs from the rings prior to mowing will help to minimise the spread to new areas.

Control of fairy rings is extremely limited following the withdrawal of several chemicals in recent years. One approach is to tackle the wax deposits in the soil with a specialised wetting agent such as that marketed by Vitax under the brand name ‘Clearing’. This product is recommended for all three ring types, with application in the spring or early autumn.

There are no approved products for controlling type 1 rings but there is a label recommendation for treating type 2 rings with either ‘Heritage’ or ‘Heritage Maxx’ - available from Everris. The recommendation is based on limited evidence and the user is advised to pre-wet the area to be treated to improve the penetration of the chemical through the soil.

Hallucinogenic mushrooms (now popularly known as ‘shrooms’ or ‘magic mushrooms’) present a third type of ‘cap fungi’ problem to turf managers. Globally there are about 200 species of mushrooms that have hallucinogenic properties. Famously, the TV gardening presenter Alan Titchmarsh found some Fly Agaric (Amanita muscaria) in the Gardens at Buckingham Palace. This species has mind altering properties but is also categorised as poisonous. However, a spokesman from the palace was quick to report: “For the avoidance of doubt, fungi from the garden are not used in the Palace kitchens.”

In the UK the most commonly found ‘shroom’ is the Liberty cap Psilocybe semilanceata

This tiny ‘pixie-capped’ species is often found in moist pastures, preferring areas with ‘weathered dung’ and according to some experts it is particularly associated with turf grazed by deer herds. The cap is no more than 15mm across and appears brown in colour when wet but dries to a pale camel colour.

The liberty cap belongs to a group of around 100 species that contain the chemicals psilocybin and psilocin, which cause hallucinations when ingested. Much research has been done into the effects of consuming these mushrooms and it has been reported that they are not addictive in any way but users can become psychologically dependent on them. The ‘Misuse of Drugs Act 1971’ lists these to chemicals as class A drugs but the law regarding the status of the mushrooms that contain them was unclear until the enactment of ‘The Drugs Act of 2005’ when both fresh and prepared (dried/cooked/formulated) specimens became illegal to possess, sell or consume.
Aqua-Zorb Liquid

A concentrated non-ionic turf wetting agent that will enable water to move faster and deeper into the soil profile. One application can last all season.

Aqua-Zorb Liquid is the ultimate wetting agent that treats the cause of localised Dry Patch. Its long lasting residual technology ensures that a single application persists for up to five months, during the higher summer temperatures.

Aqua-Zorb Liquid can also be applied in autumn to ensure improved drainage of winter rainfall and effectively reduce the formation of dew.

Key Points

- Effective treatment for localised Dry Patch
- 1 application can last all season
- Use high rate for long term effect

To get around the problem of Dry Patch we can use a wetting agent that works by neutralising the polarity of water molecules which allows them to pass through wax coated soils.

Aqua-Zorb is a well proven range of water management products than can prevent and correct localised Dry Patch, improve drainage, alleviate compaction, reduce the quantity of irrigation water required, suppress the formation of dew and greatly improve the quality of the sward.

Trials at the Sports Turf Research Institute demonstrated that Aqua-Zorb effectively removes the wax coating on the soil particles allowing water to penetrate the soil more effectively.

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (L/Ha)</th>
<th>Water Rate (L/Ha)</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 L</td>
<td>10-50</td>
<td>400-10,000</td>
<td>Up to 5 Months</td>
</tr>
</tbody>
</table>

Usage Period

J F M A M J J A S O N D

Aqua-Zorb 45

Aqua-Zorb is designed for use in 4-6 weekly maintenance programmes to control localised Dry Patch and maintain perfect playing conditions.

It carries the same proven benefits as Aqua-Zorb Liquid such as water saving and improved drainage.

Aqua-Zorb 45 improves turf quality and colour with a special formulation that reduces scorch without loss of effect.

Key Points

- Reliable, cost-effective treatment for Dry Patch
- For use in 4-6 weekly programmes

Water is a very polar molecule; having two tiny, positively charged hydrogen atoms attached to a relatively large oxygen atom bearing two negative charges.

Water molecules act like bar magnets, pulling the oppositely charged end of an adjacent water molecule towards itself, building long chains that eventually form a spherical droplet. Water is attracted to charged surfaces such as soil and on contact the droplets will coalesce and spread over the surface; eventually soaking deep into the soil due to the attraction from particles lower down.

Dry Patch (hydrophobic soil) is the result of wax secretion by soil fungi. The wax coats the soil particles, making the surface non-charged so that there is no attraction to water molecules. This causes the water to form droplets which are unable to travel through soil.

<table>
<thead>
<tr>
<th>Pack size</th>
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<th>Water Rate (L/Ha)</th>
<th>Longevity</th>
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</thead>
<tbody>
<tr>
<td>10 L</td>
<td>20</td>
<td>200-400</td>
<td>4-6 weeks</td>
</tr>
</tbody>
</table>

Usage Period

J F M A M J J A S O N D
Wetting Agent

Aqua-Zorb Granules

A biodegradeable granule, containing a non-ionic water management product for the treatment of all hydrophobic soil conditions. One application will last for up to 5 months.

Aqua-Zorb Granular has been formulated as an easy-to-apply granule, giving fast penetration and rapid granule breakdown, it can be used in combination with aeration for the treatment of Dry Patch.

Key Points
- Easy and convenient to apply
- Long term results
- Ideal for spot treatment

Key Points

Aqua-Zorb Tablet

A wetting agent designed for use with tank irrigation systems.

The tablet is dropped into the irrigation water tank, where it will completely dissolve within 4-6 hours. The effervescent action in the formulation results in air bubbles forming on the surface of the tablet, causing it to move around the tank. This unique self-agitating system ensures thorough mixing.

Key Points
- Special formula for use in irrigation tanks
- Unique selfagitation system
- Compliments the other Aqua-zorb products

Aqua-Zorb Pellets

For intensive spot treatment of problematic areas that are severely water repellent and suffering from Dry Patch.

Aqua-Zorb Pellets give greater flexibility in the fight against Dry Patch and are a simple and effective way of applying Aqua-Zorb wetting agent through a hose-end applicator.

Key Benefits
- Easy to use
- Hose-end pellet formulation
- Proven formulation
- One pellet treats 3 average sized greens (1000-1500m²)

Excel Wetting Agent

Excel Wetting Agent is a multi-purpose, low dose wetting agent.

Excel Wetting Agent is ideal for use on larger areas, such as golf fairways and sports pitches.

Key Benefits
- Soil wetter and penetrant
- Adjuvant
- Spray drift reducer

Usage Period

J F M A M J
J A S O N D

Pack size Rate (g/m²) Longevity
15 Kg 30 upto 5 months

Usage Period

J F M A M J
J A S O N D

Pack size Rate
2.5 Kg 1 Tablet/Ha

Usage Period

J F M A M J
J A S O N D

Pack size Rate (l/Ha) Water Rate (l/Ha)
1 L 1 300

www.sherriffamenity.com
Dollar Spot is caused by the fungus *Sclerotinia homoeocarpa*, which is becoming an increasing problem in intensively managed sports turf surfaces. Fescues are particularly susceptible, although it may also be seen in swards dominated by Annual Meadow-grass.

Small ‘straw’ coloured, bleached spots typically 10 - 20mm in diameter; rarely much larger than this. The patches are distinct and circular but can sometimes join together forming larger spots. The diseased grass is usually dry. Close examination of individual grasses near the outer edges of the patch often reveals a dark margin separating the dead straw coloured tissue from the green parts.

**Influencing Factors**

- Dollar spot is a low fertility disease and is often found alongside Red Thread/Pink Patch

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**Leaf Spot**

Leaf Spot or “melting out” is an unsightly disease that affects a wide range of different grass plants, it is especially of a concern in stadium environments.

On Smooth-stalked Meadow-grass, the fungus *Drechslera poae* produces oval spots having a pale brown centre surrounded by a brown or purple margin. The leaf dies back from the tip. On Perennial Ryegrass a different species (*Drechslera siccans*) produces dark brown oval spots which progress from the leaf tip downwards. Leaf spot diseases are found on other grasses and are mostly host specific (they attack only one grass species).

**Influencing Factors**

- Turf mown to a height of less than 25mm is reported to be more at risk. Unfortunately, much of the sports turf utilising these grasses is required to be less than 25mm - e.g. golf tees, cricket squares & hockey pitches.

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**Anthracnose**

Recent research has identified two significant stages of this disease; a foliar blight that can spread rapidly during the summer months causing considerable discolouration of affected plants. Leaves of individual grass plants turn yellow, with the youngest leaves on each plant appearing red or orange.

Under conditions of high moisture during the autumn and spring, the second stage of the disease can occur when the plant rots at the base and is easy to pull from the turf. Examination of the rotting base of the plant shows extensive dark staining and sometimes black reproductive structures can just be seen with the naked eye, these spore bearing structures (acervuli) are little more than the size of a pin head.

**Influencing Factors**

- Poor growing conditions especially compacted soils where air supply to the roots is restricted.
- Poor fertility in the early autumn is also likely to encourage this disease.

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**Microdochium Patch**

Orange-brown patches 2.5 - 5cm across, increase in size as the disease progresses. Active patches on turf have a distinctive ginger appearance and, when viewed early in the morning, creamy white mycelium resembling cotton wool can be seen in the centre and towards the outer edge of the patch. Grass in active patches is often slimy.

Once the disease has been effectively controlled the scars will remain until there is sufficient grass growth to fill in. The scars have a pale straw coloured appearance and are drier to the touch with no evidence of mycelium. The disease can often become very active under a covering of snow. As the snow melts the large disease patches (sometimes 25 - 50cm across) have a bright ginger ring surrounding a pale pink straw coloured centre. This form of the disease is known as Pink Snow Mould.

**Influencing Factors**

- Shade
- Humidity
- Alkaline surface
- Drainage (inefficient)
- Excess nitrogen

---

**Turf Diseases**

- Dollar Spot:
  - *Sclerotinia homoeocarpa*
  - Small ‘straw’ coloured, bleached spots typically 10 - 20mm in diameter; rarely much larger than this. The patches are distinct and circular but can sometimes join together forming larger spots. The diseased grass is usually dry. Close examination of individual grasses near the outer edges of the patch often reveals a dark margin separating the dead straw coloured tissue from the green parts.

- Leaf Spot:
  - *Drechslera poae* on Smooth-stalked Meadow-grass, *Drechslera siccans* on Perennial Ryegrass
  - Leaf dies back from the tip. Dark brown oval spots progress from the leaf tip downwards.

- Anthracnose:
  - Foliar blight that can spread rapidly during summer months causing considerable discolouration of affected plants.

- Microdochium Patch:
  - Orange-brown patches 2.5 - 5cm across, increase in size as the disease progresses.

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Take-all Patch

Take-all patch is caused by the fungus *Gaeumannomyces graminis*, which inhabits the soil and attacks the roots and stolons of bentgrass (*Agrostis spp.*). The disease can be a serious problem in turf with a high percentage of bentgrass.

