



Amenity Product Guide

Incorporating BioActive products
for Natural Methodology



Amenity Nutrition



For Quality, Service & Value

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Situated in the heart of Angus, Scotland's birthplace!



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Angus Horticulture Ltd

We're proud of our heritage as fertiliser manufacturers offering a highly flexible service and meeting customers' specific requirements. **Angus Horticulture** produce granular, sand based powder, soluble powder and liquid fertilisers as well as root zone amendments and our class leading **BioActive** range of products.

We produce some of the best fertilisers on the market today and supply them competitively throughout the UK, Ireland and much of Europe. An independent, small family business, we compete with competitors who are part of multi-national corporations and still continue to have at our disposal the most technically advanced and up to date raw materials and manufacturing processes to offer you, our customers, cutting edge products. Our family firm set up allows us to offer a flexibility of service and bespoke products even with low volumes.

Angus Horticulture is committed to high levels of customer service to all our customers, large or small. Product integrity is of high importance as is friendly and efficient contact with our customers.

A holistic approach to turf nutrition is important to us. We consider all aspects of root zone health and plant requirements. We continually revise our formulations and bring new products into our portfolio. We also offer much more than we can fit into this product guide, so please ask if you can't find something you require.

Please enjoy browsing our product guide and choosing which of these products most suit your requirements. If you require any advice, please don't hesitate to contact our office or your local **Angus Horticulture** distributor.



Angus Horticulture: Professional, turf nutrition specialists. For Quality, Service & Value.



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 25-0-25 22-7-22

18-18-18 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)

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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.

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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 hardier 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.



Applications are welcomed from those requiring their own branded version of this product.



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/m ²
Nutrients applied per m ² @ 50g/m ²	6g N – 1.5g P ₂ O ₅ - 4.5g K ₂ O + 1g MgO + 1g Fe
25kg bag treats	500 - 714m ² 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/m ²
Nutrients applied per m ² @ 50g/m ²	7g N – 0g P ₂ O ₅ - 3.5g K ₂ O + 1.5g MgO + 1g Fe
25kg bag treats	500 - 714m ² 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/m ²
Nutrients applied per m ² @ 50g/m ²	1.5g N – 0g P ₂ O ₅ - 6g K ₂ O + 1g MgO + 1g Fe
25kg bag treats	500 - 714m ² 20kg or 25kg bags

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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

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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

High N + Fe

9 - 0 - 0 + 11% Fe

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

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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	21 - 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

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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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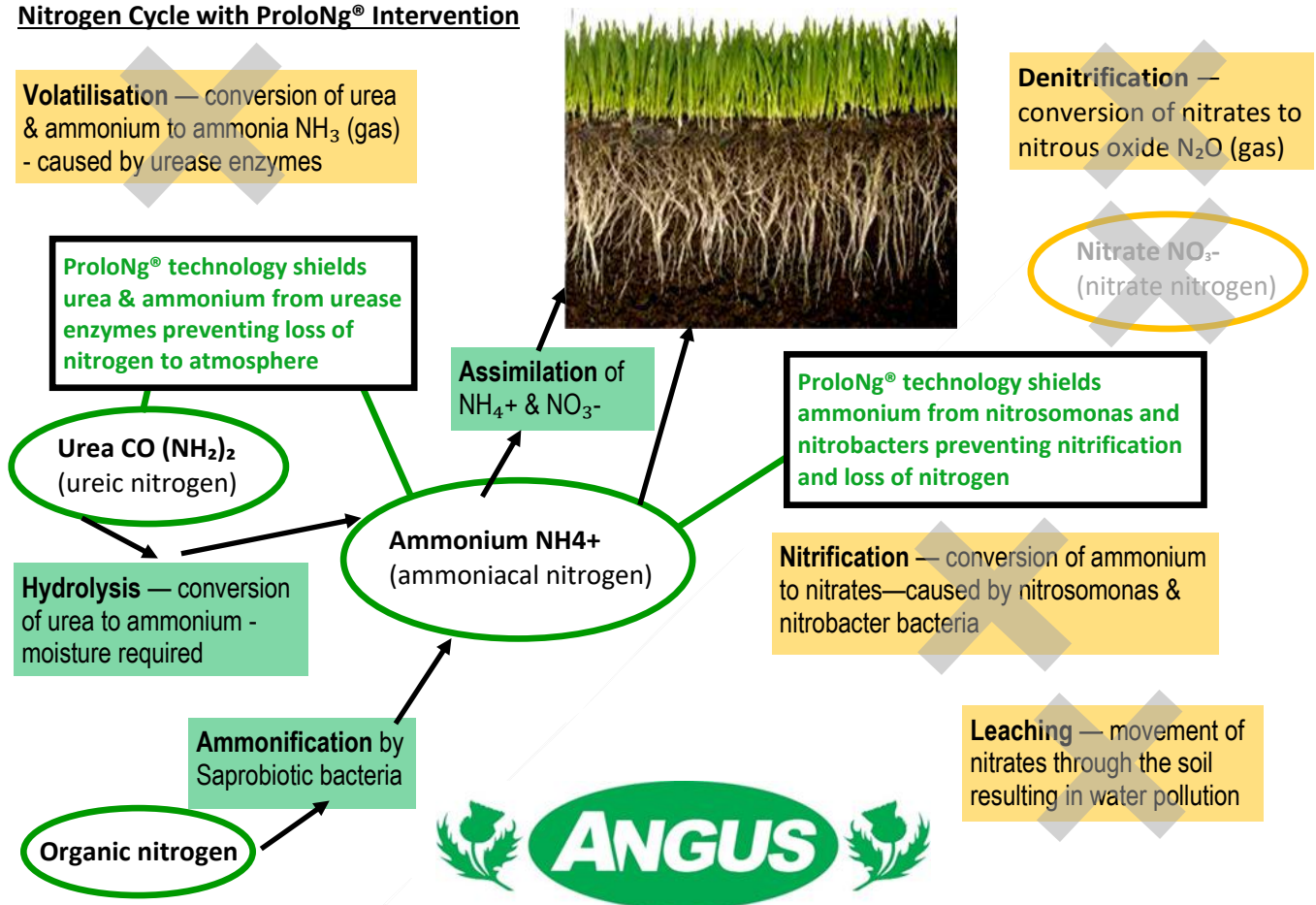


ProloNg[®] fertilisers

Nitrogen efficiency

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

Nitrogen Cycle with ProloNg[®] Intervention



The Benefits: All applied nitrogen (N) 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	<div style="background-color: #c00000; color: white; padding: 5px; text-align: center;"> Now also available in micro 0.5-1.5 mm granules </div>
*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
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

ProloNg® Soluble

ProloNg® Soluble Greens, Tees, Fairways, Pitches	46 - 0 – 0 100% of nitrogen (N) as urea with ProloNg® technology
*Potential longevity:	spring/summer application, 10-12 weeks autumn/winter application, 5-6 months
Rates of Application:	20kg / ha in 200 litres of water
Nutrients applied per m ² @ 20g/m ²	9.2g N

*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 (N) use and therefore the speed in which applied nitrogen (N) is utilised.

