

Larkstel Associates Limited

Turfcare Supplies



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Version 4





Larkstel Associates Limited



Linemarking paint suitable for the top professionals as well as the Sunday morning amateurs. The range caters for both Spray and traditional wheel to wheel marking machines.



The Glider

A robust spray marker for ready-to-use paints.

Can carry 2 x 10 litre packs of RTG line marking paint
Delivers consistent, efficient, effective marking of multiple pitches
Perfectly balanced line marking machine for ease of movement over a range of surfaces
Adjustable handles to suit operator preferences
Powerful, high-pressure pump for consistent paint flow
Long-life, removable battery, charger LED, charge indicator and battery life indicator
Pneumatic tyres and plated chassis

**9MC002
9MC002D**

**No tank or pod
c/w tank or Pod**

LA RTG Spray Extra Line Marking Paint

9FG029D

RTG Spray Extra ready to use paint delivers fast drying, crisp bright lines with significant cost and time saving

Description

Advanced, ready to use line marking paint, no mixing, no mess
Use from as little as 1.5 litres to mark a standard sized football pitch
Bright white, long lasting lines
Spray using Impact cone nozzle technology
For use on Natural Grass & Hybrid Pitches
Can also be used for temporary markings on synthetic surfaces

Application:

Spray using Glider cone nozzles

Pack Size 10 Lt



LA RTG Spray Line Marking Paint

9FG029E

LA RTG Lite is an extremely cost effective, ready to use paint, perfect for regular over-marking and multiple pitch marking. The ready to use formulation means no mixing, no mess, and tremendous cost and time savings

Description

Extremely cost effective for frequent/weekly marking
Ready to Use formulation, no mixing, no mess, saves time
excellent value for multiple pitch marking
For Natural Grass & Hybrid Pitches

Application:

Spray through an Glider cone nozzle

Pack Size: 10 Lt



LA RTU Transfer Wheel Line Marking Paint

9FG029F

LA RTU is a ready to use white line marking paint especially formulated for transfer wheel application.

Description

Ready to Use transfer wheel line marking paint, no mixing, no mess, saves time. Economical and easy to use
Bright white lines
For Natural Grass & Hybrid Pitches

Application:

Any transfer wheel line marking machine.

Pack Size 10 Lt



LA Concentrate

A concentrated, white line marking liquid designed for frequent re-marking on grass surfaces.

Budget line marking product
Easy to mix
Standard whiteness
Initial marking - mix in ratio
1 part paint with up to 3 parts water
Over marking - mix in ratio
1 part paint with up to 7 parts water
These dilution rates can be varied according to ground and weather conditions

9FG029B



LA Superflow

A super concentrated line marking paint designed for regular weekly marking.

Good coverage
Excellent whiteness
Ease to use
Initial marking - mix in the ratio
1 part Super Concentrate to 4 parts water
Over marking - mix in the ratio
1 part Super Concentrate with up to 10 parts water
These ratios can be varied according to ground and weather conditions

9FG029A



LA Premier

An impressive, top quality line marking liquid producing high class results.

Strong whiteness
First rate coverage
Ease of mixing
Great value
Initial marking - mix in the ratio
1 part paint with up to 5 parts water
Over-marking - mix in the ratio
1 part paint with up to 10 parts water
These dilution ratios can be varied according to ground and weather conditions as well as type of line-marking machine

9FG029



LA Synthetic Grass

New Synthetic Grass Line Marking Paint is an advanced ready-to-use paint formulation specially designed for synthetic grass surfaces.

Formulated in a range of colours, it offers many benefits over and above the previous formulation

- Richer, deeper colours
- Improved flow properties
- Better adhesion to the leaf
- Stronger water repellence
- Longer storage stability (up to 12 months in cool conditions)
- Economical - just 10 litres
- Ready-to-use line marking paint formulation
- For synthetic grass
- Applied by spraying through the Glider using a yellow flat fan nozzle



LA Ecoflow Line Marking Paint

LA Ecoflow Line Marking Paint is a dilutable concentrate line marking paint for use with spray and transfer wheel line marking machines.

9FG029C

Description

Superb, cost-effective line marking paint selection
Produces a crisp, bright white line
Easily diluted, contains an anti-clogging additive
High pigment content offers excellent water resistance
Formulated for both spray and transfer wheel line marking machines.

For use on Natural Grass & Hybrid Pitches

Dilution:

Initial marking – 2:1 ratio water to paint.
Over marking – 4:1 ratio water to paint.

Pack Size 10 Lt



Flush Thru Pump & Nozzle Cleaner

Flush Thru is a specially formulated ready-to-use cleaner for use with the Glider line marking machines.

For regular cleaning maintenance, preventing paint residues in piping, filters, pumps and

Pack Size 10 Lts





Larkstel Associates Limited



Larkstel Associates have a bespoke range of turf management products within 120 ltr and 200 ltr barrels. These are manufactured to order, sent directly from the manufacturers to your site, cutting down on plastic of the smaller pack sizes and the associated costs.

The range includes, but is not limited to:

- Liquid NPK (26-0-0 / 17-2-5 / 10-0-10 / 4-2-18)
- Biostimulants (seaweed / humic / amino / carbohydrates)
- Liquid Iron (chelated / complexed or sulphate)
- Wetting Agent (penetrant / curative / programme / fairway)

Some of our most popular mixes to date are:

- 10-0-0+8%fe
- 6.65% complexed and chelated liquid iron
- High Mg CA
- Cold extracted seaweed + Trace elements
- Rooting biostimulant mixture
- Fairway wetting agent+ Seaweed
- Multi action wetting agent
- Stress conditioner (7-0-0+3%fe + aminos +wetter +Trace elements +carbohydrates)

Bespoke Product Solutions

Larkstel can facilitate the formulation and manufacturing of bespoke product solutions, allowing the end user to choose their required specification for a turf management product. Simply you design it, well make it!

Larkstel along with its Formulation Partners HITAS Products have over 15 years' experience within the turf industry, creating bespoke product mixes to meet site specific requirements. With your site knowledge and our formulation expertise, the right product can be manufactured for your specific requirements.

Tim Baldwin





Larkstel Associates Limited



Larkstel Liquid Fertilisers

17-2-5 / 26-0-0 / 4-2-18 / 10-0-10 + Trace Elements

Dual function Liquid fertilisers for foliar or root absorption by alternating the water volumes.

Contains a carbohydrate biostimulant, trace element package and spreading agents.

FEATURES AND BENEFITS.

- Increased performance with leaf and root uptake.
- Will not produce flushed growth when applied.
- Highly compatible with other turf management products.
- Dual application rate for foliar and root uptake.

HOW LARKSTEL LIQUID FERTILISERS WORK?

Larkstel liquid fertilisers are designed for foliar uptake and root absorption by applying in low water volumes. Applying in higher water volumes, the nutrient is taken past the leaf to the rootzone where the nutrients can be taken up by the plants roots. The spreading agents allow the fertiliser to spread on the leaf or penetrate through the thatch layer when applied in low or high water rates.

Larkstel Liquid Fertilisers contain naturally derived simple carbohydrates. These short chain carbohydrates (glucose, sucrose, & fructose) are ideal for foliar feeding. When the plant is under considerable amounts of stress it cannot produce enough carbohydrates itself to meet demands. Larkstel liquid fertilisers source of carbohydrates provide an immediate energy source for the plant to relieve stress symptoms.

Larkstel Liquid Fertilisers trace elements provide the plant with a range of important micronutrients which help overcome any deficiencies found within the plant and increase the plants health e.g. root production and leaf strength. The comprehensive EDTA trace element package within Larkstel liquid fertilisers contains Boron, Copper, Iron, Manganese, Molybdenum and Zinc.

TRACE ELEMENTS:

B01%
M0.1%
EDTA Cu 0.1%
EDTA Fe 0.1%
EDTA Mn 0.1%
EDTA Zn 0.1%

APPLICATION RATE.

Application Rate: 20-100lts per ha in 300-900lts of water

Half fill the sprayer with clean water, add the appropriate amount of Larkstel Liquid Fertiliser, add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.



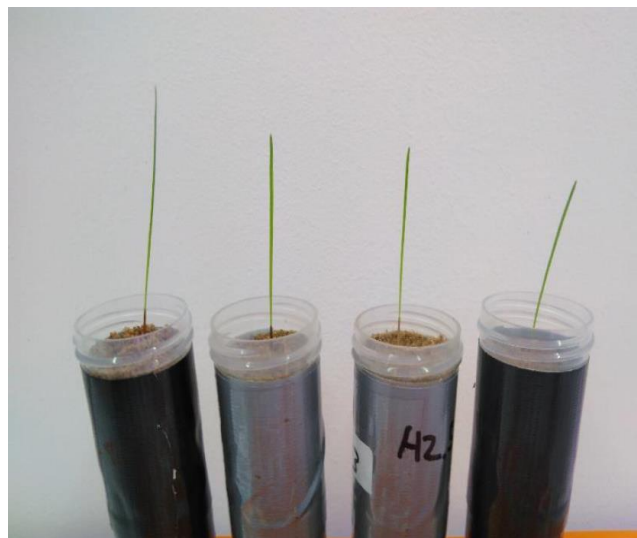


Potassium Phosphite

High phosphite and potassium liquid fertiliser designed to strengthen turfgrass and increase tolerance to environmental stress

FEATURES AND BENEFITS

- 0-30-20 analysis (with phosphorous as phosphite)
- Ideal for use as part of an integrated disease management strategy
- Will help strengthen the turf to withstand periods of high disease pressure, reducing disease-induced damage
- Will aid turf recovery from high disease pressure to prevent lasting scarring
- Readily available source of potassium which will aid plant functions such as the movement of water, nutrients and carbohydrates through the plant
- Can be used all-year round to improve plant health
- Contains complexing agents to improve nutrient uptake



HOW POTASSIUM PHOSPHITE WORKS

Mode of Action

Potassium and phosphite work synergistically to strengthen the plant, improving tolerance to periods of abiotic stress or disease pressure. The effect of applying this combination as a foliar spray is a stimulation of the turfs natural defence mechanisms, giving effective tolerance to diseases such as Anthracnose and Fusarium Patch. Potassium is extremely important in plant resistance to disease and environmental pressures such as frost. This is because it is used in the strengthening of cell walls, hardening the turf to withstand stress during periods of low temperatures. The nutrients contained within the product will improve plant health when uptaken, correcting any deficiencies which may be present.



Fusarium Patch



Anthracnose

APPLICATION GUIDELINES

Potassium Phosphite is recommended to be used at a rate of 5 -10 litres per hectare in 300 – 500 litres of water.

Timing

Apply at any time of the year, when required. For best results, apply when the turf surface is dry and rainfall is not imminent. Fortnightly applications can be made throughout the growing season, with no watering in required.



Cold Extracted Seaweed + TE

30% Seaweed Concentrate

FEATURES AND BENEFITS.

- No added NPK, facilitating managers with maximum control of nutritional input.
- Increases microbial activity.
- Increases root length and encourages root growth in new and established turf.
- Faster recovery from wear stress.
- Increased tillering.
- Low application rate.
- Tank-mixable.

HOW COLD EXTRACTED SEAWEED + TE WORK?

A highly active source of *Ascophyllum nodosum* seaweed with trace elements for use as a turf biostimulant. It can help produce high quality sports turf with excellent wear and recovery.

Ascophyllum nodosum has many scientific studies that have identified measurable beneficial effects on plant growth; such studies have shown that it increases root length and encourages root growth and development in new and established turf, It can encourage tillering without excessive shoot growth.

The product is based upon cold pressed seaweed. The extraction method maximises the bioactive compounds and produces the highest concentration of seaweed that is beneficial to the turf. Larkstel concentrated seaweed is formulated without additional nutritional supplements such as nitrogen. This allows managers flexibility to control nutritional inputs.

Larkstel concentrated seaweed contains a high concentration of medium to long sugar chains referred to as polysaccharides. *Ascophyllum nodosum* contains a range of soluble polysaccharides like alginates. These substances provide energy, chelate nutrients and play a key role in plant defence. In addition Larkstel concentrated seaweed also contains polyphenols, and antioxidants. This helps the plant during oxidative stress in coping with free radicals generated during abiotic and biotic stresses.

Larkstel concentrated seaweed can be used throughout the year on all sports turf surfaces, including fine turf such as golf greens and football fields.

APPLICATION RATE.

Application Rate: 5-10lts per ha in 500-700lts of water

Half fill the sprayer with clean water, add the appropriate amount of Cold Extracted Seaweed + TE, then add the remaining water whilst agitating. Suitable for use in all types of sprayers that is capable of applying the appropriate volume of water. Apply as a medium to fine spray.





Biostimulant Rooting Mixture

A Biostimulant liquid that increases root development, improves turf colour and plant health.

FEATURES AND BENEFITS.

Contains humic acid which improves rooting length, depth and improves the cation exchange capacity of the soil structure.

Contains seaweed which contains plant growth hormones that improve shoot and root development.

Increases plant health, rooting, seed germination and establishment.

Tank mixing compatible.

HOW BIOSTIMULANT ROOTING MIXTURE WORKS?

A concentrated rooting biostimulant to improve root length, mass and plant health.

5% Nitrogen.

0.5% Zinc.

1% Spreading and penetrating surfactants.

2.5% Seaweed.

2.5% Humic Acid + Fulvic Acid.

2.5% Carbohydrates and naturally derived amino acids.

Amino Acid

The amino acid in Rooting Biostimulant are all derived from natural extracts and as such are readily utilised by the plant. Amino Acid provides the plant with an energy source it can utilise and can cross the membranes of cells into the root under stress conditions.

Humic and Fulvic Acid

The humic acid content brings with it a small amount of fulvic acid to improve membrane permeability. Humic acid improves the plants ability to metabolise nutrients, plant function, intensifying cell division and consequently increasing root and shoot development.

Zinc

Zinc has been widely demonstrated to improve root development by stimulating many crops during early growth. Zinc is important for cell elongation.

Ascophyllum Extract + Seaweed

A rich source of growth hormones that act as a biostimulant for both the grass plant and the soil micro-organisms. Ascophyllum extract also contains a range of soluble polysaccharides which can indirectly activate defence signalling pathways within the plant.

APPLICATION RATE.

Application Rate: 10-20lts per ha in 500-600lts of water

Half fill the sprayer with clean water, add the appropriate amount of Rooting Biostimulant Mixture, add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.





High Mg

A concentrated 8% w/w Magnesium formulation contains carbohydrates readily absorbable by the plant.

FEATURES AND BENEFITS.

- Corrects Magnesium deficiency symptoms.
- Contains simple carbohydrates to relieve stress symptoms.
- Unique tank mixing compatibilities.
- Formulation enables rapid leaf and root uptake of the element.
- Corrects Magnesium / Calcium imbalance in the soil.

HOW LARKSTEL HIGH MG WORKS?

Magnesium is a micronutrient involved in important plant activities including phosphorus translocation mechanisms, enzyme reactions and is a constituent of chlorophyll. Magnesium is important for the maintenance of the green colour and growth in the turf plant.

Deficiencies of magnesium are more prone in sandy soils which have an acidic pH. Symptoms include a cherry red discolouration along leaf margins usually occurring in the older, lower leaves first before spreading.

Root growth is also severely restricted. The magnesium to calcium ratio is important in relation to the availability of both elements and the addition of Larkstel High Mg can assist in maintaining a correct balance between the two elements. Larkstel High Mg provides readily available magnesium for fast uptake by the leaves and shoots.

L-Form Amino Acid

Larkstel High Mg also contains L-form Glycine Amino Acid which acts as a complexing agent for foliar nutrients, ensuring efficient uptake and produces stable complexes over a wide pH range. When stress situations occur, there is a greater demand for Amino Acids than the plant can meet. Larkstel High Mg containing L-form Glycine provides the plant with amino acid it can utilise to cross the membranes of cells into the root under stress conditions.

Carbohydrates

Larkstel High Mg also contains naturally derived simple carbohydrates. These short chain carbohydrates (glucose, sucrose, & fructose) are ideal for foliar feeding. When the plant is under considerable amounts of stress it cannot produce enough carbohydrates itself to meet demands. Carbohydrates within Larkstel High Mg provide an immediate energy source for the plant to relieve stress symptoms.