Rings or part rings of orange/brown grass from 10cm to 1m diameter. The orange colouration is more intense at the edge of the ring. Inside the ring the turf is thinned to a degree that depends on the percentage of susceptible grasses. On golf greens sown with pure bentgrass, the disease leaves large dead areas devoid of all grass. The fungus attacks the roots causing them to turn grey and discoloured. Infected grasses can be plucked more easily from the turf as a result of the damage to the roots.

**Influencing Factors**
- Wetness and surface alkalinity
- The absence of antagonistic micro-organisms in the soil due to over use of fungicides or the use of very sandy construction materials, may encourage the disease to develop.

Fairy Rings

**Type 1** e.g. *Marasmius oreades* - A ring of dead grass may be seen within a wider ring of stimulated dark green grass. Fruiting bodies are often seen within the dead area and the outer stimulated area. *Marasmius oreades* is the most common type 1 Fairy Ring and produces small tan coloured toadstools.

**Type 2** e.g. *Lycoperdon spp.* - These produce a ring or ribbons of stimulated grass with toadstools or small puff-balls during the spring & summer. The rings are rarely round as is the case with other types of Fairy Ring. There is no dead area of grass with the type 2 Fairy Ring except in extreme drought conditions.

**Type 3** e.g. *Hygrophorus spp.* - A ring of toadstools is the only sign of the type 3 Fairy Ring. This is the least damaging of all Fairy Rings and often goes unnoticed on frequently mown turf.

**Influencing Factors**
- Surface wetness - may encourage Fairy Rings.
- The symptoms of type 2 rings become more apparent when turf nutrition is low.
Sherriff Amenity, backed by its parent company, is at the forefront of practical solutions for turf management. Our trials and research programmes at the STRI, along with other independent research organisations, is at the vanguard of technical turf care and specialises in the development of innovative technology to solve everyday problems in a practical way.

To maximize the long-term usefulness of a product, it should be used sustainably and in a manner that protects the environment. No other amenity company has put more resources and research into technical programmes and product efficacy to ensure high quality, clean and safe playing surfaces.

Mixing two or more products in the spray tank can be carried out to reduce the potential for disease resistance development. Certain tank-mixes can also improve the quality of turf and reduce the time taken for it to recover from disease attack.

Fungicides are selected with different modes of action so that the resulting mixture will attack the target disease on two or more fronts. This makes it more difficult for the pathogen to develop resistance to the treatment.

### Fungicide Packs

**Microdochium Package 1**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Pack Quantity</th>
<th>Rate/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headway</td>
<td>1 x 3L</td>
<td>3L</td>
</tr>
<tr>
<td>Seavolution</td>
<td>2 x 10L</td>
<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>1 Ha</td>
<td>400L</td>
</tr>
</tbody>
</table>

Headway, a fungicide containing the ‘Maxx’ formulation of azoxystrobin and propiconazole, is partnered with the market-leading cold processed seaweed extract ‘Seavolution’ to provide an excellent treatment for Microdochium patch. Trials have shown Headway to be an outstanding treatment for Microdochium patch, whilst Seavolution encourages disease infected areas to recover, optimising turf quality.

**Microdochium Package 3**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Pack Quantity</th>
<th>Rate/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scorpio</td>
<td>3 x 250g</td>
<td>700g</td>
</tr>
<tr>
<td>GoGreen Plus</td>
<td>4 x 5L</td>
<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>1 Ha</td>
<td>500L</td>
</tr>
</tbody>
</table>

MP3 brings together the unique meso-stemic translaminar activity of Scorpio with GoGreen Plus, a market-leading complexed iron, which encourages disease infected areas to recover, optimising turf quality and controlling Fusarium patch. The resulting mixture provides a reliable and longer lasting preventative treatment.

**Microdochium Package 8**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Pack Quantity</th>
<th>Rate/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heritage WG</td>
<td>1 x 500g</td>
<td>500g</td>
</tr>
<tr>
<td>Roller</td>
<td>1 x 1L</td>
<td>1L</td>
</tr>
<tr>
<td>GoGreen Plus</td>
<td>4 x 5L</td>
<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>1 Ha</td>
<td>500-600L</td>
</tr>
</tbody>
</table>

This package brings together the unique action of Heritage, with the complexed iron in Go Green Plus, optimised by the adjuvant Roller to provide a reliable and proven force against Microdochium Patch.

**Microdochium Package 11**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Pack Quantity</th>
<th>Rate/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headway</td>
<td>1 x 3L</td>
<td>1.5L</td>
</tr>
<tr>
<td>Medallion TL</td>
<td>1 x 3L</td>
<td>1.5L</td>
</tr>
<tr>
<td>GoGreen Plus</td>
<td>8 x 5L</td>
<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>2 Ha</td>
<td>500L</td>
</tr>
</tbody>
</table>

Our trials at STRI continue to underline the value of a 1+1=3 tank-mixing approach to fungicide use and disease control, and have proved the benefits of combining specific nutrients and adjuvants to speed up turf recovery following disease attack. MP9 combines Headway, Medallion TL, and GoGreen Plus.

**Microdochium Package 12**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Pack Quantity</th>
<th>Rate/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headway</td>
<td>1 x 3L</td>
<td>1L</td>
</tr>
<tr>
<td>GoGreen Plus</td>
<td>4 x 5L</td>
<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>1 Ha</td>
<td>500</td>
</tr>
</tbody>
</table>

Headway, a fungicide containing the ‘Maxx’ formulation of azoxystrobin and propiconazole, is offered here with the market-leading complexed iron GoGreen Plus, to provide superb control of Microdochium patch. Trials have shown the benefits that result from using Headway, backed up by the recuperative powers of the complexed iron in GoGreen Plus, which in tandem put the quality back into diseased turf.

**Microdochium Package 9**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Pack Quantity</th>
<th>Rate/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headway</td>
<td>1 x 3L</td>
<td>1.5L</td>
</tr>
<tr>
<td>Medallion TL</td>
<td>1 x 3L</td>
<td>1.5L</td>
</tr>
<tr>
<td>GoGreen Plus</td>
<td>8 x 5L</td>
<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>2 Ha</td>
<td>500L</td>
</tr>
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<tbody>
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<td>1.5L</td>
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<tr>
<td>Medallion TL</td>
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<td>1.5L</td>
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<tr>
<td>GoGreen Plus</td>
<td>8 x 5L</td>
<td>20L</td>
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<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
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<tr>
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</tr>
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<td>1.5L</td>
</tr>
<tr>
<td>GoGreen Plus</td>
<td>8 x 5L</td>
<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>2 Ha</td>
<td>500L</td>
</tr>
</tbody>
</table>

Our trials at STRI continue to underline the value of a 1+1=3 tank-mixing approach to fungicide use and disease control, and have proved the benefits of combining specific nutrients and adjuvants to speed up turf recovery following disease attack. MP9 combines Headway, Medallion TL, and GoGreen Plus.

**Microdochium Package 12**

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Pack Quantity</th>
<th>Rate/Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headway</td>
<td>1 x 3L</td>
<td>1.5L</td>
</tr>
<tr>
<td>Medallion TL</td>
<td>1 x 3L</td>
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<td>Coverage Water Rate/Litre</td>
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</tr>
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<td>20L</td>
</tr>
<tr>
<td>Disease Controlled</td>
<td>Coverage Water Rate/Litre</td>
<td></td>
</tr>
<tr>
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</tr>
</tbody>
</table>

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The addition of the wetting agent Aqua-Zorb 45 to Headway ensures that the active ingredients are carried down into the target area. Manifol Excel helps relieve the symptoms of manganese deficiency. Azoxystrobin, one of the active ingredient in Headway has shown to demonstrate positive effects on Type 2 Fairy Rings.

One of our trials at STRI has shown that when Headway, a fungicide that contains azoxystrobin & propiconazole in a Maxx formulation, is tank-mixed with the carefully selected nutritional and adjuvant products Fossil, and Roller an effective method of disease control is produced. MP14 combines all three products.

Take All & Fairy Ring Package 1

<table>
<thead>
<tr>
<th>Product</th>
<th>Coverage</th>
<th>Curative</th>
<th>Preventative</th>
<th>Systemic</th>
<th>Translaminar</th>
<th>Contact</th>
<th>Nutrient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take All &amp; Fairy Ring Pack 1</td>
<td>1 Ha Early</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>Mn</td>
</tr>
</tbody>
</table>

Microdochium Package 14

<table>
<thead>
<tr>
<th>Product</th>
<th>Coverage</th>
<th>Curative</th>
<th>Preventative</th>
<th>Systemic</th>
<th>Translaminar</th>
<th>Contact</th>
<th>Nutrient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microdochium Pack 1</td>
<td>1 Ha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>Seaweed</td>
</tr>
<tr>
<td>Microdochium Pack 3</td>
<td>1 Ha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>Fe</td>
</tr>
<tr>
<td>Microdochium Pack 8</td>
<td>1 Ha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Fe</td>
</tr>
<tr>
<td>Microdochium Pack 9</td>
<td>2 Ha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Fe</td>
</tr>
<tr>
<td>Microdochium Pack 11</td>
<td>1 Ha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>Fe</td>
</tr>
<tr>
<td>Microdochium Pack 12</td>
<td>1 Ha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microdochium Pack 14</td>
<td>2 Ha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Take All & Fairy Ring Package 1

<table>
<thead>
<tr>
<th>Product</th>
<th>Coverage</th>
<th>Curative</th>
<th>Preventative</th>
<th>Systemic</th>
<th>Translaminar</th>
<th>Contact</th>
<th>Nutrient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headway</td>
<td>1 x 3L</td>
<td>3L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aqua-zorb 45</td>
<td>2 x 10L</td>
<td>20L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manifol Excel</td>
<td>1 x 5L</td>
<td>1L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Take All & Fairy Ring (Type2)

<table>
<thead>
<tr>
<th>Product</th>
<th>Coverage</th>
<th>Curative</th>
<th>Preventative</th>
<th>Systemic</th>
<th>Translaminar</th>
<th>Contact</th>
<th>Nutrient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take All &amp; Fairy Ring (Type2)</td>
<td>1 Ha</td>
<td>200-400L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Usage Period

Headway is a fast, effective double action systemic fungicide perfectly suited for use throughout the growing season - with improved performance and greater security.

The Headway combination of two outstanding active ingredients gives dual modes of action to minimise disease potential.

For use on ALL managed amenity turf such as cricket, rugby, football and polo pitches, bowls greens, golf courses, tennis courts and hockey fields.

Headway has been extensively tried and tested on high quality turf at the state-of-the art Syngenta Research facility, as well as by independent researchers and turf managers at prestigious golf and sports turf facilities across the UK.