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ProloNg® mini

Nitrogen efficiency

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

<p>ProloNg® mini Spring/Summer Fairway Sports Pitches</p> <p>*Potential longevity:</p> <p>Rates of Application:</p> <p>Nutrients applied per m² @ 50g/m²</p>	<p>24 - 3 - 7 + 3% CaO</p> <p>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</p> <p>50g/m²</p> <p>12g N – 1.5g P₂O₅ - 3.5g K₂O</p>	<p>20kg bag treats 400m²</p> <p>1-2.5mm granules</p>
<p>ProloNg® mini Fairways & pitches</p> <p>*Potential longevity:</p> <p>Rates of Application:</p> <p>Nutrients applied per m² @ 50g/m²</p>	<p>18 - 3 - 18 + 2% CaO</p> <p>40% of nitrogen (N) as ammonium with ProloNg® technology 60% of nitrogen (N) as urea with ProloNg® technology 100% of potassium from muriate of potash spring/summer application, 3-4 months autumn/winter application, 6-8 months</p> <p>50g/m²</p> <p>9g N – 1.5g P₂O₅ - 9g K₂O</p>	<p>20kg bag treats 400m²</p> <p>1-2.5mm granules</p>
<p>ProloNg® mini Tees & Approaches</p> <p>*Potential longevity:</p> <p>Rates of Application:</p> <p>Nutrients applied per m² @ 50g/m²</p>	<p>14 - 1 - 7 + 4% CaO + 3% MgO + 2% Fe</p> <p>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</p> <p>50g/m²</p> <p>7g N – 0.5g P₂O₅ - 3.5g K₂O + 2g CaO + 1.5g MgO + 1g Fe</p>	<p>20kg bag treats 400m²</p> <p>1-2.5mm granules</p>
<p>ProloNg® mini Spring greens & tees</p> <p>*Potential longevity:</p> <p>Rates of Application:</p> <p>Nutrients applied per m² @ 50g/m²</p>	<p>11 - 5 - 5 + 3% CaO + 8% SO₃</p> <p>100% of nitrogen (N) as ammonium with ProloNg® technology 100% of potassium from muriate of potash spring/summer application, 8-10 weeks</p> <p>50g/m²</p> <p>5.5g N – 2.5g P₂O₅ - 2.5g K₂O + 1.5g CaO + 4g SO₃</p>	<p>20kg bag treats 400m²</p> <p>1-2.5mm granules</p>

*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 (N) use and therefore the speed in which applied nitrogen (N) is utilised.

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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
*Potential Longevity:	Spring/Summer, 3-4 months or autumn/winter, 6-8 months
Rate of Application:	50g/m ² 20kg bag treats 400m²
Nutrients applied per m ² @ 50g/m ²	9g N – 1g P ₂ O ₅ - 9g K ₂ O + 1g CaO + 4g SO ₃ 1-3mm granules

ProloNg[®] fairway & sports pitches	28 - 3 - 10
	100% of nitrogen with ProloNg [®] technology; 22.4% ureic, 5.6% ammoniacal 100% of potassium from muriate of potassium
*Potential Longevity:	Spring/Summer, 5-6 months or autumn/winter, 8-9 months
Rate of Application:	50g/m ² 20kg bag treats 400m²
Nutrients applied per m ² @ 50g/m ²	14g N – 1.5g P ₂ O ₅ - 5g K ₂ O 1-3mm granules

- Blended 2-5mm 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
<i>Blended Pre-seeder</i>	80% of Nitrogen as urea with ProloNg [®] technology & 20% of N as ammoniacal 100% of Potash from Potassium Sulphate – low salt formulation
*Potential Longevity:	Spring/Summer, 6-8 weeks or autumn/winter, 4+ months
Rate of Application:	50g/m ² 20kg bag treats 400m²
Nutrients applied per m ² @ 50g/m ²	6g N – 5g P ₂ O ₅ - 9g K ₂ O + 2g MgO + 6g SO ₃ 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
*Potential Longevity:	Spring/Summer, 2-3 months or autumn/winter, 5-6 months
Rate of Application:	50g/m ² 20kg bag treats 400m²
Nutrients applied per m ² @ 50g/m ²	10g N – 2g P ₂ O ₅ - 10g K ₂ O + 1.5g CaO + 0.75g MgO + 4g SO ₃ 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 (N) use and therefore the speed in which applied nitrogen (N) is utilised.

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BioActive ProloNg®

Nitrogen efficiency

BioActive ProloNg® Just N

46 - 0 - 0

*Potential Longevity:	100% of nitrogen as urea with ProloNg® technology spring/summer application, 6-8 months	
Rate of Application:	50g/m ²	20kg bag treats 400m ²
Nutrients applied per m ² @ 50g/m ²	23g N	2-5mm granules

BioActive ProloNg® s/s high N

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

*Potential Longevity:	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	
Rate of Application:	50g/m ²	20kg bag treats 400m ²
Nutrients applied per m ² @ 50g/m ²	14g N – 1.5g P ₂ O ₅ - 7.5g K ₂ O + 0.75g CaO + 0.5g MgO + 2.5g SO ₃	2-5mm

BioActive ProloNg® Late Summer

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

*Potential Longevity:	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	
Rate of Application:	50g/m ²	20kg bag treats 400m ²
Nutrients applied per m ² @ 50g/m ²	8g N – 2.5g P ₂ O ₅ - 12.5g K ₂ O + 1.75g CaO + 0.75g MgO + 6g SO ₃	2-5mm

BioActive ProloNg® High K

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

*Potential Longevity:	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	
Rate of Application:	50g/m ²	20kg bag treats 400m ²
Nutrients applied per m ² @ 50g/m ²	7.5g N – 0g P ₂ O ₅ - 12.5g K ₂ O + 2g CaO + 1.5g MgO + 5g SO ₃	2-5mm granules

BioActive ProloNg® Autumn High K

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

*Potential Longevity:	100% of Nitrogen with ProloNg® technology 52% of Potassium from Sulphate of Potash – reduced salt formulation October application, 5-6 months	
Rate of Application:	50g/m ²	20kg bag treats 400m ²
Nutrients applied per m ² @ 50g/m ²	5g N – 0g P ₂ O ₅ - 15g K ₂ O + 3.5g CaO + 1g MgO + 5g SO ₃	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 (N) use and therefore the speed in which applied (N) nitrogen is utilised.