APPLICATION RATE.

Application Rate: 5–10lts per ha in 400-500lts of water

Half fill the sprayer with clean water, add the appropriate amount of Larkstel High Mg fill with remaining water whilst agitating. The product may be used at any time of the year providing the turf surface is dry and rainfall is not imminent. May be applied every 2 weeks throughout the season. No watering in required.





High Ca

**A concentrated form of calcium containing carbohydrates & L-Form Amino Acids
readily absorbable by the plant.**

FEATURES AND BENEFITS.

- Foliar applied calcium for turf to correct any calcium deficiencies.
- Contains simple carbohydrates to relieve stress symptoms.
- Improved disease tolerance by helping to build stronger cell walls.
- Unique tank mixing compatibilities.
- Low and economical application rate.

HOW HIGH CA WORKS?

Calcium is an important cell wall constituent (as calcium pectate), helping to strengthen the walls. It is also known to be involved in cell division, root and leaf development and phosphorus availability.

Calcium mainly occurs in leaves and stems but it is relatively immobile within the tissues. It is also present in the soil, levels are related to magnesium, potassium and sodium. It may also be deficient in alkaline soils since calcium is present in an insoluble form.

Using the Larkstel High Ca, Liquid calcium will overcome the problems of calcium deficiencies in the plant.

L-Form Amino Acid

Larkstel High Ca also contains L-form Glycine Amino Acid which acts as a complexing agent for foliar nutrients, ensuring efficient uptake and produces stable complexes over a wide pH range.

When stress situations occur, there is a greater demand for Amino Acids than the plant can meet. Larkstel High Ca containing L-form Glycine provides the plant with amino acid it can utilise to cross the membranes of cells into the root under stress conditions.

Carbohydrates

In addition, Larkstel High Ca contains naturally derived simple carbohydrates. These short chain carbohydrates (glucose, sucrose, & fructose) are ideal for foliar feeding. When the plant is under considerable amounts of stress it cannot produce enough carbohydrates itself to meet demands. Carbohydrates within Larkstel High Ca provide an immediate energy source for the plant to relieve stress symptoms.

APPLICATION RATE.

Application Rate: 5-10lts per ha in 400-500lts of water

Half fill the sprayer with clean water, add the appropriate amount of Larkstel High Ca, fill with remaining water whilst agitating. The product may be used at any time of the year providing the turf surface is dry and rainfall is not imminent. May be applied every 2 weeks throughout the season. No watering in required.





10-0-0 + 8% Fe Liquid Iron

**A concentrated form of iron producing a prolonged and rapid turf colour,
also corrects Iron deficiencies.**

FEATURES AND BENEFITS

- Long term activity – up to 6 weeks
- Enhanced turf colour within 12 hours
- Enhances chlorophyll production
- Promotes excellent turf colour
- Cost effective formulation
- Designed for use on greens, tees and fairways
- Unique tank mixing compatibilities
- Economical application rate

HOW 10-0-0 + 8% Fe Liquid Iron Works

While iron is not part of the grass plants chlorophyll structure, it is required to produce chlorophyll, which gives plants their green colour. Iron also plays an important role in reactions involving photosynthesis, nitrogen utilization and root growth. Liquid Iron provides the turf grass with a source of Iron, thus helping to produce chlorophyll and improving the green colour of the grass.

10-0-0 + 8% Fe Liquid Iron should be used to help give turf a good, healthy colour without promoting excessive growth. 10-0-0 + 8% Fe Liquid Iron can also be used to help with turf strength during winter months, making the turf more resistant to stress and disease.

Due to its acidity and high Sulphur content is ideal to be incorporated into an integrated pest management strategy. An alkaline soil can encourage pest such as worm casting on the surface. Or create the ideal environment to turf diseases. Lowering the pH of soil conditions will create a less ideal environment for such problematic pests and turf diseases. Especially in an environment where the use of pesticides is restricted and undesired.

Care however should be taken where moss is present as, at the standard rate, 10-0-0 + 8% Fe Liquid Iron will turn the moss black. In such a situation the area should be scarified and over-seeded to re-establish the sward.

APPLICATION GUIDELINES

Apply 20 litres of 10-0-0 + 8% Fe Liquid Iron in 400-500 litres water per hectare.

Half fill the sprayer with clean water, add the appropriate amount of 10-0-0 + 8% Fe Liquid Iron, add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.

The product may be used at any time of the year providing the turf surface is dry and rainfall is not imminent. May be applied every 2 weeks throughout the season. No watering in required.



6-0-6 TURF CONDITONER

FEATURES AND BENEFITS.

- A microbial stimulant to regenerate the existing micro-organism populations and encourage thatch degradation and new root growth.
- A turf tonic to correct plant deficiencies for healthy leaf and shoot growth.
- Natural food supply to boost beneficial bacterial activity within the rootzone.
- Will achieve a plant green up response without the use of iron.
- Contains carbohydrates for an immediate source of energy to the plant.
- Stimulates root microbes to improve nutrient uptake.

HOW 6-0-6 TURF CONDITIONER WORK?

6-0-6 Turf Conditioner is a microbial stimulant to regenerate the existing micro-organism populations and encourage new root growth due to its unique co-formulants found within the formulation.

MICROBIAL BIOSTIMULANT

6-0-6 Turf Conditioner contains naturally derived simple carbohydrates and sugars. These have different chain lengths of sugars which gives longevity, the greater the chain length the longer the time for the chain to be broken down by the microbes. These carbohydrates in the soil maintain and stimulate microbial activities in the rhizosphere.

In addition when the plant is under considerable amounts of stress it cannot produce enough carbohydrates itself to meet demands. **6-0-6** Turf Conditioner contains a source of carbohydrates to provide immediate energy source for the plant to relieve stress symptoms.

6-0-6 Turf Conditioner also contains Amino acids and proteins, these typically form the biggest input of organic-N into most soils and provide a readily available source of C and N for soil micro-organisms.

The ingredients within **6-0-6** Turf Conditioner lead to the mobilization of nutrients by accelerated soil organic matter decomposition. It is known that the stimulation of microbial activities enhances the breakdown of organic matter. The breakdown of the thatch layer releases nutrients which become available to the plant, a process called nutrient recycling.

New Root Growth

In addition to the nutrients released by the breakdown of the thatch layer, **6-0-6** Turf Conditioner contains macro nutrients and a plant-based trace element package. This encourages new root growth by the plant utilizing the nutrients and by stimulating mycorrhizal fungi that live in a close mutually beneficial relationship with the plant root system.

Larkstel **6-0-6** Turf Conditioner can be used throughout the year on all sports turf surfaces, including fine turf such as golf greens and football fields.

Application Rate: 20-40lts per ha in 500-Lts of water



6.5% TURFGRASS LIQUID IRON

FEATURES AND BENEFITS.

- A unique mix of complex and chelated liquid iron to give immediate turf response whilst maintaining longevity, up to 6 weeks of turf colour and plant strength.
- Immediate turf response and enhanced longevity.
- Contains spreading and leaf penetrant agents which enhances leaf penetration and leaf coverage.
- Can also be used as a winter hardener to acidify (lower the pH) and to help prevent disease on all types of turf.
- Surfactant / Iron combination for dew dispersal and hardening to discourage fusarium patch disease.
- Promotes excellent turf colour, increases chlorophyll content.
- Highly compatible with other turf management products.



HOW 6.5% TURFGRASS LIQUID IRON WORKS?

Dual Iron Source

Turfgrass liquid Iron contains complexed and chelated irons for immediate turf response and enhanced longevity. The complexed iron is quickly absorbed by the plant to give an immediate green up response which can be seen within three hours. EDTA is a chelated iron which prevents lock-up with other elements in soils and is quickly absorbed by translocation into the plant.

Spreaders and Penetrants

Turfgrass liquid Iron contains a co formulated blend of spreading and penetrant wetting agents, to ensure complete coverage of the leaf. A larger surface area and increased penetration improves uptake of iron by the plant, increasing efficiency of the product. In addition, the spreading and penetrant wetting agents will give the added benefits of short-term dew dispersal and leaf dryness.

Acidifying agent

Turfgrass liquid Iron can also be used as part of an integrated disease management approach to control fusarium (snow mould). They act by acidifying the stem base, reducing surface moisture and naturally hardening the plant to resist attack by fusarium.

APPLICATION RATES.

Half fill the sprayer with clean water, add the appropriate amount of **6.5% Turfgrass Liquid iron** add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.

Application rate 20lts per Ha in 400-500lts of water.



Stress Conditioner

12%N 3%Fe + Carbohydrates + Amino Acids + Wetting Agent + Trace Elements

FEATURES AND BENEFITS

- **An all in one mixture based on nutrition and biostimulants that provides results Perfect for pre tournament or to pre condition the turf before the onset of stress**
- **A wetting agent to help with deficient moisture within the rootzone and nutrient uptake**
- **Contains trace elements for improving turf colour and health**
- **Carbohydrates for an immediate source of energy to the plant**
- **Amino acids for stress reduction**
- **Complexed iron to increase chlorophyll content and provide immediate colour response**

HOW STRESS CONDITIONER WORKS

Sugars

Stress Conditioner provides a source of carbohydrates to provide immediate energy source for the plant to relieve stress symptoms. These short chain carbohydrates (glucose, sucrose, & fructose) are ideal when the plant is under considerable amounts of stress as it cannot produce enough carbohydrates itself to meet demands.

Wetting agents

Stress conditioner contains wetting agents will keep the playing surface firm by allowing water to penetrate through the thatch layer. The wetting agent and maintain correct air to water balance within the rootzone. and aid in nutrient uptake.

Amino Acids

When stress situations occur, there is a greater demand for Amino Acids than the plant can meet. Stress Conditioner containing naturally derived amino acids provides the plant with the amino acids it can utilise and can cross the membranes of cells into the root under stress conditions.

Trace elements

Stress conditioner contains Calcium (0.175%), Magnesium (0.125%), Phosphorous (0.025%), Potassium (0.875%)
Cobalt, Copper, Manganese, Zinc. (All Approx. 0.01%)

Iron

Stress Conditioner contains 3% complexed iron producing a prolonged and rapid turf colour and used to correct Iron deficiencies.

APPLICATION GUIDELINES

Apply 20-40 liters of Stress Conditioner in 400-600 litres water per hectare.

Half fill the sprayer with clean water, add the appropriate amount of Stress Conditioner, add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.



Dew Disperser

Contains highly active spreading and sticking agents to effectively reduce the surface tension of moisture droplets, preventing the formation of dew on the turf surface

FEATURES AND BENEFITS

- Will disperse dew for 7-10 days depending on conditions
- Reduces the need for early morning switching of greens
- Ideal for use as part of an integrated disease management strategy to minimise the risk of disease
- Can be used to keep greens frost free during winter
- Reduces leaf moisture so will give faster surface drying times following rainfall



HOW DEW DISPERSER WORKS

Using Dew Disperser is a cost-effective method of removing dew compared to labour intensive switching and limits dew formation by utilizing a highly active formulation that works directly on the leaf surface.

Surface moisture on the leaf can provide the optimum habitat for diseases such as Fusarium Patch as it thrives in cool, moist conditions. Dew can also encourage moss growth, especially in the Spring and Autumn. Limiting moisture with the use of Dew Disperser on the leaf surface will minimise the spread of the pathogen and reduce infection rates.

Dew Disperser is a concentrated formulation of specially selected surfactants. The surfactants have a twin mode of action; firstly, they are very effective at reducing the surface tension of water molecules thus preventing dew formation. Secondly, they have a very strong binding capacity, which enables them to attach to the surface of the leaf giving superior longevity to other dew control products.

Dew Disperser is most effective when applied to a dry turfgrass surface and will disperse dew for up to 10 days after application. This may vary due to many factors such as dampness of grass at the time of application, temperature, severity of dew, mowing frequency and type of turfgrass treated.

APPLICATION GUIDELINES

- Apply 10 litres of Dew Disperser in 300-400 litres water per hectare.

Timing

The product may be used at any time of the year providing the turf surface is dry and rainfall is not imminent. Dew Disperser is most effective when applied to dry grass prior to dew formation and when mowing regimes are at a minimum. This product is not recommended to be tank mixed with any additional products.



Water Conditioner

A concentrated formulation containing a proprietary blend of water conditioning agents, acidifying agents and pH buffers

FEATURES AND BENEFITS

- Improved efficacy of turf management products
- Highly cost effective
- Prevents “lock-up” in hard water
- Improved pesticide uptake
- Reduces breakdown of expensive pesticides
- Improves tank mix compatibility

HOW WATER CONDITIONER WORKS

Many turf management products are very susceptible to the quality of the water they are sprayed in. Water which is hard or with high pH can dramatically reduce the effectiveness of such turf management products.

Water conditioners effectively reduce the pH, neutralize the cations in hard water and buffer the solution allowing all the active ingredients to remain active without losses. More and more pesticides and herbicides are recommending the use of a water conditioner due to alkaline hydrolysis.

Applying hard water sensitive products in untreated spray water can result in losses of effective pesticide activity of up to 30%.

Larkstel Water Conditioner contains two organic acids, a surfactant system and a water softener. This acidifies the water to the ideal spray pH, treats and softens the water hardness.

APPLICATION GUIDELINES

Application rate is dependent upon water hardness, see the chart below; Typically, 1 litre per 500lts of spray volume will suffice all water hardness qualities.

Hardness Water	Total hardness concentration in (mg/l) as CaCO_3	Application rate ml / 100 L of spray water
Soft- Medium	0–100	50-80ml
Medium - Hard	100 - 200	80 - 180 ml
Hard - Very Hard	200 - 300	180 - 200 ml

Half fill spray tank and begin agitation. Add the correct quantity of Larkstel Water Conditioner for the final water volume. Continue filling the spray tank to the required volume. Add turf management product as directed. Continue agitation while topping up the tank and during spraying.



MULTI ACTION WETTING AGENT

FEATURES AND BENEFITS.

A multi action soil surfactant providing uniform re wetting and water holding capacity of the rootzone 2 in 1 formulation - Combined wetting agent and water conservation agent.

Complete moisture management tool.

Preventative and curative wetting agent for Dry Patch and plant stress symptoms.

Uniform wetting to enhance the management of water, moisture content and air within the rootzone.

Uniformly treats 100% of the rootzone and soil particles.

Improves the water holding capacity of all types of rootzones.

HOW MULTI ACTION WETTING AGENT WORKS?

Multi Action Wetting Agent Contains three surfactant technologies, to ensure the product is a Complete moisture management tool

Uniform Spreading and Penetration

Multi Action Wetting Agent blend of Co Block Polymer surfactants. This provides superior spreading and penetrating properties to ensure the turfgrass surface is dry. Any subsequent irrigation or rainfall naturally penetrates through the upper level into the rootzone.

Water Repellency

The Co Block Polymer surfactant creates a thin interface of water which is attached to every water repellent soil particle site. Soils treated with Multi Action Wetting Agent ensures there is no accumulation of hydrophobic lipids on the soil particles, this restores and maintains a low water repellency rootzone.

Water Conservation

The Co Block Polymer surfactant strongly binds to the sand and soil particles and remains attached through irrigation cycles and heavy rainfall periods. This ensures correct water management within the rootzone enabling a longer period of water conservation and stress reduction on the turfgrass which works simultaneously through irrigation cycles.

Stress Relief through Moisture Management

The Co Block Polymer surfactant ensures sufficient moisture management through any drought period. This ensures the plants roots remain deep and established through drought periods. This conserves water that is lost through surface evaporation while optimizing water.

APPLICATION RATES.

Half fill the sprayer with clean water, add the appropriate amount of Penetrant **Wetting Agent**, add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.

Application rate 20lts per Ha in 600-800lts of water, watering in is optional but not required.



Fairway Wetting Agent + Seaweed & Carbohydrates

An economical treatment of dry patch, drought stress and water repellent soils for golf fairways and sport fields. It's unique formulation provides faster water penetration and water conservation benefits by enabling moisture deeper into the root zone.

FEATURES & BENEFITS.