**Key Points**

- Double action fungicide
- Fast uptake and rapid systemic movement
- Long-lasting protection
- Key foliar and soil-borne turf disease control

**Active Ingredients**

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Rate (g/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>azoxystrobin</td>
<td>62.5</td>
</tr>
<tr>
<td>propiconazole</td>
<td>104</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate (L/Ha)</th>
<th>Water Rate (L/Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 L</td>
<td>3</td>
<td>250-1000</td>
</tr>
</tbody>
</table>

**Disease Controlled**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Control Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracnose</td>
<td>✓</td>
</tr>
<tr>
<td>Brown Patch</td>
<td>✓</td>
</tr>
<tr>
<td>Dollar Spot</td>
<td>✓</td>
</tr>
<tr>
<td>Fairy Ring</td>
<td>✓</td>
</tr>
<tr>
<td>Leaf Spot</td>
<td>✓</td>
</tr>
<tr>
<td>Microdochium Patch</td>
<td>✓</td>
</tr>
<tr>
<td>Red Thread</td>
<td>✓</td>
</tr>
<tr>
<td>Rust</td>
<td>✓</td>
</tr>
<tr>
<td>Take All Patch</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Max Aps/Year**

<table>
<thead>
<tr>
<th>Usage Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

For more information, visit [www.sherriffamenity.com](http://www.sherriffamenity.com)
Herbicides & Hard Surface Cleaners

Selective Herbicides
- T2 Green Pro 45
- Duplosan KV 45
- Depitox 46
- Selective Herbicide Mix 46

Total & Residual Herbicides
- Katana 47
- Rosate TF 47
- Tailout 48
- Relva Granules 48

Biocides & Hard Surface Cleaners
- Safor 49
- MMC Pro 49

Dualitas

A contact and systemic turf fungicide which both cures and prevents disease in managed amenity turf at any time of the year.

Dualitas utilises two active ingredients with two different Modes of Action that simultaneously act as a barrier to spore germination, flowing through the leaves to provide translaminar protection, and penetrate the leaf blade to be transported systemically via the xylem vessels, to provide greater ongoing protection throughout the plant. Dualitas can be applied to all turf areas including golf courses, commercial and residential lawns, sportsfields, parks, bowls greens, cricket pitches.

Key Points
- Contact and systemic turf fungicide
- Use all year round
- Long-lasting protection
- Key foliar and soil-borne turf disease control

Dualitas has been proven to be rain-fast within 1 hour of application. Once the spray application has dried on the leaf surface, rainfall will not interfere with its ability to control disease, due to the combined action of the contact action and the systemic properties of Dualitas.

Active Ingredients
- tebuconazole 200 g/L
- trifloxystrobin 100 g/L

Disease Controlled
- Anthracnose ✓
- Brown Patch
- Dollar Spot ✓
- Fairy Ring
- Leaf Spot
- Microdochium Patch ✓
- Red Thread ✓
- Rust ✓
- Take All Patch

Pack size Rate (L/ha) Water Rate (L/ha)
250 ml 1 400-500

Max Ap/Year Usage Period
4 J F M A M J J A S O N D
T2 Green Pro

T2 Green Pro is a selective herbicide for the control of annual and perennial weeds in managed amenity turf.

T2 Green Pro is formulated from 3 active ingredients mecoprop-P, MCPA and Dicamba.

Each component has different strengths on different weed species. Mecoprop-P gives excellent control of Clover, whilst MCPA controls weeds with deeper roots such as Dandelion and Cat’s-ear.

Key Points

• Selective herbicide with tank-mix options
• Apply April - September when grass is actively growing
• Broad spectrum of control

Weeds Controlled

<table>
<thead>
<tr>
<th>Weeds Controlled</th>
<th>Ms</th>
<th>Ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Bindweed</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Charlock</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Common Chickweed</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Common Field Speedwell</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Common Fumitory</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Common Hemp-nettle</td>
<td>✔</td>
<td>MS</td>
</tr>
<tr>
<td>Common Poppy</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Active Ingredients

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Rate (L/Ha)</th>
<th>Water Rate (L/Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mecoprop-P</td>
<td>43.3 g/L</td>
<td></td>
</tr>
<tr>
<td>MCPA</td>
<td>245 g/L</td>
<td></td>
</tr>
<tr>
<td>Dicamba</td>
<td>19.5 g/L</td>
<td></td>
</tr>
</tbody>
</table>

Max Apps/Year Usage Period

1  J  F  M  A  M  J  J  A  S  O  N  D

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Duplosan KV

Duplosan is a selective herbicide for the control of a wide range of broad-leaved weeds in amenity grassland and managed amenity turf.

Duplosan KV is a soluble concentrate containing 600 g/L (48% w/w) optically active isomer mecoprop-P, formulated as the potassium salt.

Weeds Controlled

<table>
<thead>
<tr>
<th>Weeds Controlled</th>
<th>Ms</th>
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</thead>
<tbody>
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<td>✔</td>
</tr>
<tr>
<td>Common Chickweed</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Common Field Speedwell</td>
<td>MS</td>
<td>✔</td>
</tr>
<tr>
<td>Common Fumitory</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Common Mouse-ear</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Active Ingredients

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Rate (L/Ha)</th>
<th>Water Rate (L/Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mecoprop-P</td>
<td>600 g/L</td>
<td></td>
</tr>
</tbody>
</table>

Max Apps/Year Usage Period

2  J  F  M  A  M  J  J  A  S  O  N  D

Key Points

• Selective herbicide with tank-mix options
• Controls key annual and perennial broad-leaved weeds
• Tank-mix options for ragwort

*MS = Moderately Susceptible
Depitox is a selective weedkiller, effective on a wide range of common broad-leaved and rosette-forming turf weeds.

Depitox can be tank-mixed with T2 Green to control a wider range of weeds. The efficacy against deeper rooting weeds is greatly enhanced.

Key Points

- Selective herbicide with tank-mix options
- Controls key annual and perennial broad-leaved weeds
- Controls many common turf weeds

**Depitox Selective Herbicide Mix**

We can widen the range of weed control further to include the majority of species commonly found in turf by using a tank-mix of T2 Green Pro with Depitox and Duplosan.

A selective herbicide product will control a range of different weeds, depending on the quantity and type of active ingredients it contains. Each active component contained in the product will control certain weeds but not all. Each has its strengths and weaknesses because differences in the chemical structure give rise to variances in the spectrum of weeds controlled.

**T2 Green Pro**
- 4 L/Ha

**Duplosan KV**
- 1.2 L/Ha

**Depitox**
- 1.5 L/Ha

**Water**
- 300-500 L/Ha

**Active Ingredients**

- 2,4-D 500 g/L

**Pack size**

- 5 L

**Rate (L/Ha)**

- 2.8 - 3.3

**Water Rate (L/Ha)**

- 400

**Weeds Controlled**

- Autumn Hawkbit
- Curled Dock
- Daisy
- Dandelion
- Cat’s-tail
- Lesser Celandine
- Marsh Pennywort
- Mouse-ear Hawkweed
- Pearlwort
- Creeping Buttercup

- Plantain spp
- Rough Hawkbit
- Sea-milkwort
- Sea Stork’s-bill
- Thrift
- Yarrow

**Tank-mix Rates**

- T2 Green Pro 4 L/Ha
- Duplosan KV 1.2 L/Ha
- Depitox 1.5 L/Ha
- Water 300-500 L/Ha

**Max Apps/Year**

- T2 Green Pro 1
- Duplosan KV 4
- Depitox 1
- Water 4

**Usage Period**

- T2 Green Pro J A S
- Duplosan KV J A M
- Depitox J A S
- Water J A S
Katana

Katana® is a powerful, non-selective residual broad spectrum herbicide.

Katana can be used for the control of annual and perennial weeds on natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, and around amenity vegetation, which can drastically reduce hours spent strimming.

Key Benefits
- Up to 5 Months control
- Contact & residual
- Pre-emergent
- Early post-emergent control
- Tank-mixable with glyphosate

Rosate TF

Rosate TF is an aqueous solution recommended for the control of annual and perennial grasses and broad-leaved weeds.

Rosate TF is approved for use in non-crop areas such as roadsides, paths and hard surfaces and along fences and walls.

Key Benefits
- Areas of use include Industrial, Horticultural, Amenity & Forestry
- Total Herbicide
- Cost-effective weed control
- Tank-mixable with Katana

Rosate TF controls most species of emerged annual and perennial grass and broad-leaved weeds. It is absorbed by the weed foliage and translocated to the growing points in the roots and to the underground rhizomes/stolons of perennial weeds.

It is ideal for clearing weed-covered ground prior to planting or sowing, and for total weed control on industrial sites. It may also be used as a directed spray in ornamental planting and in forestry for site preparation and post-planting treatments.

Active Ingredients
- Flazasulfuron 25% w/w

Pack size | Rate (g/ha) | Water Rate (L/ha)
--- | --- | ---
50g | 50 | 200-600

Max Apis/Year | Usage Period
--- | ---
1 | J F M A M J J A S O N D

Active Ingredients
- Glyphosate 360 g/L

Pack size | Rate (L/ha) | Water Rate (L/ha)
--- | --- | ---
5 L | 3-10 (see label for area specific rates) | 80-250

Usage Period
--- | ---
J F M A M J J A S O N D

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Tailout

Tailout is a non-selective herbicide, acting primarily by foliar contact but with some translaminar movement, which can occur within the aerial part of the plants. Tailout kills all green tissue but does not harm mature bark. Deep-rooted perennial weeds will regrow.

Key Benefits

- Non-selective
- Controls grasses and broad-leaved weeds
- Fast acting

A foliar contact herbicide for use as a band application to:
- Fence lines - spray applications must be made within 50 cm of fence line.
- Managed amenity turf for line-marking preparation.

As a band or spot application to:
- Natural surfaces not intended to bear vegetation.
- Permeable surfaces overlaying soils.
- Hard surfaces.

Active Ingredients

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Pack size Rate (L/Ha) Water Rate (L/Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>glufosinate -ammonium</td>
<td>1 L 3-5 200-400</td>
</tr>
</tbody>
</table>

Relva Granules

Relva Granules is a pre- or post-emergence residual herbicide for the control of weed grasses in forestry and amenity plantings. Relva Granules can be used on all ornamental trees, shrubs and roses. Relva Granules are especially useful for the control of weed growth around trees and shrubs, along fence lines, hedge lines and walls, and where mowing can be difficult.

Key Benefits

- Pre or post-emergence residual herbicide
- Granular herbicide
- Long lasting results
- For use around ornamental trees and shrubs

When used in Amenity vegetation the product is recommended for use on ornamental trees and shrubs which have been in their final position for at least one season and have become firmly established. When planted in the spring they may be treated in the following autumn (see Timing of application on label).

The product may be used amongst the following species: Berberis darwinii, Buddleia davidii, Chamaecyparis spp (False cypress), Cotoneaster spp, Crataegus spp (Hawthorns), Fagus sylvatica (Beech), Forsythia x intermedia, Ilex aquifolium (Holly), Larix decidua (Larch), Philadelphus spp, Picea spp (Spruces), Pinus spp, Prunus spp, Prunus glauca, Quercus spp (Oak), Rosa spp (Roses including Rose rootstocks), Spiraea x bumalda ‘Froebelli’, Syringa vulgaris (Lilac), Taxus baccata (Yew), Thuja orientalis, ‘Rosedalis’

Active Ingredients

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Pack size Max Rate (Kg/Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>propyzamide</td>
<td>5 Kg 37.5</td>
</tr>
</tbody>
</table>

Usage Period

<table>
<thead>
<tr>
<th>Max Aps/Year</th>
<th>Usage Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 J F M A M J J A S O N D</td>
<td></td>
</tr>
</tbody>
</table>

* Not to be used outside this window
Safor is a blend of organic acids and surfactants that can be used to remove algae, moss and lichens on external hard surfaces, providing a safe and easy solution to hard surface management.