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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 (N) use and therefore the speed in which applied nitrogen (N) 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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Angus Horticulture Product Guide



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

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

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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/m ²	25kg bag treats:	416m ²
<i>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!</i>			

Lawn Sand	3 - 0 - 0 + 3% Fe		
Rate of Application:	120g/m ²		
25kg bag treats	178m ²		

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

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

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

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

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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For Quality, Service & Value



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

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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), 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%)

As well as:

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

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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



Angus Humic & Fulvic Acid

Now part of the BioActive range and replaces BioActive Maxim™; Angus Humic & Fulvic Acid is a similarly high quality product with higher concentrations of humic & fulvic acid thus offering greater efficacy and better value.

We are proud to present our **Angus Humic and Fulvic Acid** derived from **Lignite Ore** offering compatibility and flexibility when mixing with most plant nutrient and tank mix formulations. Quality humate products help to:

- Improve soil structure
- Increase nutrient exchange and retention (by increasing CEC)
- Enable plants to obtain nutrients more readily
- Stimulate microbial growth
- Improve nutrient absorption & increase nutrient uptake
- Stabilise pH
- Increase stress tolerance within the plant
- Increase root development
- Improve seed germination
- Enhance shoot and root growth in turf
- Encourage increased chlorophyll content within plant

Angus Humic & Fulvic Acid is:

- Easily applied through all irrigation systems and spray application equipment
- A source of energy for soil microbes present in the root zone
- A source of organic carbon, sulphur and potassium necessary for healthy plants

Angus Humic and Fulvic Acid

Total potassium oxide [K₂O]

Rates of Application: Root drench via irrigation etc.
 Foliar application

liquid solution with lignite

5%

8 litres product [in minimum 100 litres of water] / ha weekly
2 litres product [in minimum 100 litres of water] / ha weekly

Angus Humic and Fulvic Acid is a bio stimulant and not a fertiliser. As such it should always be used as part of a standard fertility program. Always read and follow label instructions. When tank mixing we strongly recommend a simple 'bucket test' prior to application in order to confirm compatibility although we do expect good compatibility with most other sprays.

Available in 10, 200 & 1,000 litre containers

best quality, best service, best value





BioActive KitoPlus™ Easy

Inorganic Soil Improver enhancing soils microbiology and in turn decreasing plants susceptibility to damage from pathogenic fungi and bacteria

Dissolved *chitosan hydrochloride* (EU approved “basic substance” under Regulation 1107/2009) (50 g/litre w/v)
Product Approved for Use in Organic Systems by SOPA (Certificate No.: S1363E/0420/01)

BioActive KitoPlus™ Easy serves to:

Modify Plant-Microbial Interactions and Improve Crop Yields and Crop Quality

A natural, organic plant elicitor derived from chitin-rich shell fish for turf managers desiring **high quality, healthy swards**. **BioActive KitoPlus™ Easy** is an effective plant elicitor, eliciting the plants’ defence mechanisms so as to enable the growth of healthy, vigorous plants of good colour and with the ability to resist damage from abiotic and biotic stresses. This product can improve both the rhizosphere and phyllosphere, and therefore boost beneficial microorganism populations, including mycorrhizae, enabling improved nutrient assimilation.

BioActive KitoPlus™ Easy can facilitate via the stimulation of natural defence mechanisms:

- **Reduced likelihood of fungal infection in crops as a result of eliciting response in plants**
- **Effective action against plant viruses by modifying the plant’s response to infection**
- **Increased plant resistance to attack by pests**
- **The development of healthy plants and healthy soils, which are less likely to support populations of root feeding nematodes**
- **Alteration of the environment in the rhizosphere & phyllosphere to shift the microbial balance in favour of beneficial organisms and to the detriment of plant pathogens**
- **Improved resistance to both biotic and abiotic stresses**
- **Increases photosynthesis, vegetative growth and plant vigour**
- **Stimulation of growth-promoting microbes and antagonistic biological control agents**
- **Complexation plant nutrients, aiding assimilation**

Apply from leaf development (main shoot) to development of fruit; 4 – 8 applications per season

BioActive KitoPlus™ Easy

Seed Dressing for improved germination:

2 litres in 200 litres water / ha

2 ml / litre of water applied prior to sowing

Tank mixing with pesticides or plant nutrient products is not recommended.

BioActive KitoPlus™ Easy available in 10 litre, 500 litre and 1,000 litre containers

best quality, best service, best value





BioActive FerroCarb™

Concentrated liquid iron with carbohydrates

Environmentally safe formulation of liquid iron and natural carbohydrates

BioActive FerroCarb™ is a blend of carbohydrate extracts, amino acids, and iron in a true solution formulation. **BioActive FerroCarb™** contains our unique blend of carbohydrates, amino acids and proteins for more effective penetration into the turf grass plant and utilisation in making chlorophyll molecules, and enhanced rooting and plant health. **BioActive FerroCarb™** reduces moss formation, provides aesthetic greening up, and blends with all liquid products in the BioActive range. **BioActive FerroCarb™** does not scorch turf grass leaves nor does it harm soil microbes when used at recommended rates. **BioActive FerroCarb™** is ecologically safe and an effective green-up formulation for turf grass surfaces.

Applying **BioActive FerroCarb™** outperforms straight ferrous sulphate

Main benefits of **BioActive FerroCarb™** on turf grass surfaces:

- Great colour for aesthetic appeal
- Safe for soil microbes
- Reduces moss formation
- Enhanced rooting
- Replaces the need for harmful Ferrous Sulphate
- Easily tank mixed and applied with other treatments in the BioActive range



Application guidelines;

Apply 20 - 40 litres per hectare diluted in 400 litres of water as required

Do not tank mix where instructions for other manufacturer's product(s) advise **against** use with stickers, wetters or other adjuvants.

Available in 10 litre containers

best quality, best service, best value



BioActive CT Activators

Compost Teas have been used for many years throughout the world and with significant benefits when brewed and used with education and understanding. Angus Horticulture is pleased to encourage this use of natural biology and by using **Angus BioActive CT Activators** turf managers can easily produce high quality and economical compost teas.

- **Boost natural microbial content in root zones**
- **Increasing root mass**
- **Reduce damage from disease**
- **Enhanced nutrient assimilation by the plant**
- **Maintain healthy microbiology in the turf root zone environment**
- **Improves disease resistance & stress tolerance**
- **Safe & ideal for regular application throughout the growing season**
- **Improves soil / root zone structure**

In order to get the best from any compost tea brew, it's important to add to the mix ingredients that encourage the specific type of biology that you're looking to mobilise; that's what **Angus BioActive CT Activators** facilitate. We advocate using compost from your own site (the best is often found under trees) where local strains (rather than imported foreign strains) of beneficial fungi & bacteria are likely to be the best for your environment. Where this isn't available Angus Horticulture can supply a high quality VermiCompost. With compost in the brewer, then choose a fungal or bacterial brew and add the required CT Activator.