- Superior control of Dry Patch and enhanced recovery of damaged drought stressed turf.
- Uniformly treats 100% of the rootzone and soil particles.
- Improves the water holding capacity of all types of rootzones.
- Highly concentrated formulation.
- Contains seaweed and carbohydrates to increase root length and encourages root growth in new and established turf.

HOW THE FAIRWAY WETTING AGENT + SEAWEED & CARBOHYDRATES WORK?

An economical product for the prevention and treatment of dry patch, drought stress and water repellent soils for longer grassed areas such as golf fairways and sport fields. Larkstel Fairway Wetting Agent is best applied at 30 day intervals in a managed application programme. It's unique formulation provides faster water penetration, it also has beneficial effects on water conservation by enabling moisture deeper into the root zone.

Wetting Agent

This provides superior spreading and penetration properties to ensure the turfgrass rootzone receives the applied water. Any subsequent irrigation or rainfall naturally penetrates through the upper level into the rootzone with the help of Larkstel Fairway Wetting Agent. There is minimal evaporation loss of subsequent irrigation cycles as the chemistry assists in the downward movement of water by minimizing surface water run off.

Seaweed and Carbohydrates

Larkstel Fairway Wetting Agent contains a highly active source of *Ascophyllum nodosum* seaweed can help produce high quality sports turf with excellent wear and recovery. It increases root length and encourages root growth and development in new and established turf, It can and encourages tillering without excessive shoot growth.

Larkstel Fairway Wetting Agent contains naturally derived simple carbohydrates.

When the plant is under considerable amounts of stress it cannot produce enough carbohydrates itself to meet demands. Larkstel Fairway Wetting Agent provides a source of carbohydrates to provide immediate energy source for the plant to relieve stress symptoms.

APPLICATION RATE.

Application Rate: 10-20lts per ha in 400-600lts of water

Half fill the sprayer with clean water, add the appropriate amount of Larkstel Fairway Wetting Agent plus Seaweed and Carbohydrates, add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.





PENETRANT WETTING AGENT

FEATURES AND BENEFITS.

- Highly effective at reducing the surface tension of water providing superior penetrant properties.
- Achieves deep soil penetration and provides excellent water infiltration rates.
- Reduce surface water and puddling, encourage deep rooting.
- Can be used as a water conservation agent to maximize the effectiveness of irrigation requirements.
- To help with drought management especially on areas that require high irrigation inputs.
- Can be used to assist flushing salts of carbonates in saline root conditions.



HOW PENETRANT WETTING AGENT WORKS?

Penetrant **Wetting Agent** contains a specific blend of surfactant technologies, including spreading and penetrating agents to penetrate through the thatch layer into the rootzone.

Penetrant wetting agent can be used to remove excess moisture away from the playing surface and as a water conservation tool, to ensure irrigation water penetrates through water repellent soils.

Penetrant **Wetting Agent** will limit periods of excess moisture and create a firmer playing surface to aid the playability of the green or football pitch.

Cultural controls can be extremely effective within an integrated disease management strategy. Thatch layers act as a “natural sponge” absorbing and retaining moisture near the surface. This surface water will help aid in the spread of this disease as it will allow for the spores to contact nearby healthy plants.

Limiting moisture with the use of Penetrant wetting agent within the upper surface will minimise the spread of the pathogen and reduce infection rates.

APPLICATION RATES.

Half fill the sprayer with clean water, add the appropriate amount of Penetrant **Wetting Agent**, add the remaining water whilst agitating. Suitable for use in all types of sprayers capable of applying the appropriate volume of water. Apply as a medium to fine spray.



Wetting Agent Tablets + Seaweed

A surfactant tablet for use through hose end tablet applicators.

These are ideal for hand watering high spots or other areas prone to extreme stress.

FEATURES AND BENEFITS

- Improves hand watering.
- Superior control of DryPatch and enhance recovery of damaged drought stressed turf.
- Ideal for spot treatment of hydrophobic root zones.
- Uniformly treats 100% of the rootzone and soil particles.
- Improves the water holding capacity of all types of rootzones.
- Tablet stays intact and dissolves evenly during application.
- Specially formulated for high pressure water systems.
- Reduces summer stress and wilt.
- Contains seaweed to increase root length and encourages root growth in new and established turf.



HOW WETTING AGENT TABLETS + SEAWEED WORK?

Wetting Agent Tablet

A surfactant tablet formulated for use through hose end applicators. These are ideal for hand watering high spots or other areas prone to drought stress and dry patch. These tablets are used in a targeted applications, with a flexible application rate for preventative or curative modes of action. Larkstel Wetting Agent Tablets are designed to help penetrate the water into the hydrophobic areas and rehydrate.

Seaweed

Larkstel Wetting Agent Tablet contains a highly active source of *Ascophyllum nodosum* seaweed to help produce high quality sports turf with excellent wear and recovery. It increases root length and encourages root growth and development in new and established turf, It can and encourages tillering without excessive shoot growth.

APPLICATION RATE.

Place one tablet in the chamber of a hose end applicator.

Screw chamber into position and turn on the water supply, the tablet will dissolve at a pressure of 60-90 psi.

Timing

Apply at any time of the year, when required.

Pack Coverage

Preventative: 1 tablet will treat 3000m² at 5-10 minutes per green.

Curative: 1 tablet will treat 1500m² at 10-20 minutes per green.



Irrigation Tank Tablets + Seaweed

**A surfactant tablet for use in irrigation systems.
Specially formulated for use in storage tanks and irrigation systems to improve
water penetration in water repellent soils.**

FEATURES AND BENEFITS

Improves irrigation water use efficiency.

Superior control of dry patch and enhanced recovery of damaged, drought stressed turf. Ideal for treatment of hydrophobic root zones. Uniformly treats 100% of the rootzone and soil particles. Improves the water holding capacity of all types of rootzones.

Tablet dissolves evenly throughout the tank for consistent application.
Specially formulated for tank systems.
Reduces summer stress and wilt.
Contains seaweed to increase root length and encourage root growth in new and established turf.



HOW IRRIGATION TANK TABLETS + SEAWEED WORK?

Wetting Agent Tablet

A surfactant tablet formulated for use through irrigation systems and storage tanks. These are ideal for ensuring irrigation water reaches high spots or other areas prone to drought stress and dry patch. They will ensure maximum water use efficiency by allowing water to distribute evenly through the rootzone. Larkstel Irrigation Tank Tablets are designed to help penetrate the water into the hydrophobic areas and rehydrate.

Seaweed

Larkstel Irrigation Tank Tablet contains a highly active source of *Ascophyllum nodosum* seaweed to help produce high quality sports turf with excellent wear and recovery. It increases root length and encourages root growth and development in new and established turf. Its use can encourage tillering without excessive shoot growth.

APPLICATION GUIDELINES

Use one 3 kilogram tablet per 2500 litres of irrigation water to treat approximately 1 hectare.

Re-apply every 2-3 weeks during Summer.

Timing

Apply at any time of the year, when required.

Pack Coverage

An estimated coverage of 1 hectare is only a guide and will be affected by water temperature, flow rates and tank size.



Larkstel Associates Limited



Blue Spray Pattern Indicator

Blue Spray Pattern Indicator is specifically formulated for use with pesticides, liquid fertilisers and other speciality sprays. Blue Spray Pattern Indicator is compatible with boom sprayers, knapsacks, pedestrian push sprayers and hand lances.

FEATURES AND BENEFITS.

- Dissolves in seconds to colour the spray solution blue for accurate application.
- Highlights spray overlapping, missed areas, uneven spray patterns and blocked nozzles.
- The blue colour is temporary and fades within 24 hours.
- Drift and volatilisation of the spray solution is reduced.
- Uniform-sized droplets improve application accuracy of the turf management product.

HOW BLUE SPRAY PATTERN INDICATOR WORKS?

Larkstel Blue Spray Pattern Indicator specifically formulated for use with all turf management products including pesticides, liquid fertilizers and other speciality sprays. Blue Spray Pattern Indicator is compatible with boom sprayers, knapsacks, pedestrian push sprayers and hand lances.

Larkstel Blue Spray Pattern Indicator is a concentrated blue pigment which dissolves in seconds to colour the total spray solution blue, ready to be sprayed to ensure accurate application of turf management products.

Larkstel Blue Spray Pattern Indicator highlights overlapping, missed areas, uneven spray patterns and blocked nozzles. The blue colour is temporary and fades within 24 hours and does not permanently stain vegetation, soil, skin and washes off easily.

APPLICATION RATE.

The quantity of Larkstel Blue Spray Pattern Indicator is related to the total water volume in the spray tank. Use at a rate of 200ml per 100lts water volume.

Method Of Use:

Half fill the sprayer with clean water. Add the required amount of Larkstel Blue Spray Pattern Indicator and agitate. Add the amenity turf product to be sprayed and fill tank to desired level with water whilst agitating.





Turf Rise Granular Fertilisers

Available in both **mini** [1 - 2.5mm] and **micro** [1 - 2mm] granules Turf Rise granular have been specially formulated by Angus Horticulture to supply all required nutrients to fine turf throughout the growing season. The micro granules offer an extremely high quality product with the added advantage of better spreading ensuring a more even grass response in both growth and colour.

All products in this range are 100% homogenous, meaning that all nutrients are in each granule thus ensuring excellent results. The range not only contains an ideal balance of N, P & K but also Mg, Fe & Ca and in addition to this we incorporate seaweed into the granules to offer added benefits.

- **Outstanding quality and consistency**
- **Proven products over a number of years**
- **Mini or Micro granules easily applied with uniform nutrient dispersal**
- **Programmed applications supply perfectly balanced major and secondary nutrients**
- **Seaweed incorporated improving root zone and plant health**
- **Homogenous granules**

Spring Rise

10 - 4 - 4 + 8% CaO + 4% MgO + 3% Fe + Seaweed

2.25% nitric nitrogen for a kick start to growth in the spring, 7.75% ammoniacal nitrogen

Rate of Application: 35 - 50g/m² - 1 or 2 applications early in the season

Nutrients applied per m² @ 50g/m² 5g N - 2g P₂O₅ - 2g K₂O + 4g CaO + 2g MgO + 1.5g Fe

25kg bag treats 500 - 714m²

Summer Rise

8 - 0 - 4 + 8% CaO + 2% MgO + Seaweed

Ammoniacal nitrogen

Rate of Application: 35 - 50g/m² - at approx. 4 week intervals during spring & summer

Nutrients applied per m² @ 50g/m² 4g N - 0g P₂O₅ - 2g K₂O + 4g CaO + 1g MgO

25kg bag treats 500 - 714m²

Autumn Rise

3 - 0 - 22 + 6% CaO + 4% MgO + 3% Fe + Seaweed

High potassium to prepare all grasses for winter hardiness

Rate of Application: 35 - 50g/m² - 1 or 2 applications late in the season

Nutrients applied per m² @ 50g/m² 1.5g N - 0g P₂O₅ - 11g K₂O + 3g CaO + 2g MgO + 1.5g Fe

25kg bag treats 500 - 714m²

Turf Rise soluble NPK + Trace Elements are available with superb solubility and are of the highest quality.

Available NPK analyses are:	30-10-10	28-6-12	13-5-30	22-7-22
	19-19-19	15-7-30	12-3-40	11-42-11

All these 8 products contain the following secondary and micro nutrients :			1.6% Magnesium Oxide (MgO)
300mg/kg Boron (B)	200mg/kg Copper (Cu)		1,533mg/kg Iron (Fe)
1,000mg/kg Manganese (Mn)	120mg/kg Molybdenum (Mo)		270mg/kg Zinc (Zn)

best quality, best service, best value



Turf Rise

Feed, Weed & Moss Killer

MAPP 18983 (PCS 06349) is a granular formulation containing 21.73% w/w Iron Sulphate, 0.057% w/w Dicamba and 0.286% w/w 2,4-D and Mecoprop-P for the control of broadleaved weed species and moss on lawns.

Our Feed, Weed and Moss Killer, 'three in one' homogenous mini granules are suitable for most turf areas*. Each granule contains all the nutrients, the moss killer and weed killer. This product is not only an excellent moss killer and effective selective herbicide killing broad leaved weeds in grassed areas it has an excellent nutrition package providing all major and secondary nutrients for the finest of swards. The Ferrous Sulphate not only effectively kills the moss but also provides rapid green up of the grass.

- Provides rapid green up of grass
- Kills many broad-leaved weeds; 3 active ingredients for improved results
- Kills moss
- Easy to apply
- Professional turf care active ingredients
- Extremely effective
- Homogenous granules – all granules contain all ingredients

Turf Rise Feed, Weed & Moss Killer

10 - 2 - 2 + 3% CaO + 8% SO₃ + 8% Fe

Rate of Application: 32g/m² 20kg bag treats 625m²

When to apply: May to August; maximum 2 applications per year

Apply when grass, moss & weeds are actively growing and soil is moist. Do not apply when heavy rain is forecast but if no rain falls within 48 hours then water the product into the lawn.

"The best Feed, Weed and Moss Killer on the market" *green keeper, Harrogate*

*Do not use on newly sown lawns, or newly laid turf until established for six months.

To avoid risk to human health and the environment, comply with the instructions for use.

This product is approved under the PLANT PROTECTION PRODUCTS REGULATION (EC) No. 1107/2009. MAPP No.

pending FOR USE ONLY AS AN AMATEUR LAWN TREATMENT. Read all safety instructions before use.

The Control of Substances Hazardous to Health (COSHH) regulations may apply to the use of this product at work.

best quality, best service, best value



Angus Moss Killer

MAPP 17041 is a granular formulation containing 14.1% w/w iron sulphate heptahydrate (equivalent to 7.7% w/w iron sulphate anhydrous), for the control of moss on lawns

Effectively kills moss in lawns, this lawn sand type product has nitrogen (N) and ferrous sulphate (Fe **SO₄**) blended with high quality kiln dried sand as used by professional green keepers. The nitrogen (N) and iron (Fe) will also serve to green up the grass, promoting chlorophyll production and a resulting harder sward.

- **Provides rapid green up of grass**
- **Kills moss in lawns**
- **Easy to apply**
- **Effective**

Angus Moss Killer 4 - 0 - 0 + 2.8% Fe

Rate of Application: 80g/m² 20kg bag treats 250m²

When to apply: Spring to late summer; maximum 3 applications per year

Apply to lawns when moss is actively growing. Apply only to established turf. 20kg bags

Do not apply during drought or freezing conditions. To avoid drift of granules or dust onto plants, patios or ponds do not apply in windy weather.

Grass should not be cut 3 days before treatment and not cut again until at least 4 days after treatment.

This product is approved under the PLANT PROTECTION PRODUCTS REGULATION (EC) No. 1107/2009. MAPP 17041

FOR USE ONLY AS A HOME GARDEN LAWN TREATMENT – **Always read the label before use and follow instructions**

The Control of Substances Hazardous to Health (COSHH) regulations may apply to the use of this product at work.



Turf Care Granular Fertilisers

The Turf Care Range has been specially formulated by Angus Horticulture to give adequate nutrition to all fine turf throughout the growing season. The products in this range are a balanced complex of granules, manufactured for ease of application, keeping plant scorch to a minimum. The product spreads evenly on exposed areas, whilst monthly applications will help reduce plant stress, with the iron ensuring a rich green colour, and the magnesium along with potassium ensuring good cell structure within the plant, allowing maximum chlorophyll production.

All products in this range are 100% homogenous, meaning that all nutrients are in each granule thus ensuring excellent results. A wide range of formulations mean there is a product for every situation, and we can also manufacture bespoke products on request.