Algae, moss and lichens colonise areas such as buildings, roofs, paths and walkways. They are unsightly, damaging to surfaces and can create slippery areas.

**Key Points**
- Cleans and removes algae, slimes and lichen
- Moss and liverworts deterred
- Reduces the risk of slippery surfaces

Safor works by killing the chloroplasts with biocides, which prevent photosynthesis and the living plant tissue dies. It has a very rapid effect – results usually occur within 48 hours. It is strong and long lasting and its efficient cleaning action visually brightens surfaces.

Where there is thick build up of vegetative matter ensure that the areas are well soaked to achieve complete penetration.

Independent trials have been carried out using Safor on a variety of different surfaces. Safor provided long term control of chlorophytic algae with no impact on any of the surfaces tested. Control was also shown against mosses and liverworts, lichen and fungi.

**Pack size**
- 5 L

**Application Rate**
- Normal 5 L/1000m²
- Heavy 5 L/500m²

**Water Rate**
- 50 L/1000m²
- 30 L/500m²

**Active Ingredients**
- Urea hydrochloride
- Benzalkonium chloride

**Surface Longevity**
- Brick 2 Months
- Stone 2 Months
- Rubber 2 Months
- Nylon 2 Months
- Tarmac 2 Months
- Marble 1 Month
- Concrete 2 Months
- Slate 1 Month

**Usage Period**
- J F M A M J J A S O N D

MMC-PRO is a high performance anti-bacterial disinfectant that is an efficient way to treat external hard surfaces.

In comparison, pressure-washing is time-consuming, labour-intensive and abrasive – and it often accelerates the growth of mould and algae. The product contains no bleach or acids and is readily bio-degradable to EC/OECD standards.

**Key Benefits**
- No scrubbing
- Apply in minutes
- Biodegrades
- Long lasting
- For all exterior hard surfaces

MMC Pro targets black/green mould/algae on all exterior hard surfaces.

MMC-PRO will kill mould and other growths, typically within 2-4 days, whilst the secondary detergent action will help to clean the treated exposed surfaces in the following weeks and months. Any dead growth that has not been removed by the elements can be lightly brushed away 2-4 months after treatment, or sooner if required.

MMC-PRO should be applied at low pressure, and allowed to soak into the treated surface. There is no need for any aggressive or damaging application methods such as high-pressure water-blasting or steam cleaning.

Apply when surfaces are dry, and when no rain is expected in the following 3-4 hours. Simply dilute min 1:4 / max 1:9 with water in a low pressure sprayer and ensure that you saturate the surface. No scrubbing, no mess.

**Pack size**
- 5 L

**Application Rate**
- Normal 1:9 Water
- Heavy 1:4 Water

**Contains**
- Broad-spectrum anti-viral and antibacterial disinfectant, fungicide/algaecide and cationic detergent

**Usage Period**
- J F M A M J J A S O N D
Herbicides - Synthetic Auxin

Synthetic Auxin

These were the very first selective herbicides and work by being similar in structure and activity to the natural plant hormone auxin. They target the meristems and mimic the effects of natural auxin to cause abnormal growth. Phenoxy herbicides were invented over sixty years ago.

Auxins function to regulate growth and are only found in plants. Susceptible plants are unable to distinguish between the herbicide and the natural auxin. This causes uncontrolled growth (epinasty) seen as thickening and twisting of stems and leaves that eventually becomes fatal to the target plant. Grasses are largely unaffected by synthetic auxin herbicides, therefore this group of chemicals have been used extensively for selective weed control in turf and cereal crops.

This group of herbicides include

- 2,4-D
- MCPA (Deep tap roots)
- Mecoprop-P
- Dicamba (a benzoic acid – the rest are phenoxy carboxylic acids)

As 2,3 & 4 way mixes they all complement each other to control a wide range of weeds.

For example, mecoprop-P gives excellent control of white clover while MCPA controls weeds with deeper tap roots such as dandelion. Dicamba is good for controlling yarrow, self-heal, common mouse-ear, clovers and trefoil.

Clopyralid and Fluroxypyr

These are more sophisticated and potent, having a similar mode of action to the synthetic auxin group. Clopyralid is absorbed by the leaves and roots, moving up and down to shoot tips and roots and accumulates in meristematic tissue. Fluroxypyr is predominately foliar uptake but translocated rapidly to other parts of the plant.

New modes of action

Florasulam, a triazolopyrimidine works by inhibiting the synthesis of several essential amino acids. It is twinned with fluroxypyr in ‘Cabadex’ and as a three-way mix with clopyralid and fluroxypyr in ‘Praxys’ - giving a very broad spectrum of weeds control.

Rescue combines pinoxadem and cloquintocet-mexyl for the selective removal of ryegrass. It works by targeting specific enzymes responsible for cell division.
Velocity

Velocity is an unique adjuvant designed specifically to enhance the performance of disease control products on turf.

It speeds uptake of systemic fungicides into the leaf, whilst improving spread and leaf retention. The contact action makes fungicide applications more reliable and cost-effective.

Key Points

- More reliable results from fungicide sprays
- Improved spreading, coverage and rainfastness
- Speeds uptake into the plant

Without Velocity

With Velocity

Velocity combines the spreading and coverage capacity of organosilicones with the uptake improvement from vegetable oil. It also includes elements to reduce reflection from the leaf surface. Velocity should not be used products containing azoxystrobin, use Roller instead.

Velocity can enhance the performance of many turf fungicides and has established itself as an integral part of many of our industry-leading fungicide packages. This provides many different options for year-round disease control. Sherriff Amenity can provide a suitable fungicide package for preventative or curative control, with further choice of systemic, translaminar or contact properties.

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 L</td>
<td>250ml/100L of Spray (0.25%)</td>
</tr>
</tbody>
</table>

Roller

A specialist adjuvant for use with products containing azoxystrobin (Heritage/Headway/Heritage Maxx).

A liquid formulation second generation super spreader, Roller reduces spray droplet surface tension to ensure the plant is evenly covered with fungicide without the risk of loss due to run-off associated with straight organosilicones.

Key Points

- Improves leadfcoverage and spread
- Faster uptake for optimum performance
- Reduces spray droplet surface tension

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>1 L</td>
<td>100ml/Ha</td>
</tr>
</tbody>
</table>

Eye SPI

A spray pattern indicator formulated as a temporary blue or green dye that allows the operator to see exactly where they have sprayed.

Eye SPI reduces the risk of overlapping and missed areas can be easily identified. Eye SPI is formulated as a non-staining liquid.

Key Benefits

- Shows where you have sprayed
- Reduces risk of overlapping
- Non-staining
- Blocked nozzles are easy to identify
- Available in Green & Blue

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1L &amp; 5L</td>
<td>1 - 2.5 ml/L spray</td>
</tr>
</tbody>
</table>
Companion Gold

Specially designed for use with glyphosate, Companion Gold has quickly become the adjuvant of choice for use with glyphosate-based herbicides. The 6 way mode of action offers foam reduction. In hard water areas the water conditioner and pH buffer maintain efficacy, whilst the exceptional drift control ensures the glyphosate remains where it is targeted.

Key Points

- Improves effectiveness of products containing glyphosate
- Significantly faster kill
- Can use higher rates in hard water areas

Companion Gold also improves retention of glyphosate on the target surface and increases rainfastness.

<table>
<thead>
<tr>
<th>Pack size</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 L</td>
<td>250-1000ml/100L Spray</td>
</tr>
</tbody>
</table>

Red Flag

A spray tank and equipment cleaner designed for general purpose cleaning of spray equipment.

Red Flag contains an effervescing agent, which agitates the cleaner to ensure it reaches all the sprayer parts.

Key Benefits

- Tank and equipment cleaner
- Contains effervescing agent
- Red tracer dye
- Cost-effective spray tank cleaner

Pack size | Rate
---|---
1 Kg | 1Kg/800L of wash-out solution

Sprayphix

Sprayphix is an unique adjuvant designed to adjust the quality of water in the spray tank and maximise the efficiency and effectiveness of chemical sprays.

It improves pesticide performance by buffering the pH to a mildly acidic level to minimise alkaline hydrolysis and improve uptake by the plant.

Key Benefits

- Creates the ideal pH
- Prevents alkaline hydrolysis of pesticides and trace elements
- Contains colour indicator
- Stops pesticide/TE lock up from calcium, magnesium & iron ions in the water

Sprayphix will also bind with dissolved salts in hard water that can adhere to pesticide molecules and slow down or even prevent uptake of the chemical in the plant.

Pack size | Rate
---|---
1 L | Dependent upon water pH and volume of spray. Water turns pink when correct pH is reached.

Usage Period

| J | F | M | A | M | J | J | A | S | O | N | D |

www.sherriffamenity.com
Green Lawnger Pro HC

Green Lawnger Pro HC (formerly Vision Pro) is a revolutionary visual spraying aid and UV resistant turf colourant that contains natural pigments (not dyes).

Standard spray pattern indicators contain dyes, however the revolutionary pigment technology in Green Lawnger Pro HC increases soil and surface temperatures and creates a more desirable microclimate for growth.

Key Points
• Increases turf quality & playability during periods of slow growth
• Instant improvement in turf appearance
• Creates a natural looking appearance to turf

Applying Green Lawnger Pro HC in the autumn, winter and spring increases radiation absorbance and decreases reflectance resulting in increased photosynthesis.

The UV resistant formulation allows the product to last for up to 6 - 8 weeks in periods of slow growth.

Mode of Action
Light coming into contact with objects (including grass) can either be reflected, transmitted or absorbed. Green Lawnger Pro HC reduces reflected light, increases radiation absorbance, leading to increased photosynthesis.

Areas of use
Green Lawnger Pro HC can be used on fine turf areas such as golf greens, tees and bowls greens. It can also be used on winter sports pitches and racecourses. (For colour effect use Green Lawnger).

Usage Period
<table>
<thead>
<tr>
<th>Usage Period</th>
<th>J</th>
<th>F</th>
<th>M</th>
<th>A</th>
<th>M</th>
<th>J</th>
<th>J</th>
<th>A</th>
<th>S</th>
<th>O</th>
<th>N</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Ltr</td>
<td>1.2</td>
<td>300-600</td>
<td>4.16 Ha</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Green Lawnger TR

Green Lawnger TR is a natural dark green turf colourant for season growth transition periods.

Green Lawnger TR contains specially formulated pigments that increase the absorption of solar radiation, which elevates the surface temperature. This effect can help turf grass managers extend the playing season during the autumn and winter. It will also accelerate growth in the spring by thawing snow and ice more rapidly.

Key Points
• Promotes early spring growth/green-up of cool season grasses
• Helps extend turf growth in the autumn
• Creates a uniform dark green sward during the winter months

Green Lawnger

Green Lawnger turf paint is a fast, economical way to instantly restore the natural green colour to dormant or discoloured turf.

It is easily applied with many types of sprayers and adds a healthy, natural look to off coloured turf grasses. This permanent pigment will not wash or wear off turf after it has been applied in dry conditions. Apply it in the autumn and dormant turf will stay green for up to 18 weeks.

Key Benefits
• Improves aesthetics of dormant/ stressed turf
• Lasts 10-14 weeks
• Permanent green pigment
• Produces uniform appearance to turf

www.sherriffamenity.com
Black colourant for lakes, ponds and fisheries.