CT Activator Fungal

A probiotic blend of humates, amino acids and plant extract proteins formulated to encourage the activity and increase of beneficial fungi

Application rates: Up to 500 litres of compost tea, use 1 litre of **BioActive CT Activator**
500 – 1,000 litres of compost tea, use 2 litres of **BioActive CT Activator**

CT Activator Bacterial

A probiotic blend of mainly plant extract carbon & hydrogen formulated to encourage the activity and multiplication of beneficial bacteria

Application rates: Up to 500 litres of compost tea, use 1 litre of **BioActive CT Activator**
500 – 1,000 litres of compost tea, use 2 litres of **BioActive CT Activator**

Available in 2 litre containers (12x 2 litres / outer)

best quality, best service, best value





BioActive RZ™

Balanced consortium of mycorrhizae fungi

Increased mineral nutrient uptake, pest & disease resistance, increased plant stress tolerance

BioActive RZ™ combines beneficial microbes with a vegetable based source of continuous release micro-nutrients, trace minerals, fulvic and humic acids. **BioActive RZ™** is carefully graded to ensure each particle contributes to the retention of moisture and nutrients in the soil. Mycorrhizae establish a symbiotic relationship with turf grass roots and a strong establishment results in mycorrhizae taking up nutrients from a far greater area than roots can reach. Mycorrhizae function in low pH environments and nutrient uptake is not affected by pH fluctuations in sand root zones. Mycorrhizae also provide a barrier to soil pests, e.g. nematodes, and help to control this important pest through their own defence capabilities.

Benefits of **BioActive RZ™**:

- **Applied nutrients are used more efficiently, particularly in low pH root zones**
- **Enables turf roots to make better use of water**
- **Protection from pest & disease attack**
- **Increased establishment of new turf grass surfaces**
- **Increase plant stress tolerance & recovery**
- **Increased root mass and plant growth rates**



Application Guidelines

Pre-seeding or laying new turf – apply at 1 - 2 tonnes per hectare to seed-bed before final preparation for sowing or laying turf

Established turf – apply at 0.5 - 1 tonne per hectare after aeration

Available in 20kg bags & 1,000kg bulk bags

best quality, best service, best value



BioActive Magnet™

High quality clinoptilolite

Retention of nutrients & water and buffering of pH in sand-based root zones; soil improver and remineraliser

BioActive Magnet™ is a high quality clinoptilolite processed from basaltic volcanic ash that contains a useful source of slow release plant nutrients. **BioActive Magnet™** increases nutrient retention and reduces fertiliser requirements in the root zone by increasing the Cation Exchange Capacity (CEC) and establishing a replenishable nutrient supply. The dimensions of the channels are large enough to enable molecules as big as a few tenths of a nanometer to penetrate, while small enough not to capture large complex molecules such as amino acids, vitamins and other biological macromolecules. The framework of clinoptilolite acts as a selective adsorption sieve that some molecules escape and others will not. Moisture retention is also increased because of the porous structure of the material. **BioActive Magnet™** maintains and improves the ability of the root zone to drain, provide aeration and to withstand intense traffic.

BioActive Magnet™, applied either by top dressing to existing turf grass surfaces, or used as an amendment on new constructions, has the following benefits;

- **Helps to establish soil microbe populations**
- **Adsorption of soluble nutrients leads to reduced leaching to water courses**
- **Holds nutrients & moisture as plant available and prevents leaching**
- **Porous granules increase soil aeration resulting in healthier turf and greater oxygen availability**
- **Improves seed germination rates**
- **Robust granules resist soil compaction**



In addition, the use of **BioActive Magnet™** as a perch layer on top of course backfill when installing drainage systems will minimise the loss of nutrients to ground water, helping to reduce nitrogen pollution and eutrophication.

BioActive Magnet™ 0.5 – 1mm *other sizes available to order*

Contains: Potassium (K), Calcium (Ca) and Magnesium (Mg) in slow release form

Application: Apply at any time of year

Apply to root zone before seeding or turfing

1 – 4 tonnes / hectare

Apply by itself or mixed with top dressing after aeration and brush into root zone

0.5 – 1 tonne / hectare

BioActive Magnet™: naturally occurring hydrated alumino-silicate of alkaline metals and alkaline earth metals of volcanic origin. The structure of clinoptilolite consists of three-dimensional framework which consists of silicate tetrahedrite (SiO₄)⁴⁻ each interconnected via oxygen atoms; the atoms of silicon is replaced by aluminium (AlO₄)⁵⁻ way, creating a characteristic spatial structure with a significant incidence of cavities, interconnected by channels, in which metal cations, or water molecules are stored. Experiments show that by adding 15% **BioActive Magnet™** to sand the water holding capacity increases by 45-50%.

Available in 20kg bags and bulk bags

Angus Horticulture Product Guide



BioActive Thatch Reduce™

A carefully selected amalgamation of fungal & bacterial species formulated to efficiently break down thatch. Provided in an easily applied dispersible powder, this product will effectively remove unwanted organic matter, releasing humus and nutrients to the root zone.

- Effectively reduces thatch in all sports turf situations
- Optimises organic matter degradation
- Increases humus content in the root zone
- Releases nutrients for plant assimilation
- Improves root zone structure
- Reduces requirement for mechanical thatch removal, so less playing surface disruption
- Prevents build up of excessive organic matter in turf grass surfaces

BioActive Thatch Reduce™

Apply at times when soil temperatures are above 7°C

Minimum 250g (max. 1kg) BioActive Thatch Reduce™ in 200 – 300 litres of water / ha

For best results apply BioActive MolTurf® @ 20 litres/ha soon after application of BioActive Thatch Reduce™

Further applications at minimum 4 week intervals may be required where thatch is particularly prevalent.

BioActive Thatch Reduce™ is not a fertiliser and should be used as part of a fully planned and monitored fertility programme.

Available in 1kg sachets

best quality, best service, best value



BioActive AquaClear™

A combination of natural bacteria that restrict availability of nutrients to algae in water. BioActive AquaClear™ uses natural bacterial ability to utilise phosphorus and nitrogen compounds for growth. Organic wastes of pond life and fertiliser run-off results in soluble phosphorus and nitrogen that stimulate the overgrowth of algae.

- Helps maintain balanced eco-system in lakes & ponds
- Prevents the development of algae bloom
- Reduces harmful organic waste
- Maintains healthy, clean & clear water

Bacteria can use very simple compounds as food nutrient sources. They actively grow on fertiliser and excreta. Nitrogen and phosphorus are used by bacteria in very similar ways to that of simple plants, such as algae. Unlike algae, most bacteria do not require sunlight for energy and some do not even need oxygen. The breakdown of carbon compounds in the environment provides the energy needed for bacteria. These carbon compounds, if derived from solely organic sources, may not be adequate for metabolism of large amounts of nitrogen and phosphorus. Bacteria require a balanced diet complete with micronutrients for optimum growth. BioActive AquaClear™ provides these missing components along with strains of bacteria that can naturally metabolise the excess nitrogen and phosphorus in the pond eco-system.