- **Mini (1 - 2.5mm) or micro (0.5 - 1.5mm) granules for superb results every time**
- **Homogenous granules for even nutrient distribution**
- **Wide range of products to suit every situation**
- **Available in 20kg or 25kg bags**

Spring & Summer

12 - 3 - 9 + 2% MgO + 2% Fe

100% of N as ammoniacal

Rate of Application

35 - 50g/m²

Nutrients applied per m² @ 50g/m²

6g N – 1.5g P₂O₅ - 4.5g K₂O + 1g MgO + 1g Fe

25kg bag treats

500 - 714m²

20kg or 25kg bags

High N, Summer

14 - 0 - 7 + 3% MgO + 2% Fe

12.62% ammoniacal N & 1.38% ureic N

Rate of Application

35 - 50g/m²

Nutrients applied per m² @ 50g/m²

7g N – 0g P₂O₅ - 3.5g K₂O + 1.5g MgO + 1g Fe

25kg bag treats

500 - 714m²

20kg or 25kg bags

Autumn & Winter

3 - 0 - 12 + 2% MgO + 2% Fe

100% of N as ammoniacal & K from muriate of potash

Rate of Application

35 - 50g/m²

Nutrients applied per m² @ 50g/m²

1.5g N – 0g P₂O₅ - 6g K₂O + 1g MgO + 1g Fe

25kg bag treats

500 - 714m²

20kg or 25kg bags

best quality, best service, best value



Turf Care Granular Fertilisers

Spring & Summer, Zero P

12 - 0 - 9 + 2% MgO + 2% Fe

100% of N as ammoniacal

Rate of Application

35 - 50g/m²

Nutrients applied per m² @ 50g/m²

6g N – 0g P₂O₅ - 4.5g K₂O + 1g MgO + 1g Fe

25kg bag treats

500 - 714m²

20kg or 25kg bags

High K + Fe

4 - 0 - 8 + 4% Fe

100% of N as ammoniacal

Rate of Application

35 - 50g/m²

Nutrients applied per m² @ 50g/m²

2g N – 0g P₂O₅ - 4g K₂O + 2g Fe

25kg bag treats

500 - 714m²

20kg or 25kg bags

High K + Mg

0 - 0 - 30 + 6% MgO + 12% SO₃

50% of potassium (K) from MOP & 50% potassium (K) from SOP

Rate of Application

40g/m²

Nutrients applied per m² @ 40g/m²

0g N – 0g P₂O₅ - 12g K₂O + 2.4g MgO + 4.8g SO₃

20kg bag treats

500m²

Available as

mini (1-2.5mm)

20kg or 25kg bags

High P mini pre-seeder Tree & Shrub Planting Fertiliser

5 - 15 - 8 + 11% CaO + 6% MgO + 14% SO₃

5% ammoniacal nitrogen

Rate of Application

50 - 75g/m²

Nutrients applied per m² @ 75g/m²

3.75g N – 11.25g P₂O₅ - 6g K₂O + 8.25g CaO + 4.5g MgO + 10.5g SO₃

25kg bag treats

333m² - 500m²

Available as

mini (1-2.5mm)

20kg or 25kg bags

best quality, best service, best value



Turf Care High Iron [Fe] Fine Turf Fertiliser granular

Angus Horticulture has developed a range of conventional granular turf tonics containing high levels of iron (Fe) for use on sports turf. Iron is essential to the plant; it is involved in chlorophyll synthesis, occurring in important proteins and enzymes. Iron (Fe) is also involved in the photosynthetic process and in nitrogen fixation. The availability of iron (Fe) increases with declining pH. Cell division in the developing leaf ceases with iron deficiency.

Our conventional mini granules are homogenous and we are proud to offer among the best plant nutrition products in the market today. *Please note these products may have an adverse effect on moss.*

Balanced N:K + Fe

4 - 0 - 4 + 9% Fe

Rate of Application:	30 - 35 g/m ²	
Nutrients applied per m ² @ 35g/m ²	1.4g N – 1.4g K ₂ O + 3.15g Fe	
25kg bag treats	714 – 830m ²	
Available as	mini (1-2.5mm)	20kg or 25kg bags

Sward Booster

9 - 0 - 0 + 11% Fe

Sand Based Powder

Rate of Application:	30 - 35 g/m ²	
Nutrients applied per m ² @ 30g/m ²	2.7g N + 3.3g Fe	
25kg bag treats	714 – 830m ²	
Available as	mini (1-2.5mm)	20kg or 25kg bags

N, P + High K + Fe

6 - 5 - 10 + 6% Fe

Rate of Application:	35 - 50 g/m ²	
Nutrients applied per m ² @ 50g/m ²	3g N – 2.5g P ₂ O ₅ - 5g K ₂ O + 3g Fe	
25kg bag treats	500 - 714m ²	
Available as	mini (1-2.5mm) or micro (1-2mm)	20kg or 25kg bags

best quality, best service, best value



Turf Care Granular Fertilisers

Angus Horticulture offers a comprehensive range of 2-4mm granular fertilisers of high standard suitable for use on fairways, outfields and sports pitches. We are proud to offer the best granular fertilisers in the UK market for turf and amenity use.

All products in this range are 100% homogenous, meaning that all nutrients are in each granule thus ensuring excellent results. Our wide range of formulations mean there is a product for every situation.

Pre-Seeder	6-9-6	2-4mm granules
Rate of Application:	50g/m ²	
Nutrients applied per m ²	3g N – 4.5g P ₂ O ₅ - 3g K ₂ O	
25kg bag treats	500m ²	20kg or 25kg bags

Spring & Summer	9-7-7	2-4mm granules
Rate of Application:	35 - 50g/m ²	
Nutrients applied per m ² @ 50g/m ²	4.5g N – 3.5g P ₂ O ₅ - 3.5g K ₂ O	
25kg bag treats	500m ² - 714m ²	20kg or 25kg bags

Fairway High N	12-6-6	2-4mm granules
Rate of Application:	35 - 50g/m ²	
Nutrients applied per m ² @ 50g/m ²	6g N – 3g P ₂ O ₅ - 3g K ₂ O	
25kg bag treats	500m ² - 714m ²	20kg or 25kg bags

Autumn Choice	3-12-12	2-4mm granules
Rate of Application:	35 - 50g/m ²	
Nutrients applied per m ² @ 50g/m ²	1.5g N – 6g P ₂ O ₅ - 6g K ₂ O	
25kg bag treats	500m ² - 714m ²	20kg or 25kg bags

High N + P:K	20-8-11	2-4mm granules
Rate of Application:	35g/m ²	
Nutrients applied per m ²	7.35g N – 2.8g P ₂ O ₅ - 3.85g K ₂ O	
25kg bag treats	714m ²	20kg or 25kg bags

best quality, best service, best value



ProloNg® technology

Nitrogen efficiency

ProloNg® fertilisers are formulated to overcome the problem of loss of applied nitrogen (N) by volatilisation, de-nitrification and subsequent leaching and are ideal for all sports turf applications.

*Researchers estimate up to 50% of nitrogen applied worldwide is lost to the environment rather than utilised by plants. The naturally occurring enzyme 'urease' works to break down urea into a form that can volatilise causing a loss of nitrogen. Leaching of nitrate can also be a significant loss and damaging to the environment. **ProloNg® uses technology that actively shields and manages nitrogen in the soil at molecular level.** The shield prevents the action of urease on applied nitrogen and slows nitrification. This allows the plant improved access to stable forms of nitrogen throughout the growing season and without destroying the spectrum of naturally occurring soil bacteria and enzymes. ProloNg® technology is biodegradable, water soluble and leaves no adverse environmental footprint.*

ProloNg®, by preventing nitrification, eliminates lush plant uptake of nitrates. This results in less flushes of unwanted growth, and reduction in soft tissue (stored protein in leaves) and therefore reduced disease susceptibility. ProloNg® manages your nitrogen increasing nitrogen use efficiency, enabling prolonged availability of applied nitrogen and ensuring root zone bio-diversity is maintained.

Benefits of **ProloNg®** include:

- **Prolonged nitrogen availability from single application**
- Improved utilisation and plant take up of applied nitrogen
- **Promotion of tillering, increasing sward density**
- Reduced waste nitrogen resulting in improved cost efficiency and reduced environmental impact by:
 - Preventing volatilisation
 - Slowing down nitrification
 - Preventing leaching
- **Reduces unwanted growth flushes**
- Safe, reduced scorch susceptibility formulations
- **Reduces soft lush growth and disease susceptibility**
- Protects water courses from nitrate pollution (less algae growth in ponds/lakes)
- **Discourages annual grasses in greens (e.g. Poa annua) – promotes perennial grasses**
- Can safely be applied at any time of year when conditions allow
- **Low salt formulations improving root zone environment and enhancing root activity**
- Full range of granule sizes, pricing and formulations, to meet every turf managers requirements
- **Proven technology, with scientific explanation; ProloNg® technology really works!**
- Excellent grass colour

Many times over, users have reported healthier swards of better colour; this is due to the fact that when nitrogen is applied, at whatever time of year, with ProloNg® technology the plant will only assimilate its nitrogen requirements in the form of ammonium. The plant therefore has enough, but not too much nitrogen and is stronger/sturdier, healthier/less susceptible to damage (physical or disease pressure) and of improved appearance. **There's no more requirement for 'artificial green-ups' using harmful products like iron sulphate.**

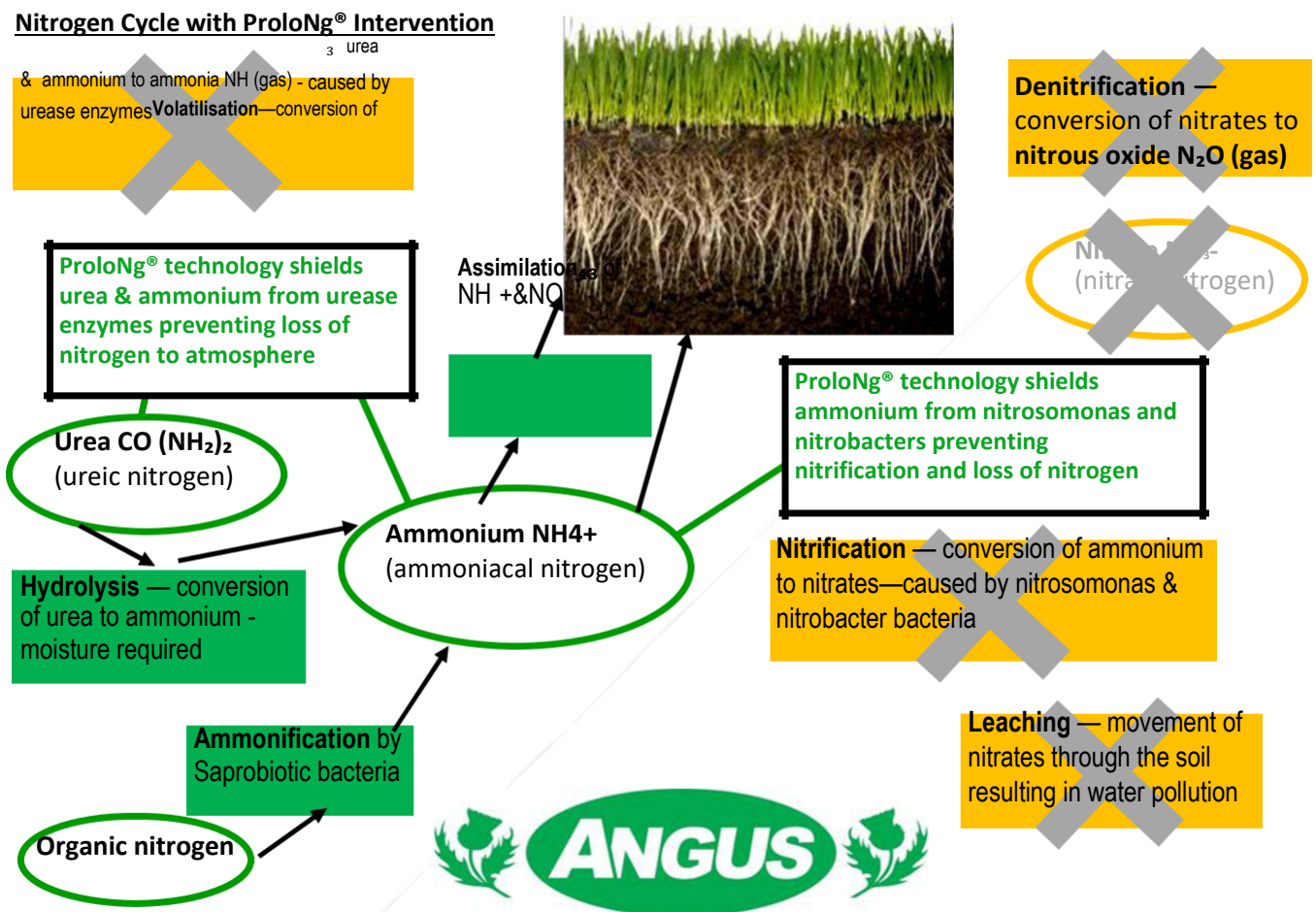
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ProloNg® fertilisers

Nitrogen efficiency

Below is a diagram showing how **ProloNg®** effectively interrupts the nitrogen cycle demonstrating the benefits for turf management.



The Benefits: All applied Nitrogen is utilized by the plant
No N loss to atmosphere or water courses
Long lasting, so less applications required
No lush uptake of Nitrates
Promotes tillering, increasing sward density

economic to budget and
environment protecting environment
and budget labour efficient & cost
saving healthier & stronger plants
improved playing surfaces

The solution: **ProloNg®**

Economically,
Agronomically &
Environmentally the best!



BioActive ProloNg® mini

Nitrogen efficiency

ProloNg® technology in our high quality, homogenous, mini granular fertiliser range, specifically formulated for high quality fine turf. These BioActive ProloNg® mini fertilisers offer:

Low salt formulations

Especially formulated to encourage and maintain healthy root zones, looking after the biota 100% of Nitrogen is treated with ProloNg® technology Safe to use throughout the year

BioActive ProloNg® mini Greens & Tees		16 - 2 – 10 + 3% CaO + 2% MgO + 6% SO₃ 64% of nitrogen (N) as ammonium with ProloNg® technology 36% of nitrogen (N) as urea with ProloNg® technology 100% of potassium from potassium sulphate
*Potential longevity:		spring/summer application, 2-3 months autumn/winter application, 5-6 months
Rates of Application:	50g/m ²	20kg bag treats 400m ²
Nutrients applied per m ² @ 50g/m ²	8g N – 1g P ₂ O ₅ – 5g K ₂ O + 1.5g CaO + 1g MgO + 3g SO ₃ 1-2.5mm granules	

BioActive ProloNg® mini Greens & Tees		12 - 0 - 15 + 4% CaO + 3% MgO + 6% SO₃ + 1% Fe 75% of nitrogen (N) as ammonium with ProloNg® technology 25% of nitrogen (N) as urea with ProloNg® technology 100% of potassium from potassium sulphate
*Potential longevity:		spring/summer application, 8-10 weeks autumn/winter application, 4-5 months
Rates of Application:	50g/m ²	20kg bag treats 400m ²
Nutrients applied per m ² @ 50g/m ²	6g N – 7.5g K ₂ O + 2g CaO + 1.5g MgO + 3g SO ₃ + 0.5g Fe 1-2.5mm granules	

ProloNg® Soluble

ProloNg® Soluble

Greens, Tees, Fairways, Pitches

46-0-0

*Potential longevity:

100% of nitrogen (N) as urea with ProloNg® technology
spring/summer application, 10-12 weeks
autumn/winter application, 5-6 months

Rates of Application:

20kg / ha in 200 litres of water

20kg bag treats 10,000m²

Nutrients applied per m² @ 20g/m²

9.2g N

approx. 1 mm soluble prills

*Longevities quoted are based on recommended application rates & are purely a guide, as plant variety, plant density and environmental conditions, as well as timing of application will dictate plant Nitrogen use and therefore the speed in which applied Nitrogen is utilised.

best quality, best service, best value



ProloNg® mini

Nitrogen efficiency

- High quality homogenous mini granules for greens, tees and all sports surfaces

ProloNg® mini

Spring/Summer Fairway
Sports Pitches

*Potential longevity:

Rates of Application:

Nutrients applied per m² @ 50g/m²

24 - 3 - 7 + 3% CaO

44% of nitrogen (N) as ammonium with ProloNg® technology

56% of nitrogen (N) as urea with ProloNg® technology

100% of potassium from muriate of potash

spring/summer application, 3-4 months

autumn/winter application, 5-7 months

50g/m²

20kg bag treats 400m²

12g N - 1.5g P₂O₅ - 3.5g K₂O

1-2.5mm granules

ProloNg® mini

Tees & Approaches

*Potential longevity:

Rates of Application:

Nutrients applied per m² @ 50g/m²

14 - 1 - 7 + 4% CaO + 3% MgO + 2% Fe

90% of nitrogen (N) as ammonium with ProloNg™ technology

10% of nitrogen (N) as urea with ProloNg® technology

100% of potassium from muriate of potash

spring/summer application, 2-3 months

autumn/winter application, 5-6 months

50g/m²

20kg bag treats 400m²

7g N - 0.5g P₂O₅ - 3.5g K₂O + 2g CaO + 1.5g MgO + 1g Fe 1-2.5mm granules

ProloNg® mini

Spring greens & tees

*Potential longevity:

Rates of Application:

Nutrients applied per m² @ 50g/m²

11 - 5 - 5 + 3% CaO + 8% SO₃

100% of nitrogen (N) as ammonium with ProloNg® technology

100% of potassium from muriate of potash

spring/summer application, 8-10 weeks

50g/m²

20kg bag treats 400m²

5.5g N - 2.5g P₂O₅ - 2.5g K₂O + 1.5g CaO + 4g SO₃

1-2.5mm granules

ProloNg Fairway High N

12-6-6 + 3% SO₃

Spring/Summer

*Potential longevity:

Rates of Application:

Nutrients applied per m² @ 50g/m²

Fairways & Sports Pitches

10 - 12 weeks

35-50g/m²

20kg bag treats 571 - 400m²

6g N - 3g P₂O₅ - 3g K₂O

*Longevities quoted are based on recommended application rates & are purely a guide, as plant variety, plant density and environmental conditions, as well as timing of application will dictate plant Nitrogen use and therefore the speed in which applied Nitrogen is utilised.

best quality, best service, best value



BioActive ProloNg[®] fairway + sports pitches

Nitrogen efficiency

- Homogenous 1-3mm granules for good granule/nutrient distribution
- Ideal for fairways, outfields & sports pitches
- Low salt formulation for healthy root zones

BioActive ProloNg[®] fairway & sports pitches **18 - 2 - 18 + 2% CaO + 8% SO₃**

100% of nitrogen with ProloNg[®] technology; 12% ureic, 6% ammoniacal
 100% of potassium from potassium sulphate – low salt formulation
 Spring/Summer, 3-4 months or autumn/winter, 6-8 months

*Potential Longevity:

Rate of Application: 50g/m² 20kg bag treats 400m²

Nutrients applied per m² @ 50g/m² 9g N – 1g P₂O₅ - 9g K₂O + 1g CaO + 4g SO₃ 1-3mm granules

- Blended 2-4mm granules
- Ideal for fairways, outfields & sports pitches
- Low & reduced salt formulations for healthy root zones

BioActive ProloNg[®] Pre-Seeder **12 - 10 - 18 + 4% MgO + 12% SO₃ + humates + seaweed**

Blended Pre-seeder

80% of Nitrogen as urea with ProloNg[®] technology & 20% of N as ammoniacal
 100% of Potash from Potassium Sulphate – low salt formulation
 Spring/Summer, 6-8 weeks or autumn/winter, 4+ months

*Potential Longevity:

Rate of Application: 50g/m² 20kg bag treats 400m²

Nutrients applied per m² @ 50g/m² 6g N – 5g P₂O₅ - 9g K₂O + 2g MgO + 6g SO₃ 2-5mm granules

BioActive ProloNg[®] Grow-In **20 - 4 - 20 + 3% CaO + 1.5% MgO + 8% SO₃ + seaweed**

92% of nitrogen as urea with ProloNg[®] technology & 8% of N as ammoniacal
 52% of potassium from sulphate of potash – reduced salt formulation
 Spring/Summer, 2-3 months or autumn/winter, 5-6 months

*Potential Longevity:

Rate of Application: 50g/m² 20kg bag treats 400m²

Nutrients applied per m² @ 50g/m² 10g N – 2g P₂O₅ - 10g K₂O + 1.5g CaO + 0.75g MgO + 4g SO₃ 2-5mm granules

*Longevities quoted are based on recommended application rates & are purely a guide, as plant variety, plant density and environmental conditions, as well as timing of application will dictate plant Nitrogen use and therefore the speed in which applied Nitrogen is utilised.

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BioActive ProloNg®

Nitrogen efficiency

BioActive ProloNg® Just N

46-0-0

100% of nitrogen as urea with ProloNg® technology
spring/summer application, 6-8 months

*Potential Longevity:

Rate of Application: 50g/m²

20kg bag treats 400m²

Nutrients applied per m² @ 50g/m²

23g N

2-5mm granules

BioActive ProloNg® s/s high N

28 - 3 - 15 + 1.5% CaO + 1% MgO + 5% SO₃

96% of nitrogen as urea with ProloNg® technology & 4% of N as ammoniacal
52% of potassium from sulphate of potash – reduced salt formulation
spring/summer application, 4-5 months

*Potential Longevity:

Rate of Application: 50g/m²

20kg bag treats 400m²

Nutrients applied per m² @ 50g/m²

14g N – 1.5g P₂O₅ – 7.5g K₂O + 0.75g CaO + 0.5g MgO + 2.5g SO₃ **2-5mm**

BioActive ProloNg® Late Summer

16 - 5 - 25 + 3.5% CaO + 1.5% MgO + 12% SO₃

88% of nitrogen as urea with ProloNg® technology & 12% of N as ammoniacal
52% of potassium from sulphate of potash – reduced salt formulation
September application, 4-6 months

*Potential Longevity:

Rate of Application: 50g/m²

20kg bag treats 400m²

Nutrients applied per m² @ 50g/m²

8g N – 2.5g P₂O₅ – 12.5g K₂O + 1.75g CaO + 0.75g MgO + 6g SO₃ **2-5mm**

BioActive ProloNg® High K

15 - 0 - 25 + 4% CaO + 3% MgO + 10% SO₃ + seaweed

100% of nitrogen with ProloNg® technology
57.65% of potassium from sulphate of potash – reduced salt formulation
Spring/Summer, 6-10 weeks or autumn/winter, 5-6 months

*Potential Longevity:

Rate of Application: 50g/m²

20kg bag treats 400m²

Nutrients applied per m² @ 50g/m²

7.5g N – 0g P₂O₅ – 12.5g K₂O + 2g CaO + 1.5g MgO + 5g SO₃ **2-5mm granules**

BioActive ProloNg® Autumn High K

10 - 0 - 30 + 7% CaO + 2% MgO + 10% SO₃ + seaweed

100% of Nitrogen with ProloNg® technology
52% of Potassium from Sulphate of Potash – reduced salt formulation
October application, 5-6 months

*Potential Longevity:

Rate of Application: 50g/m²

20kg bag treats 400m²

Nutrients applied per m² @ 50g/m²

5g N – 0g P₂O₅ – 15g K₂O + 3.5g CaO + 1g MgO + 5g SO₃ **2-5mm granules**

*Longevities quoted are based on recommended application rates & are purely a guide, as plant variety, plant density and environmental conditions, as well as timing of application will dictate plant Nitrogen use and therefore the speed in which applied Nitrogen is utilised.

best quality, best service, best value



Turf Rise MU

Slow Release Nitrogen with Methylene Urea

For many years Angus Horticulture has manufactured granular fertilisers containing methylene urea (MU), these products have proved popular and successful in many situations where an extended availability of nitrogen (N) is required. They're used on greens, tees and approaches as well as fairways and sports fields.

- Methylene urea (MU) reduces the loss of available nitrogen for plants
- Reduces potential of nitrate ground water pollution
- Increases natural soil/root zone fertility (source of organic carbon)
- Reduces phytotoxicity and scorch potential
- Rapid root development
- Long lasting nitrogen up to 24 weeks
- Nitrogen availability is synchronized with plant demand
- Less nitrogen is lost to leaching and volatilisation, which reduces environmental impact
- Predictable results for healthy, green grass plants
- This range complements our ProloNg™ range of nitrogen efficient fertilisers
- Very low salt index

Nitrogen sources:

Nitric N is immediately available to the plant and offers a quick response. Susceptible to leaching, nitrates are easily lost to the environment with damaging effects. Lush uptake of nitrates assimilated by the plant means that the grass plant will be more prone to disease due excess proteins stored in the leaf. The use of Turf Rise MU will substantially reduce these problems.

Ammonium N is plant available and unlike nitrates will only be assimilated when the plant requires the nitrogen. Nitrification converts ammonium to nitrates. Ammonium is subject to volatilization.

Urea while plant available as a foliar spray through the foliage, isn't plant available in the root zone. Hydrolysis takes place with the presence of soil moisture converting urea to ammonium. Urea is also subject to volatilisation – loss of N to the atmosphere.

Methylene urea (MU) on the other hand is an extremely safe way of feeding nitrogen to plants offering a truly controlled release pattern over a period of weeks. The mineralization of MU nitrogen to ammonium depends on the soil micro-biology. Our MU, rather than inhibiting the activity of the microbes, improves the natural fertility, increasing and sustaining the population of beneficial micro-organisms.

The environmental conditions (temperature & moisture) that affect the growth and activity of the grass plant also regulate the activity of the micro-organisms. This means that the MU nitrogen is made available at the time when the grass plant most requires it for optimal root and shoot development.

Turf Rise MU

55% of N as MU 12/18 week*

15 - 1 - 15 + 1% MgO + 2.5% CaO + seaweed

ammoniacal N 6.75%, ureic N 8.25% including 8.25% N as MU
50% of potassium from potassium sulphate

Rate of Application:

35-50g/m²

20kg bag treats 400-571m²

Nutrients applied per m² @ 50g/m²

7.5g N – 0.5g P₂O₅ – 7.5g K₂O + 0.5g MgO + 1.25g CaO

1-2.5mm granules

suitable for greens, tees and all sports turf

**Longevities quoted are based on recommended application rates & are purely a guide, as plant variety, plant density and environmental conditions, as well as timing of application will dictate plant Nitrogen use and therefore the speed in which applied Nitrogen is utilised.*

Angus Horticulture's Turf Rise MU promotes high quality & healthy grass combined with encouraging healthy micro biology in your root zone.

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Turf Rise SRN Liquid Fertilisers

Slow Release Nitrogen (SRN) Fertiliser in Liquid Formulation

A highly efficient slow release nitrogen fertiliser, suitable for application on all fine turf and sports fields. **Turf Rise SRN** liquid fertilisers offer a range of formulations with 60% of the nitrogen (N) in each product being slow release (MU).

Turf Rise SRN liquid fertilisers provide genuinely slow release nitrogen for worry-free foliar application and long lasting root zone treatment. Key features and benefits of these outstanding products are:

- high quality liquids with near neutral pH and non-hazardous
- **promotes vigorous rooting and dense swards**
- easily applied via overhead irrigation or in low volume sprays with no scorching or burning of sensitive leaf tissues
- provides 8-12 weeks gradual release of nitrogen following application without unwanted flushes of grass growth
- **gives improvements in both leaf and root size - treated plants 'green-up' fast and maintain an attractive appearance for weeks afterwards**
- resists leaching in soil and loss of nitrogen through volatilisation and is rapidly absorbed by treated leaves and roots
- **assists in maintaining green leaf area in drought stressed plants and can help improve the uptake of other nutrients or foliar spray products**
- has tank mixing capability (avoid mixing with acidic products), always bucket test first
- **low salt formulations to protect roots and root zone environment**
- discourages thatch development
- **source of carbon to help and increase populations of beneficial microbes in the root zone/soil**
-

Turf Rise SRN Liquid fertilisers are available in 4 different formulations:

28 - 0 - 0 18 - 3 - 6 + TE 15 - 0 - 10 + 0.2% Fe 12 - 0 - 15 + TE

All 4 formulations have all nitrogen (N) as ureic N and 60% of N as short chain urea polymer, slow release N

Application rates: 25 – 75 litres in 300 -600 litres of water / ha

Available in 10, 200 & 1,000 litre containers

Low chloride potassium (K) and complexed iron (Fe) is used where included in formulations. Formulations containing trace elements (TE) contain: 0.01% CaO + 0.01% Fe + 0.04% Mn + 0.04% Zn & traces of Mg, B & Cu

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Turf Care Liquid standard NPK

Our range of **Turf Care Liquid Standard NPK** fertilisers has the perfect formulation product for every season. They are manufactured on-site using high quality raw materials. Using liquid fertilisers makes feeding through irrigation or spray equipment very easy.

Product	Analysis	Application Rates
Turf Care 18-0-10 + seaweed High N with K	18 - 0 - 10 + seaweed & humates Ureic nitrogen for foliar uptake and after hydrolysis readily available in the root zone too. Chloride free potassium	25 - 75 litres/ha in 300-600 litres of water
Turf Care 3-0-20 High K with N	3-0-20 Ureic nitrogen for foliar uptake and after hydrolysis readily available in the root zone too. Chloride free potassium	25 - 75 litres/ha in 300-600 litres of water
Turf Care 18-5-10 High N with P & K	18-5-10 Ureic nitrogen for foliar uptake and after hydrolysis readily available in the root zone too. Chloride free potassium	25 - 75 litres/ha in 300-600 litres of water
Turf Care 6-2-12 + seaweed High K with N & P	6 - 2 - 12 + seaweed Ureic nitrogen for foliar uptake and after hydrolysis readily available in the root zone too. Chloride free potassium	25 - 75 litres/ha in 300-600 litres of water
Turf Care 12-0-4.5 High N +K with seaweed & humates	12 - 0 - 4.5 + seaweed & humates 10.75% ureic nitrogen (N) for foliar uptake and after hydrolysis readily available in the root zone. 1.25% nitrate nitrogen (N) for immediate uptake. Chloride free potassium	25 - 75 litres/ha in 300-600 litres of water
Turf Care 14-3-7	14-3-7 Ureic nitrogen for foliar uptake and after hydrolysis readily available in the root zone too. Chloride free potassium	25 - 75 litres/ha in 300-600 litres of water
Turf Care 10-0-12.5	10 - 0 - 12.5 + seaweed & humates Ureic nitrogen for foliar uptake and after hydrolysis readily available in the root zone too. Chloride free potassium	25 - 75 litres/ha in 300-600 litres of water

Available in 10, 200 & 1,000 litre containers

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Angus ChelTE™

A fine quality, highly soluble blend of soluble chelated trace elements for use on any sports turf to avoid or correct deficiencies. Contains secondary and trace elements for a superb package providing

- **Improved plant health and tolerance to stress and pressure from disease**

Angus ChelTE™

Contains:

high quality water soluble formulation of chelated trace elements

Magnesium (Mg), Sulphur (S), Boron (B), Copper (Cu), Iron (Fe), Manganese (Mn), Molybdenum (Mo), Zinc (Zn)

Application rates:

1kg / ha in a minimum of 100 litres of water

Apply when required

Available in 25kg bags

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Iron Sulphate

The best iron/ferrous sulphate on the market! Iron is important to the plant; it is involved in chlorophyll synthesis, occurring in important proteins and enzymes. Iron is also involved in the photosynthetic process and in nitrogen fixation. The availability of Fe increases with declining pH. Iron deficiency in developing leaves prevents cell division and therefore growth. Please note these products will have an adverse effect on moss.

- **Hardens sward reducing susceptibility to disease and cold damage**
- **Grass responds quickly turning a beautiful dark green colour**
- **Discourages moss formation and worm activity**

Ferrous Sulphate Heptahydrate (20) wet 17.6% Fe

Application: 2 - 5 g/m² [20 – 50 kg/ha in 600 – 2000 litres of water]

25kg bag treats: 1250m² - 1.25ha

- Very easily dissolved in water for easy application
- No anti-caking agent, so totally soluble

Quickfloc S

Ferrous Sulphate Heptahydrate (20)

19.5% Fe + 12% S + Mg, Ca & Mn

Application: 20 – 50kg/ha in 600 – 2000 litres of water [2 – 5g/m²]

25kg bag treats: 1250m² - 1.25ha

- Soluble for easy application dissolved in water
- Micro granule; so totally flowable and easy to handle

Ferrogranul 20

best quality, best service, best value



Lawn Sand

Our Lawn Sands are the finest on the market. Using specially graded and dried sand we blend in the Nitrogen (N) and Iron (Fe) using high quality products from the UK and Europe.