Black Out is a highly concentrated black lake and pond colourant that transforms pale, off coloured water to a decorative, mirror-like black colour without harming or discolouring fish, waterfowl and animals.

Key Benefits

- Creates a natural looking reflective water surface
- Can be used in irrigation lakes
- Quick effect
- Creates unfavourable conditions for algae

Pack size
Application Rate
1 L
Apply 2.5 - 5 litres per hectare of surface water at monthly intervals

Usage Period

J F M A M J J A S O N D

www.sherrifffamenity.com
Talunex is a pellet formulation containing aluminium phosphide for the control of rabbits, moles and rats outdoors. Talunex is applied by using the Topex applicator.

Talunex may be used only in woodland, grassland, arable and horticultural land (in the open air), on sports fields and lawns. This product can only be purchased and used by persons trained and certified in the storage, handling and use of aluminium phosphide for rodent control.

Nemaflo is a specifically formulated carrier that aids the movement of insect-parasitic (entomopathogenic) nematodes into the soil profile towards the target pest.

Nemaflo is designed to partner Sportnem H and Sportnem T and any other soil applied beneficial nematode product.

The most important reason to use a carrier is that the nematodes, being very small, can get ‘stranded’ within a water droplet. This will reduce their ability to spread out and establish. Nemaflo will help the movement of nematodes towards the target pest. Nemaflo is tank-mixable with a wide range of beneficial nematode products.

The Garden Chafer Trap is a simple but effective product that can allow more accurate treatment timings against the larval stage of this destructive pest.

The trap will catch adult beetles and give an early warning of chafer grub activity. The trap also helps to reduce the number of egg laying adults in the surrounding area.

Simply place the powerful pheromone into the trap, the pheromone attracts male Garden Chafer beetles. The beetles fly into the vanes and drop down into the funnel trap underneath. The trap should be set in May and should be hung 50-100 cm above ground level. One trap will cover 2000 m² or half an acre.

Rezist is an animal repellent product, for use by professional operators, that prevents infestation by foxes, rabbits, geese and moles. In addition it has been successfully used to prevent fouling by cats and dogs.

Animals that eat growing plants, such as rabbits, deer and various bird species such as geese dislike the taste and smell of the chemical on the plants. It is the smell alone the deters dogs and foxes but with animals that groom themselves, such as cats and dogs, taste is the main sense affected. Animals that burrow, such as moles, are also affected if the soil they are digging through is treated.

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Without insecticides to control the Crane fly larva and Chafer Grub, we have to rely on the use of entomopathogenic nematodes to reduce the number of leatherjacket and chafer grubs in the soil.

Applied as a drench with the addition of Nemaflo, the nematodes move through the moist soil to find Crane fly or Chafer Grub larvae; depending on which pest you are targeting.

Good timing and application is crucial. Once a nematode has found and penetrated a pest larva through a body opening, it begins its’ destructive work. In order to convert the larva into food, the nematode releases symbiotic bacteria. These bacteria spread throughout the larvae, multiplying rapidly while feeding on the host tissue and converting it into a form easily taken up by the nematodes. The infected larvae die within a few days, but the nematodes continue to multiply and develop in the host. As soon as the nematodes are in the infectious third stage, they leave the host and start searching for new targets. The nematode population will slowly decrease once there are no new hosts present.

**Sportnem-T** contains the insect pathogenic nematode *Steinernema carpocapsae*. These are effective against a number of turf pests, especially the larvae of crane flies (*Tipula spp.*) and others. Once the nematodes have been released into the soil, they seek out the larvae and penetrate them via the epidermis or natural orifices such as the mouth, the anus, or breathing holes. The nematodes excrete specific bacteria from their gut that breaks down the insides of the grubs. Adult Crane flies live for only a few days. Some species have one generation per year, while others produce several. As soil temperatures drop, larvae go deeper into the soil and hibernate.

**Sportnem-H** contains the insect pathogenic nematode *Heterorhabditis bacteriophora*, targeting chafer grubs in turf. Applied as a drench the nematodes move through the moist soil to find a Chafer Grub releasing symbiotic bacteria which feed on the host. In addition to Chafer Grubs Sportnem H also controls Bibionid Fly. The adult Chafer Beetle is often seen in May/June, with the very small grubs hatching from late June onwards. These grubs immediately start feeding and are fully grown by autumn. As soil temperatures drop, grubs stop feeding and go deeper into the soil.

<table>
<thead>
<tr>
<th>Product</th>
<th>Pack size</th>
<th>Water Rate (L/Ha)</th>
<th>Controls</th>
<th>Usage Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sportnem H</td>
<td>100, 500 &amp; 5000m²</td>
<td>1000</td>
<td>Chafer Grubs</td>
<td>J F M A M J J A S O N D</td>
</tr>
<tr>
<td>Sportnem T</td>
<td>100, 500 &amp; 5000m²</td>
<td>1000</td>
<td>Leather Jackets</td>
<td>J F M A M J J A S O N D</td>
</tr>
</tbody>
</table>

www.sherriffamenity.com
The Techni-Turf grass seed range is supported by the world’s largest grass seed breeding programme with:

- An annual research / breeding budget of £8.5 Million
- Worldwide breeding stations
- Seed production in UK, Denmark, USA, New Zealand, Holland and France

The aim of this range is to provide the Greenkeeper, Groundsperson and Landscaper with improved seed products for superior natural surfaces. The strength and success of the research and development program is measured by the frequency in which independent trialling bodies feature the range’s cultivars.

From modern production facilities Techni-Turf offers an exceptional package of:

- Class leading cultivars and mixture formulations
- Stocked mixtures available on national next day carriers

DLF’s partnership with Becker Underwood, global specialists in biological solutions, has resulted in Gromax, an unique and effective seed treatment which stimulates the soil’s microflora, resulting in improved root growth and turf establishment, stress tolerance, and enhanced water and nutrient uptake in grasses.

**TT Grass Seed GrowMax Seed Treatment**

Bio-stimulants help the seedlings utilize nutrient reserves by encouraging soil microorganisms, which improves 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 micronutrients, fertilisers and pesticides. GrowMax treatment is applied to all of the seed mixtures in the TT range.

**Humic Acids**
- Rich in auxin-type substances that enhance antioxidant synthesis – important in increasing plant metabolism under stress conditions
- Serve as an 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

**Sucrose**
- Serves as a high energy food source for plant and soil micro-organisms.

**B Complex & 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

**Mixtures for Greens**

**TT1 - Golf & Bowling Greens**
- Provides fine, dense Sward of good colour
- Tolerates close mowing
- Excellent year round colour, sward density and disease resistance

**TT18 - Techni-Greens Velvet**
- Exceptional sward density, leaf fineness and year round colour
- Includes only the finest and densest cultivars for unrivalled levels of sward performant

**TT101 - Techni-Greens Plus**
- Exceptional sward density, rapid establishment
- Ideal for heavy wear holes, also excellent tee option

**TT19 - Greens Renovation**
- An exceptional blend of Agrostis tenuis
- Provides a remarkably fine and dense turf that is persistent under close mowing

**TT111 - Greens All Fescue**
- Drought tolerant with excellent year round colour
- Fine leaved, ideal for links courses
Mixtures for Tees

**TT3 - Tees & Divot**
- Wear tolerant, without ryegrass
- Drought tolerant
- Creeping species aid recovery from divoting

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calliope</td>
<td>25%</td>
<td>Chewings Fescue</td>
</tr>
<tr>
<td>Pinafore</td>
<td>25%</td>
<td>Slender Creeping Red Fescue</td>
</tr>
<tr>
<td>Sergei</td>
<td>40%</td>
<td>Strong Creeping Red Fescue</td>
</tr>
<tr>
<td>Miracle</td>
<td>10%</td>
<td>Smooth Staked Meadow Grass</td>
</tr>
</tbody>
</table>

**TT10 Techni-Tees**
- Top rated sward density, very fine sward
- Creeping species aid recovery from divoting

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zanotto</td>
<td>10%</td>
<td>Smooth Staked Meadow Grass</td>
</tr>
<tr>
<td>Cezanne</td>
<td>20%</td>
<td>Slender Creeping Red Fescue</td>
</tr>
<tr>
<td>Rossinante</td>
<td>40%</td>
<td>Strong Creeping Red Fescue</td>
</tr>
<tr>
<td>Manor</td>
<td>5%</td>
<td>Browntop Bentgrass</td>
</tr>
</tbody>
</table>

**TT15 Techni-Tees with Ryegrass**
- Extremely wear tolerant, quick to establish

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monroe</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Zanotto</td>
<td>10%</td>
<td>Smooth Staked Meadow Grass</td>
</tr>
<tr>
<td>Cezanne</td>
<td>10%</td>
<td>Slender Creeping Red Fescue</td>
</tr>
<tr>
<td>Rossinante</td>
<td>15%</td>
<td>Strong Creeping Red Fescue</td>
</tr>
<tr>
<td>Manor</td>
<td>5%</td>
<td>Browntop Bentgrass</td>
</tr>
</tbody>
</table>

**TT28 - Shaded Tees**
- Exceptional sward density, quick establishment
- Adaptable to dry and damp shade conditions

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monroe</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Calliope</td>
<td>15%</td>
<td>Chewings Fescue</td>
</tr>
<tr>
<td>Cezanne</td>
<td>15%</td>
<td>Slender Creeping Red Fescue</td>
</tr>
<tr>
<td>Pinafore</td>
<td>20%</td>
<td>Sheeps Fescue</td>
</tr>
<tr>
<td>Salixen 1</td>
<td>20%</td>
<td>Rough Staked Meadow Grass</td>
</tr>
</tbody>
</table>

**TT23 - Tees & Wicket Overseed**
- Hard wearing with exceptional sward density
- Quick and easy to establish

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Monroe</td>
<td>36%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Chardin</td>
<td>36%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Dickens 1</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
</tbody>
</table>

Mixtures for Winter Sports Pitches

**TT4 - Techni-Renovation**
- Top rated cultivars, 100% ryegrass blend
- Hard wearing, produces a dense sward with excellent winter colour and recovery capabilities

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chardin</td>
<td>15%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Columbine</td>
<td>40%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Monroe</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Eurosport</td>
<td>15%</td>
<td>Perennial Ryegrass</td>
</tr>
</tbody>
</table>

**TT5 - Techni-Stadium**
- Rapid establishment
- Extremely wear tolerant

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkoz 1</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Bizel 1</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Cleopatra</td>
<td>40%</td>
<td>Perennial Ryegrass</td>
</tr>
</tbody>
</table>

**TT6 - Sportsground**
- Mixture for both renovation and new sowings
- Good visual appearance

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum</td>
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<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Bizel 1</td>
<td>25%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Sergio</td>
<td>25%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Double</td>
<td>25%</td>
<td>Tetraptolid Perennial Ryegrass</td>
</tr>
</tbody>
</table>

**TT7 - Sports Microclover**
- Combination of MicroClover and ryegrass
- Increased wear tolerance and disease resistance
- Improved colour, ideal for low maintenance