By deriving energy from carbon compounds rather than from photosynthesis, bacteria can work day and night, thus they do not cause diurnal variation in dissolved oxygen characteristic of large algae populations. This nutrient removal ability without the need of sunlight, gives bacteria a substantial advantage in the utilisation of nutrients. BioActive AquaClear™ is not an algaecide, it is a blend of natural micro-organisms and growth accelerators that remove excess nutrients from the water column.

Some bacteria known as facultative anaerobes do not require free nitrogen and grow by utilising compounds such as Nitrate (NO₃) as an oxygen substitute in their metabolic process. These bacteria not only use ammoniacal nitrogen as a building block but by using nitrogen compounds as an energy source they also help to maintain a balanced pond eco-system by limiting the levels of nitrogen compounds. Bacteria will help eliminate many harmful components that may be found in pond water. Clean and clear water with the extra bonus of increased oxygen content are some benefits of the bacterial treatment.

BioActive AquaClear™

Application Guidelines

Apply directly to area to be treated; this product should not be pre-hydrated.

Initial dosage:	2.2kg per 1,000 m ³
Maintenance dosage:	368g per 1,000 m ³

The maintenance dosage should be applied every two weeks until desired results are achieved

BioActive AquaClear™ may cause temporary elevation in demand of oxygen during initial use.

Available in 250g sachets

best quality, best service, best value

Angus Horticulture Product Guide



BioActive AcidipHier™ & BioActive Liquid AcidipHier™

A concentrated, naturally occurring, organic chelating agent that promotes healthy plants and is fundamental to all aerobic lifeforms. Complexing with metallic cations BioActive AcidipHier™ improves nutrient uptake and is transported throughout the plant affecting a wide range of plant functions promoting health & vigour.

- Promotes metabolism of beneficial microbes
- Chelates or complexes nutrients increasing availability to the plant
- Improves plants tolerance to environmental and biological stresses
- Results in stronger & healthier plants
- Concentrated natural formulation for best results
- Available as a soluble crystal for easy dissolving and low cost application
- Contains 2-hydroxypropane-1,2,3-tricarboxylic acid hydrate (C₆H₈O₇.H₂O)

BioActive AcidipHier™

Apply at times when plant health is of most importance: 30kg / ha in 300 - 600 litres of water

Or at times of increased plant stress: 40kg / ha in 300 - 600 litres of water

Available in 25kg bags

BioActive Liquid AcidipHier™

Apply at times when plant health is of most importance: 120 litres / ha in 300 - 600 litres of water

Or at times of increased plant stress: 160 litres / ha in 300 - 600 litres of water

Available in 10 litre bottles

A vitamin supplement which in turn creates a stronger host enabling it to create pathogeneses related protein which have an enormous effect on creating lignin by molecular crossing in cell which adds to pathogen protection.

This product can also be used for acidifying water and reducing bicarbonate content; dose rates are specific to water source and can only be offered on sight of recent source water analysis results. NB: It's important to ensure that bicarbonate content is not allowed to drop below 50mg/l.

best quality, best service, best value



Angus Sports Turf Root Developer

Now part of the BioActive range – BioActive Root Developer

For Rapid Development and Lower Cost Maintenance of Seeded or Turfed Sports Surfaces

Angus Sports Turf Root Developer is a high quality inoculant containing naturally occurring beneficial soil microbes including native symbiotic arbuscular mycorrhizal fungi (AMF); Trichoderma fungi spp.; beneficial bacteria spp.; humic, fulvic and amino acids as well as complex carbohydrate. Angus Sports Turf Root Developer provides an ideal solution for populating root zone soils and establishing biological activity.

Our product offers the following benefits:

- **Faster grow in and establishment of new greens and pitches**
- **Promotes establishment and longevity of fine grasses**
- **Stimulates and promotes root growth increasing root mass**
- **Enhances nutrient uptake**
- **Increases plant tolerance to drought and stress conditions**
- **Healthy grass is less susceptible to damage and recovers faster from disease**

Angus Sports Turf Root Developer

Application: 1-2kg/ha incorporated into the top 10mm of the root zone immediately before seeding or turfing. For an existing sward, micro tine the turf and apply at 1kg/ha diluted in 200 – 400 litres of water (at 10 – 15 °C) and use low pressure application equipment. Water in immediately and again the following day in the absence of rain. Apply during the growing season only and while soil temperatures are 8 °C or above. Grass grown in a biologically active root zone needs less fertiliser, especially lower phosphate values than usual. We recommend that available phosphate does not exceed 15ml/kg in the soil.

The soil in new sand-dominated sports pitches is almost sterile. **Angus Sports Turf Root Developer** contains live spores of beneficial mycorrhizal fungi, growth-promoting soil fungi and bacteria, carbon, and organic soil nutrients to kick-start the soil's natural food web. This is essential for rapid establishment of newly seeded or turfed areas and to improve grass root growth and stress recovery.

Mycorrhizae are essential for grass health, attaching to the roots, they can increase the surface area for nutrient and water uptake by over 300%.

Bent, fescue and rye grasses rely heavily on mycorrhizal and other soil fungi for survival in nature. In sports turf, levels of mycorrhizae are low or non-existent due to near sterile soils, compaction, chemical and high inorganic nutrient use. The result is a weakened sward, which suffers more from drought stress, nutrient leaching, and disease and is quickly dominated by *Poa annua*, a grass that relies less on mycorrhiza for its survival in sports turf environments and more on seed head production.

Precautions: Mycorrhizal fungi are susceptible to some systemic fungicides that may adversely affect activity. Mycorrhizal fungi are effective in the soil with a pH between 3.5 & 8.0. For best results use low salt fertilisers; e.g. **Turf Rise Granular** or **BioActive ProloNg™ mini** or **micro** low salt fertilisers.

best quality, best service, best value



Angus Amino Acids Now part of the BioActive range; BioActive Amino Acids

Balanced Range of Amino Acids in a Fully Soluble Powder Form

Until the 1990s, scientists thought plants could only absorb nitrogen in inorganic forms. It is now known that they can absorb organic nitrogen too and applying amino acids can markedly improve plant growth and health. However, not all amino acid products are created equal and some can actually harm your crop!