- **Spread more easily**
- **Are less moist**
- **Contain more Fe than most of our competitors**
- **Lower application rates than many of our competitors**
- **More economical to use**
- **Less handling**
- **More effective than others**

Choice of formulations and we can manufacture bespoke products, adding other nutrients where required.

Lawn Sand, High Iron

3 - 0 - 0 + 7% Fe

Rate of Application:

60g/m²

25kg bag treats:

416m²

NB: Some of our competitors say their lawn sand contains 7% Fe, however some of these have been found to contain 7% Ferrous Sulphate, which is equal to approx. 1.4% Fe – you have been warned!

Lawn Sand

3 - 0 - 0 + 3% Fe

Rate of Application:

120g/m²

25kg bag treats

178m²

NB: Products containing iron sulphate will stain hard surfaces and are damaging to moss.

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Angus Liquid Iron Products

A unique range of high quality liquid iron products for use on all sports and non-sports grass surfaces. Iron (Fe) is an important plant nutrient (trace element) because it is crucial for chlorophyll production and therefore enhances leaf colour. All these products used as part of a full nutrition programme will assist

- **promotion of strong healthy grass of good colour**
- **and increase stress tolerance within the plant**

Chelated Iron

chelated with EDTA for maximum efficiency, concentrated formula with low application rates; use for deficiency prevention or correction

Application rates: 5 -10 litres / ha in 300 - 500 litres of water Apply when required

Angus Sea Iron

complexed, fast acting formulation giving long lasting green-up for all turf surfaces 6% chelated iron + Mg + S + seaweed Continues to work in low temperatures – rapid uptake – excellent colour

Application rates: 20 - 30 litres / ha in 300 - 500 litres of water Apply throughout the year

Angus FeN™

5% N + 5% Fe (iron) w/w complexed, non-staining formulation offering quick response and long lasting green-up for all turf surfaces

Application rates: 20 - 40 litres / ha in 300 - 500 litres of water Apply throughout the year

Angus 6 Iron

low level, chelated iron (Fe) for affordable, efficient uptake and quick response 6% chelated iron w/v

Application rates: 20 - 40 litres / ha in 300 - 500 litres of water Apply throughout the year

Angus Complexed Iron

6% Fe (iron) w/v complexed ferrous sulphate solution

Application rates: 20 litres / ha in 400 litres of water Apply during growing season

Angus Straight Iron

ferrous sulphate solution for low cost green up 6% Fe (iron) w/v

Application rates: 10 - 20 litres / ha in 300 - 500 litres of water Apply throughout the year

**Always perform a bucket test to ensure compatibility before tank mixing. Products available in 10, 200 & 1,000 litres containers.*

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Angus BioActive Products

Angus Horticulture have been at the forefront of the move to natural turf management and now have many years of experience in formulating, producing and using what we now call **Angus BioActive Products**. While not advocating the complete suspension of chemical nutrients we do believe, and indeed have proved, that it is possible to significantly reduce chemical inputs and in particular fungicides are frequently not required at all.

Using **Angus BioActive Products** as part of a planned programme for grass management enables sports turf managers to improve sward quality, plant health, playing surface and establishment of newly seeded areas. The range of products is now selling throughout Europe and word of mouth is promoting continually increased sales for this outstanding range of products.

Working with nature, encouraging natural biology to develop and thrive is where **Angus BioActive Products** **work best. Once developing these fungal and bacterial colonies it's important to protect and nurture this** natural life that so improves our root zones, plant health and nutrient availability. Angus Horticulture produce a range of reduced and low salt fertilisers that ensure the best possible outcome for plant and microbial life.

The next few pages (p.25 – 40) of the brochure detail **Angus BioActive Products** and pages 12 - 18 feature our reduced and low salt **BioActive ProloNg®** (micro, mini & 2-4mm) and **Turf Rise MU** fertilisers.

BioActive TE

A blend of chelated trace elements complexed with carbohydrates and humates. Using natural chelating compounds ensures these important trace elements are efficiently available to the plant. Often overlooked, trace elements (micro nutrients) are essential to all plants and providing a proportional balance of each of these nutrients helps to:

- Enhance plant colour
- Maintain plant health
- Improve disease resistance and stress tolerance
- Increase rooting and aid establishment of new turf grass surfaces
- Provide necessary nutrient for plant auxin and enzyme production and metabolism
- Prevent harmful side effects caused by micro nutrient deficiencies

BioActive TE

Blend of chelated trace elements complexed with carbohydrates and humates

Contains proportionate levels of:

boron (B), copper (Cu), iron (Fe), manganese (Mn), zinc (Zn)

And traces of:

calcium (Ca), sulphur (S) and molybdenum (Mo)

As well as:

0.3% potassium (K), carbohydrates, humic & fulvic acid and seaweed

Application rates:

20 - 40 litres / ha in 300 - 500 litres of water

Apply when required

Available in 10 litre containers

best quality, best service, best value



BioActive **Invigo™** & **Invigo™ Plus**

These homogenized blends of plant extracts provide a superb organic based feed for all grass surfaces with the added advantage of the inclusion of iron (Fe) complexed with carbohydrates and humates. Formulated with more than 95% (Invigo) or 75% (Invigo Plus) organic or natural raw materials, providing both readily available and slow release macro and secondary nutrients.

- Improves turf density, root density and enhances plant colour
- Enhanced plant uptake of all major nutrients for strong plant growth
- Encourages healthy microbiology in the turf root zone environment
- Improves disease resistance & stress tolerance
- Fast recovery times
- Low salt formulation
- Safe & ideal for regular application throughout the growing season

BioActive **Invigo™**

7-2-3 + TE, humates & carbohydrates

Contains (w/v):

7% nitrogen (N), 2% phosphorus pentoxide (P₂O₅), 3% potassium (K₂O), 0.73% calcium oxide (CaO), 0.12% magnesium oxide (MgO), 0.94% sulphur trioxide (SO₃), 0.01% iron (Fe)

As well as:

Carbohydrates (25% sugars), humic & fulvic acid (>2.4% humic substances)

Application rates:

50 - 150 litres / ha in 300 - 500 litres of water

Nutrients supplied per ha @ 75lt/ha:

5.25g N, 1.5g P₂O₅, 2.25g K₂O + 0.55g CaO + 0.09g MgO + 0.7g SO₃

BioActive **Invigo™ Plus**

7-0-3 + TE, humates & carbohydrates

Contains (w/v):

7% nitrogen (N), inc. 50% of N from MU, 3% potassium (K₂O), 0.6% calcium oxide (CaO), 0.5% magnesium oxide (MgO), 1.2% sulphur trioxide (SO₃), 0.01% iron (Fe)

As well as:

Carbohydrates (25% sugars), humic & fulvic acid (>1.7% humic substances)

Application rates:

25 – 50 litres / ha in 300 - 500 litres of water

Nutrients supplied per ha @ 50lt/ha:

3.5g N, 1.5g K₂O + 0.3g CaO + 0.25g MgO + 0.6g SO₃

Available in 10, 200 & 1,000 litre containers

SG: 1.25 – 1.35

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BioActive FORMULA GREEN™

With the success of the Angus **BioActive** range of products and the increased adoption of our natural methodology has come the demand for a product that combines the best of our range in to a single product. At our customers request we have formulated this concentrated, high quality blend and labelled it **FORMULA GREEN™**.

This homogenized blend of plant (inc. algae & fungi) extracts with a few low salt additives provide the base for any natural methodology programme or a superb tonic for any sports turf situation.

- **Contains the benefits of:**
 - **Angus FeN™** (p.23)
 - **BioActive TE** (p.25)
 - **BioActive MolTurf®** (p.28)
 - **Angus BioActive Seaweed** (p.29)
 - **Angus Humic & Fulvic Acids** (p.30)
 - **Angus Amino Acids** (p.40)

BioActive FORMULA GREEN™

Contains (w/v):

0.5% magnesium oxide (MgO), 1% iron (Fe), 0.01% boron (B),

As well as:

**0.03% Copper (Cu), 0.06% Manganese (Mn), 0.02% Zinc (Zn), + trace Mo
Carbohydrates (>20% sugars), Humic & Fulvic Acid (>4% humic substances)
Amino Acids (0.24%), Seaweed Extract (10%)**

Application rates:

40 litres / ha in 200 - 300 litres of water

Available in 10 litre containers; shake well before use

SG: tbc

In late autumn & winter consideration should be given to adding a little extra of the following products to the tank mix:

Angus FeN™ (1 litre/ha),
Angus Humic & Fulvic Acid (3 litres/ha) and
BioActive MolTurf® (6 litres/ha).

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BioActive MolTurf®

Concentrated Carbohydrates

Faster playing surfaces, increased stress resistance & recovery

BioActive MolTurf® is our award winning liquid carbohydrate. **BioActive MolTurf®** contains naturally sourced carbohydrates and trace elements that energise the turf grass plant metabolism and stimulates microbial activity around the root and leaves. **BioActive MolTurf®** is a natural carbon balancer that increases the efficiency of nitrogen utilisation allowing less nitrogen to be applied. **BioActive MolTurf®** provides a quickly available carbon food source for microbes that live around turf grass roots, thus helping to reduce fungicide and fertiliser applications. Use on all turf grass surfaces and root zones for faster playing surfaces.

Main benefits of **BioActive MolTurf®** on turf grass surfaces:

- **Faster and improved playing surface**
- **Promotes the availability and ready uptake of mineral nutrients**
- **Reduced applications of fertilisers**
- **Increased ability to resist and recover from environmental stresses, e.g. freezing temperatures, extended heat etc.**
- **Reduced disease susceptibility**
- **Regular use can result in less nematode damage**
- **Helps to reduce thatch build up by improving the efficiency and recycling of nitrogen and carbon by soil microbes**
- **Contains useful levels of furfural (typically 50mg/kg), high in sugars (> 40%)**



Application guidelines:

10 - 20 litres/ha when tank mixed with **BioActive Invigo™** and/or with **Angus BioActive Seaweed** in 300 - 400 litres of water

20 - 30 litres/ha when used on its own in 500 - 600 litres of water

Apply every 2-3 weeks during March and April and before the first fertiliser application, and during September and October after autumn renovations.

Apply once per month during summer and winter months.

Available in 10 litre containers

best quality, best service, best value



BioActive Seaweed

Product Approved for Restricted Use in Organic Systems by SOPA (Certificate No.: S1363E/0420/01).

This concentrated liquid seaweed extract derived from *Ascophyllum nodosum* without the use of chemicals is an industry leader. A great source of plant nutrients and organic carbon, **BioActive Seaweed** promotes strong & vigorous growth, excellent root development as well as increasing the plants ability to withstand pressure from disease and environmental stresses.

- Promotes strong root development
- Improves plants tolerance to environmental and biological stresses
- Encourages activity of beneficial microbes
- Results in stronger & healthier plants
- Concentrated natural formulation for best results
- Low application rates for greater affordability
- Increases plant vigour

BioActive Seaweed 30% solids

Typical analysis (w/v): 0.58% nitrogen (N), 0.29% phosphorus pentoxide (P₂O₅), 1.02% potassium (K₂O),
As well as: magnesium (Mg), boron (B), copper (Cu), iron (Fe), manganese (Mn), molybdenum (Mo), zinc (Zn)

And: alginates, amino acids, auxins, cytokinins, gibberellins, vitamins, betaines, fucoidan, laminarin, mannitol

Application rates: 3 - 5 litres / ha in 300 - 500 litres of water

Alginates (>24% content typically) improve soil structure; increasing humates, forming crumb structure, increasing soil aeration & aerobic bacteria, increases moisture retention. With mannitol (>10% content typically) a carbohydrate, trace elements (present in seaweed and the soil) are chelated and made available to plants. **Amino acids** (alanine, valine, glycine, isoleucine, serine, tyrosine & stress protecting amino-betaines); these Natural L-isomers are used by plants directly in the production of proteins. **Auxins** (>90 ppm content typically), plant hormones are essential for plant body development, enabling a plant to react to external conditions. Auxins stimulate cell elongation & promote root initiation. **Cytokinins** (>285 ppm content typically) promote cell division and plant growth. **Gibberellins** (>150 ppm content typically) regulate plant growth & enzyme production, breaking dormancy and stimulating cell elongation causing plants to grow taller. **Vitamins**: A, B1, B2, B3, B5, B12, C, D, E, K, choline & carotene. **Betaines** (>0.04% content typically) aid plants to cope with stresses such as cold, heat, water deficient or high salt conditions and increases the tolerance of plants to abiotic stress. **Fucoidan** (>8% content typically) provides plant protection in strong sunlight and harsh environments. **Laminarin** (>20% content typically) accelerates seed germination and plant growth and elicits defense response in plants reducing infection of the plant by various diseases. **Mannitol** (>10% content typically) increases trace element availability, increases

a plants tolerance to salt and osmotic stress and has a role in a plants response to attack from pathogens; reducing biotic & abiotic stresses. Mannitol decomposes readily & unlike cellulose, **doesn't immobilise Nitrogen**.

Available in 10 litre containers

best quality, best service, best value



**Larkstel Associates
Limited**

Southern Distributor for

Hurrells
Specialist Seeds



Football & Rugby Pitch Grass Seed

Premium Football Pitch Grass Seed & Rugby Grass Seed for ultimate performance. For all levels of club from grassroots to top level premiership clubs and training grounds.

FR.2 Premium Football & Rugby Pitch 100% Ryegrass Grass Seed Mix

20% MONROE Dwarf Perennial Ryegrass
20% EUROCORDUS Dwarf Perennial Ryegrass
30% BERLIOZ Dwarf Perennial Ryegrass
30% EUROPITCH Dwarf Perennial Ryegrass

20 kg per bag

Code

8022

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



FR.3 Contractor Football & Rugby Pitch 100% Ryegrass Grass Seed Mix

30% TURFGOLD Dwarf Perennial Ryegrass
35% ESQUIRE Dwarf Perennial Ryegrass
35% FANCY Dwarf Perennial Ryegrass

20 kg bags

Code

8020

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



FR CSI Premium Football & Rugby Pitch With Creeping Ryegrass Grass Seed Mix

30% CSI CORSICA Creeping Ryegrass
30% EUROPITCH Dwarf Perennial Ryegrass
20% EUROSPORT Dwarf Perennial Ryegrass
20% CHLOE Dwarf Perennial Ryegrass

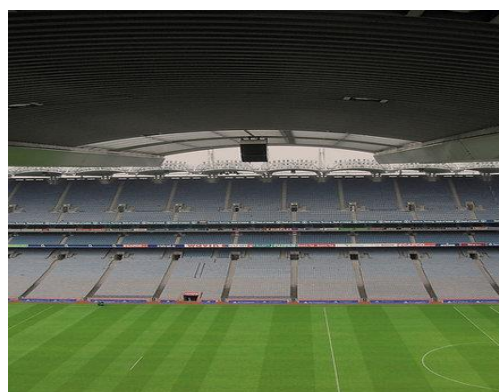
20 kg per bag

Code

8021

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



20kg - Lifesaver Grass Seed Mix

50% Annual Ryegrass Blend
25% TETRADRY Dwarf Perennial Ryegrass - TETRAPLOID
25% AGREEMENT Dwarf PRG - WINTER ACTIVE

20 kg per bag

Code

8103

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



Football & Rugby Pitch Grass Seed Contd.

Coldstart 100 Grass Seed Mix (100% Dwarf Ryegrass)

50% VERMILLION Dwarf Perennial Ryegrass - WINTER ACTIVE

50% AGREEMENT Dwarf Perennial Ryegrass - WINTER ACTIVE

20 kg per bag

Code 8108

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



Cricket Square & Outfield Grass Seed

Premium Cricket Grass Seed for Squares / Wickets & Outfields. From local cricket leagues to top county grounds



CR.1 Premium Cricket Squares Grass Seed Mix

25% EVENTUS Dwarf Perennial Ryegrass

25% CHLOE Dwarf Perennial Ryegrass

25% PENELOPE Dwarf Perennial Ryegrass

25% EUROPITCH Dwarf Perennial Ryegrass

20 kg per bag

Code 8023

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

CR.2 Cricket Outfields Grass Seed Mix

30% TURFGOLD Dwarf Perennial Ryegrass

25% MAXIMA Strong Creeping Red Fescue

25% ARCHIBAL Slender Creeping Red Fescue

15% HIGHNOTE Chewings Fescue

5% HIGHLAND Browntop Bentgrass

20 kg per bag

Code 8024

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



CR.3 Eco Cricket Squares Grass Seed Mix

35% ESQUIRE Dwarf Perennial Ryegrass

30% BARORLANDO Dwarf Perennial Ryegrass

35% FANCY Dwarf Perennial Ryegrass

20 kg per bag

Code 8030

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

Cricket Square & Outfield Grass Seed Contd.