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Essex</td>
<td>35%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Double</td>
<td>30%</td>
<td>Tetraptolid Perennial Ryegrass</td>
</tr>
<tr>
<td>MicroClover</td>
<td>5%</td>
<td>Clover</td>
</tr>
</tbody>
</table>

**TT Re-cover**
- Designed for winter overseeding & rapid repairs
- Double tetraptolid perennial ryegrass for rapid establishment
- Himalaya for high wear tolerance & cold tolerance

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double</td>
<td>30%</td>
<td>Tetraptolid Perennial Ryegrass</td>
</tr>
<tr>
<td>Himalaya</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
</tbody>
</table>

Mixtures for Fairways & Outfield

**TT25 - Ryegrass Fairway/Outfield**
- Quick to establish, hard wearing sward
- Exceptionally fine and dense
- Ideal for over-seeding

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dickens 1</td>
<td>15%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Dylan</td>
<td>15%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Sergei</td>
<td>35%</td>
<td>Strong Creeping Red Fescue</td>
</tr>
<tr>
<td>Calliope</td>
<td>15%</td>
<td>Chewings Fescue</td>
</tr>
<tr>
<td>Pinafore</td>
<td>20%</td>
<td>Slender Creeping Red Fescue</td>
</tr>
</tbody>
</table>

Mixtures for Cricket

**TT23 Wicket & Tess Overseed**
- Hard wearing with exceptional sward density
- Quick and easy to establish, reduce playing area downtime

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monroe</td>
<td>25%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Chardin</td>
<td>35%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Dickens 1</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
</tbody>
</table>

Mixtures for Equestrian Use

**TT50 - Gallops & Racecourse**
- Designed to provide exceptional sward density for cushioning
- Fast establishment, hard wearing

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ponderosa</td>
<td>20%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Berkoz 1</td>
<td>20%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Bizel 1</td>
<td>20%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Double</td>
<td>40%</td>
<td>Tetraptolid Perennial Ryegrass</td>
</tr>
</tbody>
</table>

**TT29 - Shaded Tees**
- Exceptional sward density, quick establishment
- Adaptable to dry and damp shade conditions

<table>
<thead>
<tr>
<th>Mix</th>
<th>Percentage</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monroe</td>
<td>30%</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>Calliope</td>
<td>15%</td>
<td>Chewings Fescue</td>
</tr>
<tr>
<td>Cezanne</td>
<td>15%</td>
<td>Slender Creeping Red Fescue</td>
</tr>
<tr>
<td>Pinafore</td>
<td>20%</td>
<td>Sheeps Fescue</td>
</tr>
<tr>
<td>Quatro</td>
<td>20%</td>
<td>Sheeps Fescue</td>
</tr>
</tbody>
</table>

Mixtures for Grass Seed

*25% Calliope   Chewings Fescue
25% Pinafore   Slender Creeping Red Fescue
40% Sergei     Strong Creeping Red Fescue
10% Miracle    Smooth Staked Meadow Grass
5% Manor       Browntop Bentgrass

*25% Calliope   Chewings Fescue
20% Cezanne    Slender Creeping Red Fescue
40% Rossinante Strong Creeping Red Fescue
10% Manor      Browntop Bentgrass

*30% Calliope   Chewings Fescue
20% Cezanne    Slender Creeping Red Fescue
40% Rossinante Strong Creeping Red Fescue
15% Manor      Browntop Bentgrass

*30% Calliope   Chewings Fescue
20% Cezanne    Slender Creeping Red Fescue
40% Rossinante Strong Creeping Red Fescue
15% Manor      Browntop Bentgrass

*30% Monroe     Perennial Ryegrass
20% Cezanne    Slender Creeping Red Fescue
40% Rossinante Strong Creeping Red Fescue
15% Manor      Browntop Bentgrass

*30% Monroe     Perennial Ryegrass
20% Cezanne    Slender Creeping Red Fescue
40% Rossinante Strong Creeping Red Fescue
15% Manor      Browntop Bentgrass
CC Grass Seed

The CC range offers technically advanced mixtures for all turf situations.

Careful selection of quality cultivars ensures that the mixtures offered will suit all types of growing conditions with emphasis on low growing, low maintenance and hard wearing varieties.

CC Renovation
- 100% dwarf perennial ryegrass mix
- Hard wearing, quick establishment

<table>
<thead>
<tr>
<th>Product</th>
<th>Pack Size</th>
<th>Perimeter Treated</th>
<th>Sowing Rate (g/m²)</th>
<th>Overseeding Rate (g/m²)</th>
<th>Sowing Depth (mm)</th>
<th>Mowing Height (down to)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TT1 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>35</td>
<td>25</td>
<td>2-4mm</td>
<td>5mm</td>
</tr>
<tr>
<td>TT18 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>35</td>
<td>25</td>
<td>2-4mm</td>
<td>4mm</td>
</tr>
<tr>
<td>TT101 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>4-6mm</td>
<td>5mm</td>
</tr>
<tr>
<td>TT19 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>10</td>
<td>5</td>
<td>Contact</td>
<td>4mm</td>
</tr>
<tr>
<td>TT111 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>5mm</td>
</tr>
<tr>
<td>TT3 20 Kg</td>
<td></td>
<td></td>
<td>25-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT10 20 Kg</td>
<td></td>
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<td>15-25</td>
<td>4-6mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT15 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>4-6mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT28 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>12-15mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT23 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>12-15mm</td>
<td>8mm</td>
</tr>
<tr>
<td>TT25 20 Kg</td>
<td></td>
<td></td>
<td>25-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>12mm</td>
</tr>
<tr>
<td>TT50 20 Kg</td>
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<td>25-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>12mm</td>
</tr>
<tr>
<td>TT4 20 Kg</td>
<td></td>
<td></td>
<td>35-75</td>
<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
<tr>
<td>TT5 20 Kg</td>
<td></td>
<td></td>
<td>35-75</td>
<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
<tr>
<td>TT6 20 Kg</td>
<td></td>
<td></td>
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<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
<tr>
<td>TT7 20 Kg</td>
<td></td>
<td></td>
<td>35-75</td>
<td>25-75</td>
<td>2-4mm</td>
<td>15mm</td>
</tr>
<tr>
<td>TT Re-Cover</td>
<td>20 Kg</td>
<td></td>
<td>35-75</td>
<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
</tbody>
</table>

CC Sportsfield Overseed
- Ryegrass and creeping red fescue mix
- Quick to establish, hard wearing sward
- Exceptionally fine and dense
- Ideal for over-seeding

<table>
<thead>
<tr>
<th>Product</th>
<th>Pack Size</th>
<th>Perimeter Treated</th>
<th>Sowing Rate (g/m²)</th>
<th>Overseeding Rate (g/m²)</th>
<th>Sowing Depth (mm)</th>
<th>Mowing Height (down to)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC Reno</td>
<td>20 Kg</td>
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<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
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<tr>
<td>CC Sports</td>
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</table>

Grass Seed Usage Guide

<table>
<thead>
<tr>
<th>Product</th>
<th>Pack Size</th>
<th>Perimeter Treated</th>
<th>Sowing Rate (g/m²)</th>
<th>Overseeding Rate (g/m²)</th>
<th>Sowing Depth (mm)</th>
<th>Mowing Height (down to)</th>
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<tbody>
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<td>Growmax Treated</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TT1 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>35</td>
<td>25</td>
<td>2-4mm</td>
<td>5mm</td>
</tr>
<tr>
<td>TT18 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>35</td>
<td>25</td>
<td>2-4mm</td>
<td>4mm</td>
</tr>
<tr>
<td>TT101 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>4-6mm</td>
<td>5mm</td>
</tr>
<tr>
<td>TT19 10 &amp; 20 Kg</td>
<td></td>
<td></td>
<td>10</td>
<td>5</td>
<td>Contact</td>
<td>4mm</td>
</tr>
<tr>
<td>TT111 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>5mm</td>
</tr>
<tr>
<td>TT3 20 Kg</td>
<td></td>
<td></td>
<td>25-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT10 20 Kg</td>
<td></td>
<td></td>
<td>25-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT15 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>4-6mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT28 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>12-15mm</td>
<td>10mm</td>
</tr>
<tr>
<td>TT23 20 Kg</td>
<td></td>
<td></td>
<td>35-50</td>
<td>25-50</td>
<td>12-15mm</td>
<td>8mm</td>
</tr>
<tr>
<td>TT25 20 Kg</td>
<td></td>
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<td>25-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>12mm</td>
</tr>
<tr>
<td>TT50 20 Kg</td>
<td></td>
<td></td>
<td>25-50</td>
<td>15-25</td>
<td>4-6mm</td>
<td>12mm</td>
</tr>
<tr>
<td>TT4 20 Kg</td>
<td></td>
<td></td>
<td>35-75</td>
<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
<tr>
<td>TT5 20 Kg</td>
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<td></td>
<td>35-75</td>
<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
<tr>
<td>TT6 20 Kg</td>
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<td>35-75</td>
<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
<tr>
<td>TT7 20 Kg</td>
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<td>35-75</td>
<td>25-75</td>
<td>2-4mm</td>
<td>15mm</td>
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<tr>
<td>TT Re-Cover</td>
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<td>35-75</td>
<td>25-75</td>
<td>12-15mm</td>
<td>15mm</td>
</tr>
</tbody>
</table>

For more information
Over the last few years, Colour Splash mixtures have started to be used on many different sites in the UK. The mixtures have been used in a broad range of landscape and amenity areas.

When sown strategically near municipal sites and landscape areas, Colour Splash mixtures represent a remarkably simple way of brightening up such locations and enhancing their aesthetic appeal. For bees, butterflies, and other pollinating insects, they are a source of pollen and nectar, sometimes very useful when other resources are rare.