Angus Amino Acids

- Highly concentrated source; 64% amino acid
- Natural L-isomers only; plants can use these directly in the production of proteins
- High quality blending of amino acids; this is essential to prevent toxic 'feedback inhibition' which occurs when applying single compound treatments. Angus Amino Acids are particularly high in glutamine; known to be essential for optimizing the partitioning of nitrogen to maximize yields.
- Low salt formulation
- Contain useful levels of N, P & K (N 10% : P₂O₅ 3.6% : K₂O 8%)

Solutions of Angus Amino Acids provide a bioavailable nutrient source for a wide variety of crops. Regular foliar application provides:

- **Strong and sustainable vegetative growth**
- Increased crop yield and quality
- **Improved resistance to environmental stresses**
- **Enhanced disease resistance**
- Increased Brix levels in fruit crops

Angus Amino acids content % dry weight

Alanine	4.88	Lysine	6.19
Arginine	6.48	Methionine	1.11
Aspartic Acid	5.80	Phenylalanine	2.51
Glutamine	9.00	Proline	2.57
Glycine	2.82	Serine	2.82
Histidine	1.23	Threonine	2.88
Isoleucine	2.90	Tyrosine	1.60
Leucine	4.30	Valine	6.23

Angus Amino Acids balanced range of amino acids in a fully soluble powder form

Application rate: 150g/ha every 10-14 days during growing season
Dissolve in sufficient water to get good leaf coverage and spray to run-off

Available in 250g & 1kg packs

Angus Amino Acids can be used in combination with other foliar applied products. No known incompatibilities exist but Angus Horticulture Ltd cannot predict or guarantee mix success for any product. Always conduct a bucket test to conform compatibility. Do not store dilute solutions for more than three days and clean out spray equipment with fresh water after use. Follow handling, storage and transportation procedures as outlined in MSDS.

best quality, best service, best value



Angus Seaweed Meal

Angus Seaweed Meal is 100% *Ascophyllum nodosum* harvested from the Atlantic Ocean.

Our product offers the following benefits:

- Promotes stress resistant healthy sward
- Increases soil fertility
- Reduces requirements for chemical fertiliser
- Useful source of organic carbon
- Contains carbohydrates, amino acids, protein and vitamins all essential for healthy soils
- Ideal content of N & K and lower in P than many of the typical NPK ratios in chemical fertilisers
- Carbohydrates in *Ascophyllum nodosum* improves aeration & soil structure, especially in clay soils.
- Excellent moisture retention properties

Angus Seaweed Meal

0.5 - 1 mm

Typical analysis: N 0.6-2%, P 0.1-0.3%, K 2-3%, Ca 1-3%, Mg 0.5-1% + Trace Elements including: Cu 1-10ppm, Mn 2-10ppm, Se 0.1-0.5ppm, Zn 10-100ppm

Containing: Alginic Acid 15-26%, Proteins 5-10%, Amino Acids

Rates of Application: 35-70 g/m² applied to the root zone in spring & autumn 20kg bag treats 286-571m²

We recommend that this product is used in the root zone before seeding or turfing or with a top dressing into hollow cores after aeration

Angus Seaweed Meal: top dress, turf feed & soil conditioner

Alginates, present in seaweed meal at levels of between 15% & 26% which increases microbial populations. It is well documented that the soil health and associated plant growth is directly proportional to the presence or absence of soil microbes. Alginates also absorb large volumes of water thus increasing the moisture in the soil.

Plant Hormones: Amino acids are a major constituent of **Angus Seaweed Meal** and are the essential, basic components of proteins. A range of plant hormones including cytokinins and biochemical compounds are also abundant in **Angus Seaweed Meal**. These substances significantly increase the protein content in grass and stabilise leaf proteins. Cytokinins are involved in many plant processes, including cell division and shoot and root morphogenesis. They are known to regulate axillary bud growth and apical dominance. The "direct inhibition hypothesis" posits that these effects result from the cytokinin to auxin ratio. This theory states that auxin from apical buds travels down shoots to inhibit axillary bud growth. This promotes shoot growth and restricts lateral branching. Cytokinin moves from the roots into the shoots, eventually signaling lateral bud growth. Simple experiments support this theory. When the apical bud is removed, the axillary buds are uninhibited, lateral growth increases, and plants become bushier. Applying auxin to the cut stem again inhibits lateral dominance.

Angus Seaweed Meal is used to **condition soils**; as it breaks down it gently releases nutrients. Alginates, which are unique to seaweeds act to improve the structure of clay soils whilst increasing the water holding capacity of sandy soils. Seaweed is rich in trace elements essential to plants. **Angus Seaweed Meal** feeds lightly and will not produce excessive growth.

best quality, best service, best value

Angus Horticulture Product Guide



Angus HumiGranule™

Our **HumiGranule™** is granulated using naturally occurring **Leonardite** that is rich in humic substances. It contains both Humic and Fulvic acids.

- Improves soil structure; including water retention and aeration of rhizosphere
- Increases nutrient exchange and retention, CEC within root zones
- Stimulates microbial growth and biomass production in the rhizosphere
- Improves nutrient absorption & increases nutrient uptake, especially micro nutrients
- Stabilizes pH
- Increases stress tolerance within the plant
- Increases root development, respiration & vertical (downward) growth
- Improves seed germination
- Easily applied through fertiliser spinners or top dressing equipment
- A source of energy for soil microbes (especially beneficial fungi) present in the root zone
- A source of organic carbon necessary for healthy root zones
- Enhances shoot and root growth in turf
- Greater chlorophyll content
- Reduces soil erosion
- Reduces salinity in soil, neutralising toxins

Angus HumiGranule™

Typical humus content:	60%	
Cation Exchange Capacity (CEC):	400 meq / 100g	Granule size: 1 – 2 mm or 1 – 5 mm
Rates of application to be applied in 4-6 equal monthly applications:		
	Greens	400 kg / ha annually
	Tees, fairways and sports pitches	400 kg / ha annually

Angus HumiGranule™ is a soil amendment and not a fertiliser. As such it should always be used as part of a standard fertility program. Always read and follow label instructions.

Available in 16kg bags



best quality, best service, best value



Gypsum Granules

Gypsum, also known as **calcium sulphate**, has been widely used in farming for many years. Angus Horticulture are now able to offer the amenity sector superb granular gypsum that is ideal for flocculating clay soils to reduce and prevent water logging as well as offering additional benefits:

- Improves soil/root zone structure, aeration and drainage
- Creates friable soil and builds deeper top soil/root zone
- Reduces soil compaction and cracking, decreases swelling of clays
- Reduces surface crusting and improves seedling emergence
- Excellent source of calcium [Ca] and sulphur [S]
- Does not alter soil/root zone pH
- Increases microbial activity
- Stabilises organic constituents of soil and amends sodium affected soils

Gypsum

2-5mm granules

Contains: calcium oxide [CaO] 39% [28% Ca] & sulphur trioxide [SO₃] 55% [22% S]

Rates of Application: 50g/m² – use higher rates for acute areas of soil compaction/water logging
Apply at any time of year, preferably when the soil is moist
500g/m² when incorporating into the root zone

Available in 20kg or 25kg bags and bulk bags – a lead time applies, please order early

Lime Granules

Our granular lime is used to manage pH in soils and offer additional benefits:

- Immediate pH adjustment with rapid absorption on contact with soil moisture
- Increasing availability of plant nutrients; increasing utilization of expensive fertiliser
- Useful source of calcium (Ca) and magnesium (Mg)
- Easy application with standard fertiliser spreaders for even and accurate spreading
- Easy product handling even in windy conditions – less product = less handling
- Up to five times more efficient than ordinary ground limestone

The greater reactivity of the ultra-fine lime particles that we use ensures a higher and more rapid pH adjustment. Test results showed that this increased efficiency can last for 200 days and beyond.