GO.1 General Outfields Grass Seed Mix

30% FIREBIRD Dwarf Perennial Ryegrass
30% MAXIMA Strong Creeping Red Fescue
10% PINAFORE Slender Creeping Red Fescue
20% ANTOINETTE Chewings Fescue
5% MIRACLE Smooth Stalked Meadowgrass
5% HIGHLAND Browntop Bentgrass

20 kg per bag

Code 8028

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



GO.2 General Sport Grass Seed Mix

40% PLATINUM Dwarf Perennial Ryegrass
30% TURFGOLD Dwarf Perennial Ryegrass
30% MAXIMA Strong Creeping Red Fescue

20 kg per bag

Code 8048

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

General Sports Grass Seed

General Sports grass seed mixtures, provide fast growth and true playing surfaces for hardwearing grassed areas. Commonly used at schools, sports clubs and sports complexes.

HM.4 General Amenity / Heavy Duty Grass Seed Mix

50% Dwarf Perennial Ryegrass
50% Strong Creeping Red Fescue

Available in all pack sizes

Code 8004

We recommend sowing this seed at a rate of 35-70g per square metre



Bowling Green Grass Seed

Premium Bowling Grass Seed mixtures that produce fine & dense true playing surfaces. BG.1 is a traditional fescue/bent mix. New concepts include Dwarf Ryegrass, which makes establishment easy & much harder wearing



BG.1 Premium Greens Grass Seed Mix

45% BOGART Chewings Fescue
45% SEROA Slender Creeping Red Fescue
10% CLEEK Browntop Bent

20 kg per bag

Code 8013

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

Bowling Green Grass Seed Contd.

BG.2 Green Baize Bowling Green Grass Seed Mix

25% DICKENS Dwarf Perennial Ryegrass
25% CHARDIN Dwarf Perennial Ryegrass
20% SEROA Slender Creeping Red Fescue
25% DIPPER Strong Creeping Red Fescue
5% HIGHLAND Browntop Bentgrass

20 kg per bag

Code 8047

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



BG.3 Premium Rye Greens Grass Seed Mix (BG3)

25% DICKENS Dwarf Perennial Ryegrass
25% CHARDIN Dwarf Perennial Ryegrass
20% SEROA Slender Creeping Red Fescue
20% HUMBOLDT Chewings Fescue
5% CLEEK Browntop Bentgrass
5% MANOR Browntop Bentgrass

20 kg per bag

Code 8070

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

Golf Course Grass Seed

Premium Golf grass seed for all areas for the course (Golf Green Grass Seed, Golf Tee Grass Seed, Golf Fairway Grass Seed). Supplying top level UK golf courses in the world top 100 to pitch & putts and any venue in-between.



HG.1 Premium All Bent Greens Grass Seed Mix

50% MANOR Bentgrass
50% CLEEK Bentgrass

20 kg per bag

Code 8011A

Sowing rate: 8 grams per m2

Oversowing: 5 grams per m2

HG.2 Creeping Bent Grass Seed Mix

100% COBRA NOVA Creeping Bent

20 kg bags

Code 8012

Sowing rate: 8 grams per m2

Oversowing: 5 grams per m2



Golf Course Grass Seed Contd.



HG.3 Premium Greens Grass Seed Mix (Fescue / Bent)

45% BOGART Chewings Fescue
45% SEROA Slender Red Fescue
10% CLEEK Bentgrass

20 kg per bag

Code 8013

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

HMG Chewings / Bent Grass Seed Mix

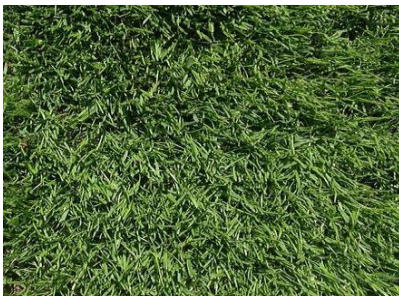
90% BOGART Chewings fescue
10% MANOR Bentgrass

20 kg bags

Code 8019

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



HPG CSI Turf Perennial Greens Grass Seed

30% CSI CORSICA Creeping Ryegrass
30% DICKENS Dwarf Perennial Ryegrass
40% CHLOE Dwarf Perennial Ryegrass

20 kg bag

Code 8064C

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

HPG Turf Perennial Greens Grass Seed Mix

40% CHLOE Dwarf Perennial Ryegrass
40% DICKENS Dwarf Perennial Ryegrass
20% CHARDIN Dwarf Perennial Ryegrass

20 kg bag

Code 8064

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



HM Fescue Grass Seed Mix

25% ARCHIBAL Slender Creeping Red Fescue
25% BEUDIN Slender Creeping Red Fescue
25% HUMBOLDT Chewings Fescue
25% BOGART Chewings Fescue

20 kg per bag

Code 8037

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

Golf Course Grass Seed Contd.

HT.1 Ryegrass Tees Grass Seed Mix

50% RESISTUS Dwarf Perennial Ryegrass

50% FIREBIRD Dwarf Perennial Ryegrass

20 kg per bag

Code 8016

Sowing rate: 35-70 grams per m²

Oversowing: 20-35 grams per m²



HT.2 Non Ryegrass Tees Grass Seed Mix

40% HIGHNOTE Chewings Fescue

20% ANTOINETTE Chewings fescue

20% ARCHIBAL Slender Creeping Red Mixture

10% DAKASHI Smooth Stalked Meadowgrass

10% HIGHLAND Browntop Bentgrass

20 kg per bag

Code 8017

Sowing rate: 35-70 grams per m²

Oversowing: 20-35 grams per m²

HT.4 Ultimate Tees / Divot Grass Seed Mix

40% CSI CORSICA Creeping Ryegrass

30% AGREEMENT Winter Active Dwarf Perennial Ryegrass

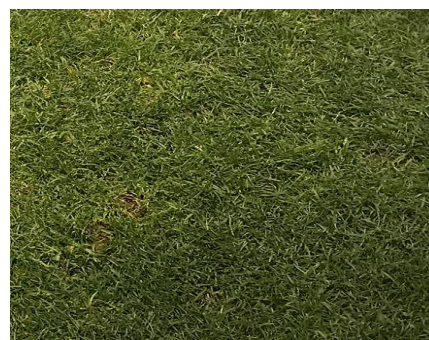
30% CHARDIN Dwarf Perennial Ryegrass

20 kg per bag

Code 8011

Sowing rate: 35-70 grams per m²

Oversowing: 20-35 grams per m²



HF.1 Non Rye Grass Fairways Seed Mix

30% RIDU Hard Fescue

25% ARCHIBAL Slender Creeping Red Fescue

25% MAXIMA Strong Creeping Red Fescue

20% HIGHNOTE Chewings Fescue

20 kg per bag

Code 8014

Sowing rate: 35-70 grams per m²

Oversowing: 20-35 grams per m²

Golf Course Grass Seed Contd.

HF.2 Ryegrass Fairways Grass Seed Mix

20% CHLOE Dwarf Perennial Ryegrass
25% CSI CORSICA Creeping Ryegrass
20% ARCHIBAL Slender Creeping Red Fescue
20% MAXIMA Strong Creeping Red Fescue
15% HIGHNOTE Chewings Fescue

20 kg per bag

Code 8015

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



HR.1 Golf Roughs Grass Seed Mix

30% RIDU Hard Fescue
40% MAXIMA Strong Creeping Red Fescue
15% CAPRICCIO Chewings Fescue
15% PINAFORE Slender Creeping Red Fescue

20 kg per bag

Code 8018

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

HM Tri-Fescue Grass Seed Mix

40% BOGART Chewings Fescue
30% DIPPER Strong Creeping Red Fescue
30% ARCHIBAL Slender Creeping Red Fescue

20 kg per bag

Code 8038

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



Tennis Court Grass Seed

Premium Tennis Court Grass Seed Mixtures that produce a hardwearing, fine, dense & true playing surfaces. (TN.2 is an all dwarf ryegrass, hardwearing, fine blend that top level tennis clubs now use)



TN.1 Tennis Courts Grass Seed Mix

40% RESISTUS Dwarf Perennial Ryegrass
30% ANTOINETTE Chewings Fescue
25% MAXIMA Strong Creeping Red Fescue
5% HIGHLAND Browntop Bentgrass

20 kg bags

Code

8025

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

TN.2 All Rye Tennis Courts Grass Seed Mix

40% CHLOE Dwarf Perennial Ryegrass
40% PENELOPE Dwarf Perennial Ryegrass
20% VERMILLION Dwarf Perennial Ryegrass -
WINTER ACTIVE

20 kg bags

Code

80251

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2



Landscaping Grass Seed



HM.1 Fine Lawn Grass Seed Mix

40% Chewings Fescue
40% Slender Creeping Red Fescue
20% Browntop Bent

Available in all pack sizes

Code

8001

**We recommend sowing this seed at a
rate of 35-70g per square metre**

HM.2 Premium Front Lawn / Low Maintenance Grass Seed Mix

45% Strong Creeping Red Fescue
15% Slender Creeping Red Fescue
30% Chewings Fescue
5% Smooth Stalked Meadow Grass
5% Browntop Bent

Available in all pack sizes

Code

8002

**We recommend sowing this seed at a
rate of 35-70g per square metre**



Landscaping Grass Seed Contd.



HM.3 Hard Wearing Lawn Grass Seed Mix

30% Dwarf Perennial Ryegrass
30% Strong Creeping Red Fescue
10% Slender Creeping Red Fescue
20% Chewings Fescue
5% Smooth Stalked Meadow Grass
5% Browntop Bent

Available in all pack sizes

Code

8003

We recommend sowing this seed at a rate of 35-70g per square metre

HM.5 Shade Grass Seed Mix

20% Dwarf Perennial Ryegrass
40% Strong Creeping Red Fescue
13% Slender Creeping Red Fescue
2% Wood Meadow Grass
5% Smooth Stalked Meadow Grass
15% Hard Fescue
5% Browntop Bent



Available in all pack sizes

Code

8005

We recommend sowing this seed at a rate of 35-70g per square metre



HL.7 Coastal Grass Seed Mix

25% Dwarf Perennial Ryegrass
10% Slender Creeping Red Fescue
35% Strong Creeping Red Fescue
24% Hard Fescue
2% Saltmarsh Grass
2% KROMI Creeping Bent
2% HIGHLAND Browntop Bent

20 kg per bag

Code

8080

Sowing rate: 35-70 grams per m2

Oversowing: 20-35 grams per m2

HM Stress Buster Grass Seed Mix Ideal for Clay Soils, Drought & Wet Areas)

25% SC1 Amenity Tall Fescue (Rhizomatous)
25% DEBUSSY 1 Amenity Tall Fescue (Rhizomatous)
50% DOUBLE TET Perennial Ryegrass

Available in all pack sizes

Code

8740

We recommend sowing this seed at a rate of 35-70g per square metre



100% Wildflower Seed Mixtures

Mixtures without grass for more colour throughout the flowering periods

Suggested sowing rate for 100% Wildflowers is 2 grams per m²

(50g covers 25m², 100g covers 50m², 250g covers 125m², 500g covers 250m², 1kg covers 500m², 5kg covers 2500m², 10kg covers 5000m²)

Annual Mixtures (1st year colour, more colourful but relies on self seeding for future years):

AC1 Cornfield Annual, HC1 Annual Etna, HC5 Kaleidoscope & HC6 Sherbert Fizz



AC1 Cornfield Annual



HC5 Kaleidoscope

Annual & Perennial Mixtures (Colour in the first year and year 2 onwards):

AP1 Premium, AP2 Eco, AP3 Colour Bright, P1 Acid Soils, P2 Water Margins, P3 Calcareous Soils, P4 Hedgerows, P5 Woodland & Heavy Shade, P6 Damp Loam, P7 Dry/Sandy Soils, P9 Heavy Soils, HC4 Dwarf Meadow, HC7 Butterfly Paradise, HC8 Deep Purple, HC9 Strawberries & Cream, HC10 The Bees Knees & HC11 American Prairie



AP3 Colour Bright



HC7 Butterfly Paradise

Perennial Mixtures (Colour in the 2nd year and beyond):

P8 Flowering Lawn



80:20 Grass & Wildflower Seed Mixtures

All the meadow mixtures with grass are 80% Grass and 20% Wildflowers

Grasses used in the mixtures are low maintenance and suitable to use with Wildflowers

The suggested sowing rate for mixtures with grass is 5 grams per m²

(250g covers 50m², 500g covers 100m², 1kg covers 200m², 5kg covers 1000m², 10kg covers 2000m²)

Annual & Perennial Mixtures (Colour in the first year and year 2 onwards):

P1 Premium, AP2 Eco, AP3 Colour Bright, P1 Acid Soils, P2 Water Margins, P3 Calcareous Soils, P4 Hedgerows, P5 Woodland & Heavy Shade, P6 Damp Loam, P7 Dry/Sandy Sols, P9 Heavy Soils

Perennial Mixtures

(Colour in the 2nd year and beyond, recommended to sow with an annual mix):

P8 Flowering Lawn



Larkstel Associates are also able to offer grass seed mixtures from the following seed ranges



Prices and mixtures are available upon request



PURITY SOIL CONDITIONER

Provides the soil with a building block of organic matter

The aim of this purity soil conditioner is to provide the soil with a building block of organic matter. This will stimulate all available nutrients to release steadily over a 6-8 week period. Purity can be used all year round but we recommend application in **early spring and early autumn/winter**.

Purity soil conditioner is available in liquid or granular form

Purity soil conditioner is fantastic for:

- Golf Courses
- Bowling Greens
- Football Pitches
- Rugby Pitches
- Lawn Care
- Croquet Lawns
- Cricket Squares and Outfields



This product contains saponins extracted from tea seed meal and care should be exercised in its use.

Key Benefits of Purity organic plant extract

- Promotes the establishment of Fescues, Bents and Rye grasses.
- Improves root mass and increases nutrient uptake.
- Increases plant tolerance to stress conditions.
- Encourages faster growth and establishment of new grass seedlings.
- Increase resistance to and speedier recovery from disease.
- Maintains plant count entering into a dormant period.
- Acts as a biostimulant, which will enhance microbial activity.
- Can be applied to all types of turf, greens, tees, fairways, sports pitches and general amenity turf.
- Suitable for all type of soils.



Clean & Green

Soil Conditioner

Our 3mm organic prill made from plant extracts is perfect to help all sports turf areas for an all-year playable surface with a less uneven appearance. Rich with natural nutrients, tea saponins break down into the soil during cooler wetter weather when temperatures are between 0 and 15°C. Working continuously to help the breakdown of organic matter, the soil conditions assist the plant extract and encourage bio stimulants for plants.

Benefits of **Clean & Green**

- Easy to apply
- Reduces uneven surfaces
- Promotes nutrition uptake
- Develops and helps sports turf grasses
- Increases plant tolerance to stress and wear
- Acts as bio stimulant for plants



This product is used all year round, but is best used in the Autumn, Winter and Spring when wetter periods are likely. We recommend using this product when the forecast rainfall is 5-10mm or that the soil is irrigated very heavily after application.

Application Rate: 20gms/m² / 200kg/ha

Typical Analysis: Saporin 15% Moisture 7% Total Organic 45% Nitrogen 3% K₂O 1%

Allow a 5m buffer between all water courses



Turf Fungicides

Syngenta Heritage - Azoxystrobin

Featuring both preventative and curative actions against turf diseases unparalleled by existing turf fungicides. It enters turf grass through the leaf, stem, crown and root system moving throughout the plant giving excellent protection.