**Colour Splash**

<table>
<thead>
<tr>
<th>Colour Splash Mix</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS1 Festival</td>
<td>A tall growing wildflower seed mixture suitable for dry land, offering good ground cover.</td>
</tr>
<tr>
<td>CS2 Aurora</td>
<td>An ideal wildflower seed mixture for soil with more organic material and nutritive mineral elements.</td>
</tr>
<tr>
<td>CS3 New Wave</td>
<td>A tall growing wildflower mixture featuring orange tones and withstanding heat and drought very well.</td>
</tr>
<tr>
<td>CS4 Honey Bee</td>
<td>A mixture composed of flowering plants for landscaping, which will attract insects.</td>
</tr>
<tr>
<td>CS5 Celebration Mix</td>
<td>A mix made up of flowers such as cornflower and poppy.</td>
</tr>
<tr>
<td>CS6 Biodiversity</td>
<td>A mid-height, very rich mixture designed to attract butterflies and pollinating insects.</td>
</tr>
<tr>
<td>CS7 Floral Canvas</td>
<td>A low-growing colourful mixture providing a superb floral environment.</td>
</tr>
<tr>
<td>CS8 Poppy Mixture</td>
<td>An excellent choice for those wanting to create a vivid red show of colour. Contains 100% poppies.</td>
</tr>
</tbody>
</table>

---

**Pack Size, App Rate (g/m²), Height, Germination, Flowering**

<table>
<thead>
<tr>
<th>Mix</th>
<th>Pack Size</th>
<th>App Rate (g/m²)</th>
<th>Height</th>
<th>Germination</th>
<th>Flowering</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS1 Festival</td>
<td>400g &amp; 4 Kg</td>
<td>2</td>
<td>1 - 1.5 m</td>
<td>8 - 10 days</td>
<td>June - Nov</td>
</tr>
<tr>
<td>CS2 Aurora</td>
<td>400g &amp; 4 Kg</td>
<td>2</td>
<td>0.5 m</td>
<td>8 - 10 days</td>
<td>June - Nov</td>
</tr>
<tr>
<td>CS3 New Wave</td>
<td>400g &amp; 4 Kg</td>
<td>2</td>
<td>1 - 1.5 m</td>
<td>8 - 10 days</td>
<td>June - Nov</td>
</tr>
<tr>
<td>CS4 Honey Bee</td>
<td>400g &amp; 4 Kg</td>
<td>2</td>
<td>0.5 m</td>
<td>8 - 10 days</td>
<td>June - Nov</td>
</tr>
<tr>
<td>CS5 Celebration Mix</td>
<td>1 Kg &amp; 4 Kg</td>
<td>2</td>
<td>0.5 - 1 m</td>
<td>8 - 10 days</td>
<td>June - Sept</td>
</tr>
<tr>
<td>CS6 Biodiversity</td>
<td>1 Kg &amp; 4 Kg</td>
<td>2</td>
<td>0.5 - 0.8 m</td>
<td>8 - 10 days</td>
<td>April - July</td>
</tr>
<tr>
<td>CS7 Floral Canvas</td>
<td>400g &amp; 4 Kg</td>
<td>2</td>
<td>0.5 m</td>
<td>8 - 10 days</td>
<td>Late June - Sept</td>
</tr>
<tr>
<td>CS8 Poppy Mixture</td>
<td>500g</td>
<td>2</td>
<td>0.3 - 0.4 m</td>
<td>-</td>
<td>June - July</td>
</tr>
</tbody>
</table>
Recognised internationally, Bowgrass Line Marking Paints have been formulated to offer exceptional levels of brightness, durability and coverage. Now further enhanced with reduced viscosity and improved flow.

**Bowgrass Elite**
Bowgrass Elite offers the ultimate in line marking concentrate formulation, and represents the pinnacle in both performance and durability. Exceptional brightness and unsurpassed in the market.

**Bowgrass Supreme Plus**
Reduced viscosity and improved flow properties have made Supreme Plus the preferred choice for high profile sporting venues, both in the UK and internationally.

**Bowgrass Super**
Re-formulating Bowgrass Super to make it more fluid has provided this high quality concentrate with improved flow characteristics which, coupled with its superb brightness and staying power in wet conditions, make it a major player in the sports turf marking arena.

**Bowgrass Regular**
Designed to give maximum economy, Bowgrass Regular remains the benchmark for clients who mark weekly. Formulated to offer an economical, bright, rain resistant durable line. Bowgrass Regular offers excellent quality combined with exceptional value.

**Bowgrass Redimix**
A technologically advanced, ready-for-use line marking paint that has been formulated to produce a high definition, bright, durable line through both spray and transfer wheel machines. Available in larger 15L or bulk 1000L containers, Bowgrass Redimix offers a simple cost effective solution for those requiring a ‘dual purpose’ line marking paint.

**Bowgrass Quantum**
A blend of highly micronized Titanium Dioxide, resins and surfactants, Bowgrass Quantum has been specifically formulated to offer an economic, ready to use, low volume, bright line that will over-mark a standard football pitch with a little as 1.1 litres of paint.

**Bowcom Low Volume**
Bowcom’s range of ready to use, low volume, bright line marking paint that will over-mark a standard football pitch with a little as 1.1 litres of paint.

**Bowcom Atomic**
The ultimate blend of highly micronized Titanium Dioxide, resins and surfactants. Bowcom Atomic has been specifically formulated to offer a premium ready to use, low volume, exceptionally bright line that will over-mark a standard football pitch with a little as 1.1 litres of paint.

- Unsurpassed atomization through all hollow cone nozzles
- Exceptional brightness in single pass
- Ready for use, no mixing or pouring
- 1.1 litre over-mark on regular football pitch
- Quick drying
- Durable, long lasting line
- Advanced stability in solution

**Bowcom Quantum**
A blend of highly micronized Titanium Dioxide, resins and surfactants, Bowcom Quantum has been specifically formulated to offer an economic, ready to use, low volume, bright line that will over-mark a standard football pitch with a little as 1.1 litres of paint.

- Superb brightness in single pass
- Ready for use, no mixing or pouring
- 1.1 litre over-mark on regular football pitch
- Quick drying
- Economic, durable, long lasting line
- Advanced stability in solution
Bowcom Colour Options

Ideal for logo application or where certain grasses or climates require tinted colour options, Bowcom have formulated a product to suit all requirements. Colours can be matched to suit client specification.

**Bowgrass Colour Concentrate**

Colour Concentrates is a range of tinted premium quality, heavy duty water resistant grass marking concentrates. Available in blue, red and yellow. Dilution rates at 1:3 (paint/water).

**Bowgrass Redimix Colour**

Redimix Colour is formulated ‘ready-for-use’ and is available in blue, red, yellow and green. Colours can also be matched to suit client specification.

**Bowgrass Tinting Pastes**

Bowcom Tinting Pastes have been specifically formulated to easily disperse into the Bowgrass range of Linemarking Concentrates. Available in four colours blue, yellow, red and green.

### Hard Surface & Synthetic

**Bowgrass Hard Surface Line Marking Paint**

A premium quality, heavy duty, water resistant, hard surface marking paint. All primary colours available. Apply neat with brush, roller or spray. A comprehensive range of stencils are also available. If applying through GMX Spray Marker, add up to 10% water.

<table>
<thead>
<tr>
<th>Pack Size</th>
<th>Colours</th>
<th>Dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Litre</td>
<td>White, Red, Blue, Yellow</td>
<td>add up to 10% water if using GMX Spray Marker</td>
</tr>
</tbody>
</table>

**Bowgrass Synthetic Marking Paint**

Bowgrass elite offers the ultimate in line marking concentrate formulation, and represents the pinnacle in both performance and durability. Exceptional brightness and unsurpassed in the market.

<table>
<thead>
<tr>
<th>Pack Size</th>
<th>Colours</th>
<th>Dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Litre</td>
<td>White, Red &amp; Yellow</td>
<td>New mark up to 10% water re-mark up to 15% water</td>
</tr>
</tbody>
</table>
A three wheel, professional quality pedestrian sprayer with a 60 litre capacity spray tank.

- Will spray a 6 rink bowls green or 3 golf greens with a single tank full (spraying at 400 L/ha)
- Polyethylene - 60 litre capacity tank
- 2 metre boom - 4 nozzles
- Triple nozzle - QuickFit with check valves
- Flojet pump - 14 L/min
- Full sprayer controls, filtration, pressure gauge, regulator, main on/off

The Trojan SPR30 is a two wheel, 30 litre capacity professional quality pedestrian sprayer.

- Ideal for bowls and cricket clubs and for lawn contractors
- 2 metre boom - 4 nozzles
- Triple nozzles - colour coded, QuickFit with check valves
- Full sprayer controls, filtration, pressure gauge, regulator, main on/off
- High capacity pump and heavy duty battery

The Cub Standard is a professional two wheel sprayer that is an ideal choice for those on a budget but still looking for a well built, reliable spraying machine.

- Polyethylene - 30 litre capacity tank
- 2 metre boom - 4 nozzles
- Single nozzle - QuickFit with check valves
- Filtration, preset regulator, main on/off
- Practical budget sprayer
EarthWay Spreaders

Using intelligent design, EarthWay spreaders are the professionals choice. Innovators in their field, they design, engineer, and manufacture high quality lawn and garden products used by homeowners and professionals alike worldwide.

The EarthWay EV-N-SPRED brand is widely recognised as a leader in broadcast spreading, and the products have been sold in the UK for more than 20 years. With a ground breaking 5 year warranty, every part is replaceable.

Each product that EarthWay manufactures goes through several quality-control reviews before being packaged for delivery to one of the dealers from around the world. EarthWay uses the combination of new robotic technology as well as time tested manufacturing methods to produce high quality products.

EarthWay 2050SU

The 2050SU spreader is ideal for use on medium to large lawns. This unit comes fully assembled as so will be ready to go from box to lawn in seconds.

- **Hopper Capacity**: 36 Kg
- **Load Bearing Capacity**: 46 Kg
- **Shutoff System**: EV-N-SPRED 3 hole drop
- **Wheels**: 25cm diameter deep-lug poly wheels
- **Chassis Type**: Epoxy powder coated chassis
- **Gearbox**: Heavy-duty high speed gearbox

EarthWay 2600A+

The 2600A+ is the perfect spreader for those who want a light duty commercial spreader at a great price. Featuring a number of commercial and professional features such as the solid linkage.

- **Hopper Capacity**: 18 Kg
- **Load Bearing Capacity**: 45 Kg
- **Shutoff System**: Ev-N-Speed 3-Hole Drop
- **Wheels**: 22cm pneumatic tyres on rustproof poly rims
- **Chassis Type**: Epoxy Powder Coated Chassis with steel handles
- **Rate Control**: Sold Linkage Rate Control

EarthWay F80D

This model has the commercial diamond chassis and comes fitted with the standard output tray.

- **Hopper Capacity**: 36 Kg
- **Load Bearing Capacity**: 45 Kg
- **Shutoff System**: EV-N-SPRED FLEX SELECT Dual Port Pro tray
- **Wheels**: 33cm diameter stud-type tyres on rust proof rims
- **Chassis Type**: Single-Tube “Diamond Design” Commercial epoxy powder coated chassis with 2 position height adjustable handle
- **Rate Control**: Tee handle gauge & lever rate control with adjustable solid linkage

EarthWay F80PD

This model has the painted professional twin tubed frame and comes fitted with the standard output tray.

- **Hopper Capacity**: 36 Kg
- **Load Bearing Capacity**: 113 Kg
- **Shutoff System**: EV-N-SPRED FLEX SELECT Dual Port Pro tray
- **Wheels**: 33cm diameter turf tyres on rust-proof poly rims
- **Chassis Type**: Twin-tube professional epoxy powder coated chassis with 2 position height adjustable ergonomic upper handle
- **Rate Control**: Tee handle lever & gauge rate control with adjustable solid linkage

EarthWay F80PSD

This model has the professional twin tubed frame in Stainless Steel and comes fitted with the standard output tray.

- **Hopper Capacity**: 36 Kg
- **Load Bearing Capacity**: 113 Kg
- **Shutoff System**: EV-N-SPRED FLEX SELECT Dual Port Pro tray
- **Wheels**: 33cm diameter turf tyres on rust-proof poly rims
- **Chassis Type**: Twin tube professional stainless steel chassis with 2 position height adjustable ergonomic handle
- **Rate Control**: Tee handle lever & gauge rate control with adjustable solid linkage

Gearbox: Floating Super-duty gearbox
Osatu Knapsacks

The Osatu Evolution Professional range offers strong durable knapsack sprayers, complete with a 5 year warranty.

The adjustable pressure regulator ensures accurate application can be made at variable rates. The design with seals, wide base and large pouring mouth also go a long way to help reduce the operator exposure risks.