Calcium Carbonate CaCO₃

2-5mm granules

Total Neutralizing Value [TNV]: 54%

Contains: calcium oxide [CaO] 42.5% [30% Ca] & magnesium oxide [MgO] 6.8% [4% Mg]

Rates of Application: 60 – 200kg/ha [6-20g/m²] depending on soil type for adjustment of pH by **0.1**
300 – 1000kg/ha [30-100g/m²] depending on soil type for adjustment of pH by **0.5**

Always test your soil/root zone to determine lime requirements

Available in 20kg or 25kg bags and bulk bags

best quality, best service, best value



Angus Turf Tonic

Fish Blood & Bone 8-8-7 + TE

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

Angus Turf Tonic is an organic liquid fertiliser formulated specifically to provide efficient use of nutrients and a fast response, boosting colour and promoting healthy growth safely. Easily tank mixed and works well on all grass types to produce the best results when used in conjunction with the provision of all necessary plant nutrients and soil requirements.

Fish Blood & Bone Liquid Suspension 8-8-7 + 1.3% CaO + 0.3% MgO + 2.7% SO₃ + Trace Elements, B, Cu, Fe, Mn, Mo & Zn

Rate of Application: 20 litres / hectare in 200 - 500 litres of water, monthly
Use lower rate (15lt/ha) if increase in growth is not required, or if using frequently at 10 - 14 day intervals over a period of several months

Application timing: Safe to use at any time, use with other sprays for efficiency
Use when plant has an urgent requirement for nutrients
Use at times of plant stress including water logging

Application method: Best used as a foliar feed but also effective used as root zone drench

Benefits

- Extremely efficient source of essential plant nutrients, promoting strong, lush and healthy growth
- Provides a kick start to growth, particularly in cold, wet or waterlogged conditions
- An excellent plant tonic giving a boost/perk to the plant at any time
- Helps as a sticker/spreader to other foliar nutrients, improving their efficacy
- Organic fertiliser, formulated from fish meal and kali-vinasse for foliar or liquid feeding
- Suitable for all crops, providing a compliment of essential plant nutrients including Calcium
- Rapid take up by foliage and roots
- Gives quick return to healthy colour
- Organic constituents (proteins, amino acids & globulins) decompose slowly to provide additional nutrient release and improved microbial activity in the root zone
- Non scorching and ideal for seedlings and stressed plants
- Contains natural growth promoters; gibberellic acid and triacontanol

Available in 10 litre containers

best quality, best service, best value



Angus Phosphite

Potassium Phosphite 4-25-16 w/w

Angus Phosphite is formulated specifically to encourage healthy growth, good colour, fast root establishment and disease resistance. Easily tank mixed with a wide range of plant nutrients and crop protection products **Angus Phosphite** works on all grass types to produce the best results when used in conjunction with the provision of all necessary plant nutrients and soil requirements.

Angus Phosphite

4-25-16 w/w – phosphorus with a difference

Rate of Application:

5 litres / hectare in 200 – 500 litres of water

Application timing:

monthly or 10 – 14 day intervals at times when rooting is to be encouraged or at times of particular disease pressure or for winter protection

Application method:

Best used as a foliar feed but also has benefits used as a root drench

Benefits

- Increased plant and root development
- Provides a quick start to rooting even in cold & wet conditions
- An excellent plant tonic giving a boost/perk to the plant at any time
- Thickens cell walls, increasing plant health and reducing susceptibility from cold and disease pressure
- Phosphite [PO₃] is highly mobile within the plant, especially in the phloem and therefore very efficient
- Safe to use
- Compatible with most agrochemicals

Unlike nearly all the phosphorus that is widely used in horticulture and agriculture this phosphorus is not in the form of phosphate! It is instead a much more freely available and highly mobile within the plant form called phosphite; just one less oxygen molecule [PO₃ not PO₄] making a huge difference to the efficiency of that phosphorus applied. Best applied as a foliar application it is quickly absorbed translaminally, mobilized in the phloem and taken to the roots where root activity is increased, root growth promoted and nutrient uptake through the roots improved.

A chain reaction within the plant stimulating phytoalexins, SAR genes, etc., result in thicker cell walls meaning that plants are stronger, hardier and better able to withstand stress from disease pressure. Our turf tonics are not fungicides, but it may be possible to reduce the use of fungicides when used in conjunction with potassium phosphite. Please consult your FACTS & BASIS qualified Angus Horticulture agronomist for further advice.

Phosphite delivers essential phosphorus in a form that helps to boost plant health by maximizing enzyme potential to fight off infection in periods of stress from disease.

When tank mixing, bucket test first to ensure compatibility.

Available in 10 litre containers

best quality, best service, best value



Angus PotSi™

Enhances the grass plants growth, strength and health

14%w/w potassium oxide (K₂O), 7% silicon (Si) + humates

When it comes to plant nutrition silicon (Si) is often referred to as the forgotten element. In fact silicon plays a vital role within plant structure improving plant growth, strength and health.

When silicon enters the plant it accumulates around the epidermis of roots and shoots where it forms a silicon gel that, in combination with calcium and pectins help to strengthen and stabilise cell walls. The silica moves between cell walls and is also laid down in the epidermal cells. Silica is deposited in the endodermis of roots.

The presence of silica in the plant decreases evapo-transpiration thus improving tolerance to heat and drought.

Tests have shown that plants deposit silicon at the site of fungus infections to combat penetration of cell walls by fungal spores. Silicon maximizes plants' natural production of phytoalexin compounds which resist invasion by pathogens.

The use of Angus PotSi™ is formulated for fast and effective assimilation into plant tissues

This product is safe to use on a wide range of plants as well as amenity grass, please contact your Angus Horticulture advisor for specific recommendations.

Angus PotSi™ offers the following benefits:

- **Stronger plant growth**
- **Thicker cell walls**
- **Improved leaf erectness**
- **Reduction in the likelihood of iron (Fe) and manganese (Mn) toxicity**
- **Reduces susceptibility to attack from pathogens & sucking insects**
- **Increases resistance to water and temperature stress**

Angus PotSi™ potassium and silicon for use on amenity turf

Application rates: 5 litres / ha in 500–800 litres of water

Available in 10 litre bottles

Excellent source of **silicic acid**

Products of integrity!