Pack Size	Coverage	MAPP No.	Also available in 100 g
500 g	10,000 sq.m	13536	



Syngenta Heritage MaXX - Azoxystrobin

Heritage MaXX has taken the world's top selling fungicide active ingredient azoxystrobin to a new level, to consistently deliver exceptional turf quality. Heritage MaXX has the broadest spectrum of turf diseases (7) on the label and with no LERAP is the easiest to use. Fast acting, it tackles both foliar and soil diseases giving excellent longer lasting turf disease control.

Pack Size	Coverage	MAPP No.
3 ltr	12,000 sq.m	18246



Syngenta Instrata Elite Difenoconazole,

Fludioxonil Instrata Elite gives a powerful combination of curative and contact plus systemic properties, for reliable turf protection outside and in the plant. Suitable for the treatment of Red Thread.

Pack Size	Coverage	MAPP No.	Also available in 1ltr
3 ltr	10,000 sq.m	17976	



Syngenta Medallion TL - Fludioxonil.

Medallion TL is the exciting new 'contact+' turf fungicide proven to give exceptional long lasting protection from microdochium (fusarium) patch and other turf diseases. Contact+ activity of Medallion TL controls disease pathogens on the leaf, in the thatch and at the soil surface.

Pack Size	Coverage	MAPP No.	Also available in 1ltr
3 ltr	10,000 sq.m	15287	



Use plant protection products safely. Always read the label and product information before use

Syngenta Ascernity - Benzovindiflupyr & Difenoconazole

Ascernity is a broad spectrum foliar turf fungicide with both contact and systemic properties. Developed to achieve reliable sustained disease control on professional sports turf.

For use on stadium sports turf only

Pack Size	Coverage	MAPP No.
3 ltr	10,000 sq.m	19544

Selective Turf Weedkillers

Barclay Holster XL - Fluroxypyr, dicamba and 2,4-D.

Holster XL controls slender speedwell (early spring application for best results), white clover, yarrow, yellow suckling clover and most problem weeds in turf. Its three powerful ingredients used at a low application rate of 2 litres per hectare make it very safe. It can be used on newly sown grass after eight weeks and is ideal for fine turf applications, such as golf and bowling greens.

Pack Size	Coverage	MAPP No.
2 ltr	10,000 sq.m	16407

ICL Enforcer - Dicamba, MCPA and mecoprop-P.

A selective herbicide for broad leaved weeds in managed amenity turf including lawns, golf courses and sports fields.

Pack Size	Coverage	MAPP No.
5 ltr	6,666 sq.m	17274



ICL Esteron T - 2,4-D and florasulam

Esteron T is a low volume dual action selective herbicide for the control of broad-leaved weeds in managed amenity turf and domestic lawns.

Pack Size	Coverage	MAPP No.
2 ltr	24,000 sq.m	17432



Use plant protection products safely. Always read the label and product information before use

Selective Turf Weedkillers contd.

ICL Icade - Aminopyralid and triclopyr.

For the control of invasive and tough woody weeds such as japanese knotweed, hogweed and buddleia.



Pack Size	Coverage	MAPP No.
1 ltr	Varies	16182

ICL Praxys - Florasulam, flouroxypyr and clopyralid.

A selective systemic post emergence herbicide, it rapidly enters target weeds travelling through the whole plant (includes the roots) to give an excellent kill with no regrowth.



Pack Size	Coverage	MAPP No.
2 ltr	10,000 - 20,000 sq.m	18953

ICL Celadon - Flourasulam and Fluroxypyr

Celadon is a trusted selective herbicide formulation for the control of Daisy, Dandelion, Clover, Buttercup, Ribwort Plantain, Slender Speedwell and other broad-leaved weeds in managed amenity turf, including domestic lawns.



Pack Size	Coverage	MAPP No.
2 ltr	10,000 sq.m	19364

Can be used on newly established turf (2 leaf stage)
One application per year

Vitax Lawn Clear RTU Turf Weedkiller - Clopyralid, 2,4-D and MCPA.

A ready to use, trigger spray pack for spot treatment on a wide variety of broadleaved weeds.

Pack Size	Coverage	MAPP No.
12 x 750ml	Varies	15195

Use plant protection products safely. Always read the label and product information before use

Total & Residual Weedkillers

Barclay Gallup Biograde Amenity - Glyphosate.

A non-irritant 360 g/ltr total translocated glyphosate herbicide which controls both annual and deep rooted perennial weeds.

Pack Size	Coverage	MAPP No.
5 ltr	Varies	17674



Barclay Gallup Hi-Aktiv - Glyphosate.

High strength 490 g/ltr total translocated glyphosate herbicide which controls both annual and perennial weeds.

Pack Size	Coverage	MAPP No.
5 ltr	Varies	17681



Barclay Gallup Home & Garden - Glyphosate.

A foliar applied total herbicide to control annual and perennial grass and weeds. It contains 360g/ltr of glyphosate and it is inactivated on contact with the soil and broken down by soil organisms to leave no lasting residual effects, allowing replanting in the area it has been applied after the weed has desiccated.

Pack Size	Coverage	MAPP No.
1 ltr	2,000 sq.m	17672



Belchim Chikara - Flazasulfuron.

Broad spectrum herbicide for use in non crop situations. If weeds are emerged a tank mixture with an amenity glyphosate is recommended to give both initial control and persistent residual control for up to 5 months.

Pack Size	Coverage	MAPP No.
50g	3,333 sq.m	14189



Use plant protection products safely. Always read the label and product information before use

Total & Residual Weedkillers contd.

ICL Lockstar - Diflufenican, Iodosulfuron-methyl-sodium.

Contains the new active "iodosulfuron" a residual pre-emergent herbicide than can keep treated surfaces weed-free for up to 4 months.

Pack Size	Coverage	MAPP No.
500g	10,000 sq.m	19101

Monsanto Ecoplug Max - Glyphosate.

Ecoplug Max is an effective non-selective herbicide tree stump control application method which kills the whole root system of targeted trees with no effect on surrounding trees.

Pack Size	Coverage	MAPP No.
100 plugs	Varies	17581



Ecoplug Drill Bit

A drill bit to ensure to drill to the correct depth when using Ecoplugs.

ICL ProShield - Diflufenican and glyphosate.

A non-selective total herbicide for the control of a wide range of annual and perennial broad leaved weeds and grasses.

Pack Size	Coverage	MAPP No.
5 ltr	11,000 sq.m	17525

Monsanto Roundup ProActive - Glyphosate.

A non-irritant 360 g/ltr biograde total translocated

Pack Size	Coverage	MAPP No.
5 ltr	5,000 - 33,000 sq.m	17380



Use plant protection products safely. Always read the label and product information before use

Total & Residual Weedkillers contd.

Monsanto Roundup ProVantage - Glyphosate.

High strength 480 g/ltr non-irritant total translocated glyphosate herbicide which controls both annual and perennial weeds.



Pack Size	Coverage	MAPP No.
5 ltr	13,333 - 22,222 sq.m	15534

Growth Regulators

ICL Primo MaXX II - Trinexapac-ethyl.

Primo Maxx II is an advanced, liquid plant growth regulator to be used on managed turf grass areas.

- Enhances turf health and playing surface consistency
- Delivers improved playability by increasing turf density
- Improved turf quality and wear tolerance
- Promotes healthy plants that are better able to resist the effects of stress and disease

Pack coverage depends on type of area, type of grass and height of cut. Do not apply Primo MaXX II to stressed turf, for best results Primo MaXX II should be tank mixed with a seaweed or liquid fertiliser product.

Pack Size	Greens Coverage	Tees: Coverage	Fairways: Coverage	Rough & Semi-rough: Coverage	MAPP No.
5 ltr	125,000 sq.m	31,250 - 62,500 sq.m	20,833 - 31,250 sq.m	15,625 - 20,833 sq.m	17509

Also available in 10 ltr & 20 ltr



Insecticide

Syngenta Acelepryn - Chlorantraniliprole

ACELEPRYN® is a suspension concentrate containing 200 g/litre chlorantraniliprole. For control of chafer grubs and leatherjackets in sports pitches, golf greens, tees and fairways, golf roughs, race courses and gallops, bowling greens, airfields, and professional application to commercial and residential lawns.

Pack Size	Application rate	Mapp No.
600 ml	0.6 lt /ha	20149
3 lt		10045

One application per year



Hard Surface Cleaner

ICL Ranger

Chloride, Organic acid and surfactants.

A hard surface cleaner for use on concrete, asphalt, tarmac, block paving, artificial sports surfaces and other hard surfaces. (except memorial marble and slate)

Pack Size	Coverage	HSE No.
5 ltr	500 sq.m	10045



Turf Pigment

ICL Ryder

Highly concentrated and stable green pigment designed for use on Managed Amenity Turf to improve its appearance and help protect against UV radiation and high light intensities.

Pack Size	Coverage
1 ltr	Mix 0.75 - 2 litres in 250 - 500

Also available in 5 ltr



Use plant protection products safely. Always read the label and product information before use

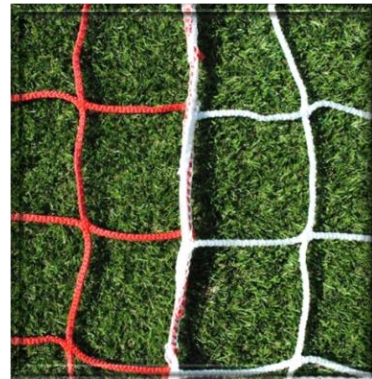
MHGOALS

Sports Equipment ranges available from

Larkstel Associates Ltd

For further details call Kelvin on 07825 697613

Football



Hockey



Rugby



Also available

Tennis Cricket Basketball
Badminton Netball
Athletics Team Shelters
Grounds accessories



Larkstel Associates Ltd are pleased to be able to offer the Pinseeker range of golf equipment and course furniture.



For further details contact Kelvin on 07825 697613



Verde

SPORTS LIMITED
Artificial Grass & Sports Surfaces

VERDEGRASS

- 9mm curled pile
- Emerald green fibrillated polypropylene
- Must install onto a smooth solid base - loose lay or spot stick
- No sand infill required
- Ideal for balconies, patios, roof gardens, putting greens, swimming pools surrounds and display areas

SUPER VERDEGRASS

- 12mm heavy duty dense pile
- Olive green fibrillated polypropylene
- Either loose lay or spot stick onto a bound base. Securely fix at the edges over an unbound base
- No sand infill required
- Ideal for top quality domestic lawns, golf course pathways and high traffic public areas

VERDETURF

- 20mm open pile
- Olive green fibrillated polypropylene
- Should lay over a compacted aggregate base and infill with 20kg/sq metre of kiln dried silica sand to hold the grass in place and protect the tufts
- Strongly recommended for children playing football and areas beneath swings
- Commercial applications such as golf course pathways, football touchlines, dugouts and sports practice pitches
- Available in alternative colours

SUPER VERDETURF

- 15mm closely tufted pile
- Olive green fibrillated polypropylene
- Lay over a compacted aggregate base or spot stick to a smooth solid base
- Lightly dress with kiln dried silica sand (8kg/sq.metre) which is barely visible. Sand is optional for roof top gardens
- Ideal for top quality gardens, nurseries, putting greens, patios and balconies

VERDELUXE

- 28mm two-tone multi-length artificial grass, constructed with straight and textured yarns in a realistic mixture of green shades
- Combination of low friction polyethylene and resilient polypropylene fibres - providing a non-abrasive finish
- Loose lay onto a firm aggregate base with an optional sand dressing (8kg/sq.metre) or spot adhere to a smooth solid base
- Safety Surface - conforms to critical fall heights when used with Pro-Play Shockpad
- Ideal for luxury lawns, nurseries, play areas and landscaping options
- Superior quality for garden lovers

SUPER VERDELUXE

- 45mm two-tone multi-length artificial grass, constructed with straight and textured yarns in a realistic mixture of green shades
- Combination of a dense thatch and a hard-wearing polypropylene monofilament for demanding sports applications
- Lay directly over a compacted aggregate base and infill with a mixture of sand and rubber to suit your requirements
- Suitable for gardens requiring the "un-cut" lawn appearance
- Designed for golf tees, football touchlines, practice areas and other sports
- Top of the range exclusive product

VERDELAWN

- 30mm dense pile
- Two-tone light green polyethylene monofilament with a tan twisted root zone
- Very realistic appearance with a super soft bouncy feel
- Loose lay onto a firm aggregate base with an optional sand dressing (8kg/sq.metre) or spot adhere to a smooth solid surface
- Perfect for gardens, schools, nurseries, landscape and commercial applications
- Looks like a luxurious luscious lawn

GROOVY GRASS

- 24mm, two-tone, multi-length artificial grass
- Supplied in a variety of vibrant colours
- A super soft polyethylene pile with an extremely resilient dense root zone
- Loose lay onto a firm aggregate base with an optional sand dressing, spot adhere to a smooth solid surface or fix just like carpet
- Ideal for gardens, schools, hotels or holiday venues
- Create a funky all-weather area around your home or office
- Match your lifestyle, live for today, have fun!

Rate Converter

Length

1 in = 25.4 mm
1 ft = 304.8 mm
1 yd = 914 mm
1 mile = 1.609 km
1 mm = 0.039 in
1 m = 3.28 ft
100 m = 109.36 yds
1 km = 0.621 mile

Mass

1 g = 0.035 oz
1 kg = 2.205 lb
1 ton = 1.016 tonne
1 oz = 28.35 g
1 lb = 0.454 kg
1 cwt = 50.8 kg
1 tonne = 0.984 ton

Area

1 cm² = 0.061 in²
1 m² = 1.196 yd²
1 km² = 0.386 mile²
1 ha = 2.471 acres
1 in² = 6.4516 cm²
1 ft² = 0.093 m²
1 yd² = 0.836 m²
1 mile² = 259 ha
1 acre = 0.4047 ha

Volume

1 millilitre = 0.06 in³
1 litre = 1.76 pt
1 m³ = 35.315 ft³
1 m³ = 1.308 yd³
1 pt = 0.568 litre
1 in³ = 16.39 ml
1 ft³ = 0.028 m³
1 yd³ = 0.765 m³
1 gallon = 4.544 litres

Temperature

0 degree Celsius = 32 degree Fahrenheit
5 degree Celsius = 41 degree Fahrenheit
10 degree Celsius = 50 degree Fahrenheit
15 degree Celsius = 59 degree Fahrenheit
20 degree Celsius = 68 degree Fahrenheit
25 degree Celsius = 77 degree Fahrenheit
30 degree Celsius = 86 degree Fahrenheit
35 degree Celsius = 95 degree Fahrenheit
40 degree Celsius = 104 degree Fahrenheit
50 degree Celsius = 122 degree Fahrenheit
60 degree Celsius = 140 degree Fahrenheit
70 degree Celsius = 158 degree Fahrenheit
80 degree Celsius = 176 degree Fahrenheit
90 degree Celsius = 194 degree Fahrenheit
100 degree Celsius = 212 degree Fahrenheit

Fertiliser and Seed Rates etc.

35 g/m² = 1 oz/yd²
0.5 kg/m² = 1 lb/yd²
50 kg/ha = 40 LB/acre
125 kg/ha = 1 cwt/acre
1 tonne/ha = 8 cwt/acre
2.5 tonne/ha = 1 ton/acre

Approximate Height of Cut

5 mm = 3/16 in
12 mm = 1/2 in
19 mm = 3/4 in
25 mm = 1 in
50 mm = 2 in

Light Conversions for Floodlighting

1 Footcandle = 10.76391 Lux
1 Lumen / ft² = 1 Footcandle
1 Lumen / m² = 1 Lux
1 Metre Candle = 1 Lux

Flow Rates Water Volume

1 acre inch/day = 102,790 litres/day = 22,610 gallons/day
1 acre inch/day = 4,283 litres/hour = 942 gallons/hour
1 acre inch/day = 71 litres/minute = 15.701857 gallons/minute
1 acre inch/hour = 102,790 litres/hour = 377 gallons/minute
1 acre inch/day = 102,790 litres/day = 22,610 gallons/day
1 acre inch/day = 4,283 litres/hour = 942 gallons/hour
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