- Strong lightweight spray tank
- High performance hose
- Translucent side level indicator
- Pressure regulator (1.5 bar 3 bar & free flow)
- Stainless steel handle
- Ambidextrous; reversible handle
- 95 cm fibreglass lance
- Easy maintenance, tool free
- Designed as per ISO/DIS 19932 standard
- 5 year warranty

Available in 16 & 20 Litre

Reguflow

Reguflow is a simple lightweight, perforated lay-flat irrigation hose that works under a low operating pressure from a water main or low pressure pumped system.

Reguflow eliminates the need for expensive and complicated irrigation systems, yet it provides a fine, uniform irrigation pattern. It is supplied as a 100 metre roll, but can be cut to fit your requirements.

The manufacture of Reguflow utilises laser technology to provide very small, accurately sized perforations that are evenly spaced along the length of hose.

When the water is turned on, the hose will slowly inflate and an even water pressure will exist throughout the entire length. The emerging jets of water have the same velocity at any part of the hose, which gives uniform watering throughout.

BunkerFilter

This robust bunker filtration system is not only easily installed by greens staff but is importantly located below the bunker base where it cannot interfere with play.

It is designed to retrofit with existing drainage. Bunkerfilter uses low cost ceramic parts for robust performance and is designed to be a perfect fit for modern 100mm plastic drain hose.

Key Features
- Quickly restores drainage to cope with peak flows
- Invisible and harmless to the environment.
- Does not interfere with play.
- Robust and will not deform with time.
- Requires very little maintenance.
- Can be treated to prevent slimes and algae.
- Easily installed by your greenkeeping staff.
Inspection of specified plant protection product application equipment

The new rules in SUD 2012 detail the requirement for routine testing of certain types of application equipment. This includes sprayers mounted on aircraft and trains and those that are vehicle mounted or trailed with a boom greater than 3 metres in length. The testing requirement also relates to the age of the kit; if it was purchased or leased for the first time (i.e. not second hand) on or before 26th November 2011 – then it will have needed to be tested before the 26th November 2016, when the requirement for routine inspections came into force.

Sprayers that were first purchased after 26th November 2011 must be tested before they are five years old. Equipment will need re-testing every five years until 2020 when the cycle will be changed to every three years. Hand held and pedestrian controlled sprayers, such as knapsacks and the small electric or peristaltic pumped sprayers do not need to be tested but they should be checked by a competent person to ensure their efficient operation, keeping records of when they were examined.

Properly maintained and adjusted application equipment is safer to the environment and the spray operator, more reliable and potentially more economical. Regular examination of application equipment can be arranged through the National Sprayer Testing Scheme who have 230 test centres across the UK and over 600 qualified examiners itching to get a look at your pumps and pipework! They have a presence on the web at: http://www.nsts.org.uk/
TurfReports is a dedicated agronomic software system built specifically to customer requirements. The extensive features aim to improve knowledge and understanding of turf performance and the quality of playing surfaces all year round.

TurfReports is a data recording and analysing system that is accessible on a wide range of platforms including: phone, tablet, laptop and desktop, enabling data to be recorded and accessed from anywhere in the world.

Key Features
- TurfMachinery
- TurfApplication
- TurfHealth & Performance
- TurfRenovation
- TurfWeather

TurfReports focuses on turf health & performance; the dedicated features are designed to help the user understand their turf and make better use of all of the measurable data and information taken on a daily basis. In this busy world it is easy for data to become spread around in various formats on different media, such as smart phone notes and scraps of paper. This information then has to be collated and added to some form of document for project management purposes. However, the TurfReports system enables data to be recorded ‘on the go’ saving hours of extra time spent dealing with the paperwork, instead vital information on the important aspects of managing a specific turf facility are instantly available in a usable format.

TurfMachinery
TurfMachinery is designed to help improve the management of machinery used in a sports facility. Currently many turf managers use a paper based system, where the operator must tick each section and write down important information relating to that machine. These ‘Daily Maintenance Checklists’ are usually stored on a clipboard hung near the equipment. Such lists can easily become damaged by a damp atmosphere or dropped on the floor and soiled but more importantly they are often ignored by staff who have a busy workload.

TurfMachinery has been designed to help monitor and track the following:
- Daily maintenance of all machinery; pre-start checks, highlighting any issues and PPE
- Machinery hours tracking for each of machine
- See how much fuel is being used across all equipment
- Faults - Highlighting any problems with machinery, in order to alert the mechanic team to effect repairs
- Time in operation of all machinery. Each item of equipment is signed in and out to monitor availability.

Using TurfMachinery allows you and your staff to input all the required machinery data before and after using any type of equipment. The logs of all your machinery data and with an ease of uploading the required information, enables you to better manage your machinery fleet.

TurfApplication
TurfApplication is a dedicated feature that records all fertiliser, pesticide and chemical applications and automatically calculates the input of major nutrients (NPK). The system keeps track of those vital spray application records and chemical store logs. By using TurfApplication the club will conform to all health and safety & COSHH requirements.

TurfHealth & Performance
TurfHealth & Performance incorporates the latest visual measurement guides created inside the TurfReports system. There is no longer any excuse for not having the right measurement tools. Simply upload any type of turf health & performance data, such as green speed or root depth, to see a visual in-depth analysis of the turf’s health and performance.

The dashboard displays all data for each element recorded and creates an overall TurfPerformance score based on the latest data upload. The overall score is broken down per element, letting the user see where their Turf is failing or succeeding. Recording data is simple using TurfReports with all data stored in one place, allowing the evaluation of trends and patterns upon which an action plan can be created.

TurfRenovation
TurfRenovation helps in the management of top dressing and over-seeding and aeration operations. Simply upload the aeration tine size and hole spacing to create a chart showing a percentage of surface area removed or impacted, depending on tine selection, giving an in-depth analysis of the aeration task proposed. This information can be used in the formation of long-term aeration strategies for improving turf quality.

Keep track of all top dressing applications by uploading the amount, type and area to which it is applied. This creates visual charts showing trends and patterns, comparing top dressing application to turf health and performance.

TurfRenovation keeps records of the seed type, quantity and the exact time of over-seeding operations. For planning purposes, information from TurfWeather can be used to select the optimum timing to get the best chance for successful germination and subsequent establishment.
TurfWeather

TurfWeather is a dedicated sports turf weather system, setup to the local postcode. TurfWeather provides weather forecasts up to 60 days in advance with more detailed forecasts over a shorter time frame, which is ideal for planning work schedules.

TurfWeather also provides comprehensive ‘growth degree days’ (GDD) information, which is displayed in easy-to-understand charts. Monitoring GDD enables the maximization of turf health and performance by applying the right product at the right time through the use of accurate data specific to the site.

Growth Potential and GDD display total growth potential and total growth degree days in a simple visual format. This is a great indicator tool for deciding when it is best to perform the following applications:

- Nutrient application; requirements, which nitrogen source to use and how much to apply.
- Plant growth regulator treatments, timing and application rate
- Seed head growth proactive with seed head population
- Weed control; weed emergence data allows accurate timing of applications
- Turf Pests; for planning accurate timings of chemical applications
- Optimum over-seeding ensuring you get the best germination and establishment.

For more information on TurfReports & TurfWeather

www.sherriffamenity.com

Sherriff Amenity Academy

Sherriff Amenity Academy is an online learning resource with courses and lessons being created on a range of areas of turf management and for all products sold by Sherriff Amenity.

Sherriff Amenity Academy has been set up to help improve the UK turf amenity sector stewardship of pesticide and products. Keeping the industry up-to-date with legislation and product information and promoting best practise for all pesticide products.

Each course should take approximately 30 minutes to complete and consists of videos, case studies and studying the MSDS label and technical specifications. Once the student has been through the various modules, the course will end with a multiple choice test. The courses have been designed so that the student can fully understand and get maximum benefits from the products they purchase. This will, in turn, lead to healthier, better performing turf. Throughout the Knowledge Courses, users will gain a greater insight into the methods and operations of certain tasks such as turf pest and disease control, product application and seeding.

The completion time for the Knowledge Courses varies from 45 minutes up to 2 hours and more modules are added on a monthly basis. In addition, if there is a specific topic you would like to learn more about, which could perhaps be tailored to your own site or requirements, then Sherriff Amenity welcome all suggestions. Both the Product Courses and Knowledge Courses begin with an introductory video and the modules contain helpful step-by-step lesson notes – to make for an extremely user-friendly experience.

The Academy also offers a unique opportunity for all students to significantly grow their CPD points as BIGGA are allocating 4 points for all successfully completed Knowledge Courses and 1 point for the Product Courses to any BIGGA member who complete courses on the Sherriff Academy. Upon completion of a module, students receive an email which contains the grade and a breakdown of every question – enabling you to see which questions you got right and which, if any, you got wrong. Once a student has completed their required courses, they also have the option to top-up their knowledge through the Academy’s Refresher Courses. These Refresher Courses are available for all of the Product and Knowledge modules and are shorter in length, concentrating on a few key test questions.

To sign up scan here
Plant nutrient tests and soil analysis are used to diagnose nutrient requirements and provide information for adjusting fertiliser programmes.

SAP analysis measures the nutrient concentration in the leaf sap and can be used to forecast nutrient deficiencies.

A SAP analysis can tell you the current uptake of nutrients, highlighting any deficiencies or excesses, long before visible symptoms first appear in the grass. It serves to highlight the nutrients which the grass is able to use for growth at that moment. It can also indicate nutrient imbalances in the soil and provide information for selecting fertiliser.

Factors effecting mineral uptake:

- Soil pH
- Nutrient imbalances
- Release of fertilisers
- Soil structure
- Root development
- Soil microbial life
- Climatic conditions; temperature, light, moisture & Nutrient Uptake

There are two kinds of nutrients in plants, dissolved salts which relate to current uptake for plant development and fixed nutrients found in organic compounds and these are much less available for plant development. The SAP test mostly measures dissolved salts.

A SAP analysis will quickly show highs and lows of nitrogen inputs. This nutrient is a major limiting factor to healthy grass growth. It is an essential component of amino acids and proteins. At certain times of the year, high nitrate can encourage luxurious growth resulting in the production of larger weak cells. This is often accompanied with low sugar production. Over stimulation from nitrate accumulation should be managed. When roots cannot deliver NPK or other nutrients the plant will use its reserves. Consistent healthy growth is only achieved when the grass has a balanced nutrient uptake. A strong healthy sward can prevent other issues such as attack from pests and disease. A SAP analysis can be an invaluable tool in the nutrient management process.

Timing

First sample to be taken in the early spring, at the start of rapid growth or when a problem is suspected throughout the year. Subsequent samples should be taken at 2-4 week intervals after any corrective application is made.

Samples

Samples of the clippings should be taken from the soil box as soon as possible after early morning cut. Please take as large a sample as the sample bag will allow. All samples should be placed into the plastic bags provided and protected from heat and light as quickly as possible, but do not freeze.

Avoid

- Sampling within 5 days of a nutrient application
- Sampling within 2 days of a chemical application
- Taking the sample after 10:30am
- Diseased or dead grass
- Soil contamination of the sample

For more information
Area coverage maps are approximate for clarification of your local area representative please contact info@sherriffamenity.com