Angus Potassium Acetate

A unique, high analysis potassium foliar feed containing liquid energy providing rapid response in turf. Potassium acetate is absorbed by the grass plant providing a boost to plant vigour and stimulating soil biology. This helps to improve rootzone health, reducing disease susceptibility within the plant and improving nutrient assimilation.

Ideal for autumn and winter applications treated turf is energized and regular treatments ensure healthy levels of potassium (K) are supplied to the plant. The result being healthy grass plants with turgid cells; strong and ready for cold weather and potential disease pressure.

Benefits include:

- **Liquid formulation for easy handling and application**
- **5x more efficient plant utilization**
- **Formulated for speedy plant uptake and maximum effect**
- **Tougher plants for healthier sward**
- **High K formulation for lower application requirements**
- **Highly soluble K source that's mobile within the plant**
- **Reduced risk of phytotoxic response**
- **Increased biological activity in rootzone**

Angus Potassium Acetate

0-0-31 w/v (24% K₂O w/w) (25.7% K w/v - 19.9% K₂O w/w)

Application rates: Spray according to plant requirements

20 litres Angus Potassium Acetate / ha in 300 – 600 litres of water

Products of integrity!

best quality, best service, best value





Angus Robust™

Formulated to strengthen turf and increase the plant's ability to withstand stress, Angus Robust provides fast uptake calcium & magnesium producing a tougher plant better able to withstand pressure from disease.

Angus Robust™

Calcium & magnesium in nitrate form

Application rates:

20 - 40 litres / ha in 300 - 400 litres of water

For use on all turf surfaces

Available in 10 litre containers

Bio SeaHum™

Liquid biostimulant containing seaweed extracts and humic acids formulated to reduce plant stress and improve plant health. High quality constituents provide essential amino acids, plant hormones, humic & fulvic acids, carbohydrates and low levels of nutrients ensuring healthy and vigorous plant growth. Rooting is also enhanced; complexed magnesium (Mg) is supplied.

Bio SeaHum™

Biostimulant with seaweed extracts and humic acids + Mg

Application rates:

20 - 40 litres / ha in 300 - 400 litres of water

For use on all turf surfaces

Available in 10 litre containers

Angus SeaAmino™

High quality seaweed extracts fortified with essential amino acids for promotion of healthy swards, sustaining strong growth, improved resistance to environmental stresses and enhanced disease resistance.

Angus SeaAmino™

Quality seaweed extracts fortified with amino acids

Application rates:

7.5 - 10 litres / ha in 300 - 500 litres of water

For use on all turf surfaces

Available in 10 litre containers

best quality, best service, best value



Angus Downcast™

A non-pesticidal, plant nutrient based liquid that improves turf health and encourages casting worms away from sward surface, thus reducing surface casts.

In the past various products have been used to help reduce worm casts on the surface of fine turf; many of these have been known pesticides, others damaging to the environment, now we have an alternative: **Angus Downcast™**

- **Helps root zone structure by encouraging worm activity well below the sward surface**
- Contains low levels of nitrogen (N), sulphur (S) and iron (Fe)
- **Rapid plant green up**
- No growth flushes as a consequence of using Angus Downcast at recommended rates
- **Huge reduction in worm cast production on sward surface**
- Low scorch potential
- **Easily applied through standard spray equipment**
- Increases stress tolerance within the plant
- **Contains spray indicator dye**
- Encourages chlorophyll production within the leaf
- **For use on any grass surface where worm casts cause a problem**

Angus Downcast™

Application rates:

1st application of the season (Sept – March): 20 litres / ha in 250 - 400 litres of water
Re-apply fortnightly if problem re-occurs: 10 litres / ha in 250 – 400 litres of water
(sand based root zones may require more frequent application; suggest 10 day intervals)

Allow 2-3 days from application to begin to see the benefits of reduction in surface casts. *Reduce time between applications if very wet.* Best to avoid application immediately prior to rain and re-apply after rain.

Available in 10 litre containers

Angus Downcast™ is a soil amendment and not a fertiliser and it should always be used as part of a standard fertility program. Always read and follow label instructions.

best quality, best service, best value





Angus AquaEasy™

Our revolution in water management for all amenity turf, **Angus AquaEasy™** offers both **soil penetrant** qualities and the ability to aid **water holding capacity**, thereby improving **water movement** through the root zone and improving **water distribution** within the root zone.

Angus AquaEasy™ is an important and valuable water management tool suitable for use in all root zones. This surfactant penetrant and block co-polymer new ‘generation technology’ helps to prevent or disperse dry patch, reduce water related plant stress, reduce the requirement for irrigation and ensure even water distribution throughout any root zone.

Research worldwide has shown the initial cause of dry patch is the build-up of naturally produced waxes and lipids around the sand/soil particles. When these coated sand/soil particles dry out they become hydrophobic (water-repellent) and the root zone is unable to hold water. Dry patch usually appears during periods of dry weather as small isolated patches of thin, stressed water repellent turf. The symptoms can affect all turf grass species but initially are more apparent on the shallower rooted species i.e. annual meadow grass where total die back of the plant can occur very quickly.

Beneath the surface in these affected areas the soil is extremely dry and will not easily re-wet. Research in the UK has shown that the build-up of waxes and lipids around the sand/soil particles that cause dry patch are concentrated at the soil thatch interface and this area is referred to as the hydrophobic zone.

Angus AquaEasy™ offers the following benefits:

- **Improves water penetration**
- **Improves water distribution**
- **Helps to prevent dry patch or helps to overcome dry patch**
- **Reduces water related plant stress**
- **Reduces the requirement for irrigation**
- **Effectively disperses dew & guttation**
- **Encourages a healthy balance of air & water in the root zone**
- **Provides an improved environment for healthy root growth**

Angus AquaEasy™ wetting agent for use on amenity turf

Application rates:

500m ²	500 ml of product in 15 litres of water - (approx. 500 ml AquaEasy™ /green)
5,000m ²	5 litres of product in 150 litres of water
1 ha	10 litres of product in 300 litres of water

Available in 10 litre containers – 200 litre and 1000 litre containers also available

best quality, best service, best value



Angus Premium Blue

Our **concentrated Blue Spray Pattern Indicator Dye, Angus Premium Blue** is a water soluble product for temporary highlighting of treated/sprayed areas and helps to flag up missed areas, blocked nozzles or areas of application overlap.

- **Concentrated formula for effective and economic application**
- **Highly visible spray coverage**
- **Water soluble to ensure no permanent staining**
- **Missed areas are quickly & easily identified**
- **Reduces risk of overlapping**
- **Quickly shows up spray inaccuracies & inefficiencies for immediate correction**
- **Non-irritant formulation**

Angus Premium Blue

Concentrated Blue Spray Pattern Indicator

Application rates: 125ml / 100 litres of spray solution
1 litre / 800 litres of spray solution

Compatible with most amenity spray products, but we always recommend testing first!

Available in 1, & 10 litre containers

best quality, best service, best value



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