

# Fertilisers

## Roots Turf Food – Granular Fertilisers 20kg

- Outstanding and consistent colour response
- Improves turf density and root mass
- Minimal roller and mower pickup
- Low soluble salts minimise any burn potential
- Improve drought stress tolerance

### Specifications

ROOTS® Turf Food is a proprietary all-in-one nutrient delivery system designed to feed the plant, and to enhance the biological life of the soil and plant ecosystem.

The Roots Turf Food formulation is the unique combination of three component technologies which provide a synergistic benefit to plant health. They are:

**Premium Organic-Based Components** – selectively formulated from the finest animal meals. All-organic feather meals form the basis for Turf Food’s ability to feed and enhance soil microbial activity while providing a balanced fertility base for turf nutrition. A high percentage of

the contents by weight are amino acids – which are excellent biological stimulants and food for microbes. In addition, a complex of macro and micro-nutrients and carbohydrates are provided in a more natural form than synthetic fertilisers. The ROOTS manufacturing process also provides a product which degrades easily – minimizing roller and mower pickup common to manure-based products.

### ROOTS® Biostimulant Complex

– pioneering work in the development of biostimulants has placed ROOTS in a leadership position in the industry. The package of stress reducing compounds has been proven over the course of many years on professional turf worldwide.

The ROOTS package is a proprietary formulation of amino acids, vitamins, humic acids, sea kelp extracts and other ingredients.

**Novozymes’ Beneficial Microbes** – specific, naturally-occurring microbial strains have been selected for their individual contribution to plant performance. Each strain is grown under the exacting quality regimen of the ISO 9001:2000 Quality



Management System to assure purity and repeatability of results. Novozymes has been awarded a U.S. Patent on these strains given their novel and synergistic benefits when combined.

## ROOTS TURF FOOD

	14-3-5	15-3-8	20-2-8
Fine Grade (100 SGN)	●	●	
Coarse Grade (200 SGN)	●	●	●
Kg product/100m <sup>2</sup>	1.7 to 3.4	1.6 to 3.2	1.6 to 3.2
M <sup>2</sup> /20kg bag	600 to 1200	650 to 1250	650 to 1250
Nitrogen Breakdown	Total Nitrogen (N) 14% 3.5% Ammonical N 4% Water Insoluble N 6% Urea N 0.5% Slowly Available Water Soluble N	Total Nitrogen (N) 15% 0.75% Ammonical N 7% Water Insoluble N 1.75% Urea N 2% Water Soluble Organic N 3.5% Slowly Available Water Soluble N	Total Nitrogen (N) 20% 0.9% Ammonical N 6.8% Water Soluble N 3% Urea N 3% Water Soluble Organic N 5% Slowly Available Water Soluble N
Calcium (Ca)	1%	1%	2%
Magnesium (Mg)	0.5%	0.5%	1.2%
Sulphur (S)	4%	1%	2%
Iron (Fe)	4%	1%	2%
Manganese (Mn)	0.1%	0.1%	0.2%
Zinc (Zn)	0.1%	0.1%	0.2%
Copper (Cu)		0.1%	0.2%
Sodium (Na)		0.1%	0.1%



### Finegrade endoROOTS Turf Mycorrhizae 20kg

Mycorrhizal rooting stimulant 3-3-4

- Speeds up grow-in and establishment
- Increases turf density
- Faster recovery from ball marks, divots and wear
- Significantly improves rate of recovery from aeration

#### Specification

FINE GRADE endoROOTS® is dryROOTS® with 200,000 spores and propagules of endomycorrhiza (VAM) and six strains of Novozymes' microbes. Mycorrhizae help plant uptake of nutrients and water, and provide resistance against stress. There are nine species of endomycorrhiza in this product.

Derived from: Poultry manure, ferrous sulphate, and potassium sulphate, kelp meal, humus, vitamins, amino-acids, and endomycorrhiza spores.

\*2.5% slowly available nitrogen from poultry manure.

#### Applications

**Aerification:** Apply 350-500kg/ha. Work material in thoroughly.

**Divot mixes:** Apply 15kg/m<sup>3</sup> to sand divot mix

**Turfing/Seeding:** As a soil prep, use 500kg/Ha applied to soil surface before turf installation or seeding

**New construction/renovation:** Add 9kg/m<sup>3</sup>

### GUARANTEED ANALYSIS

Total Nitrogen (N)	
0.5% Water Soluble Nitrogen (N)	
2.5% Water Soluble Nitrogen (N)	3%
Available Phosphate (P <sub>2</sub> O <sub>5</sub> )	3%
Soluble Potash (K <sub>2</sub> O)	4%
Calcium (Ca)	6%
Magnesium (Mg)	
0.5% Water Soluble Magnesium (Mg)	0.5%
Sulphur (S)	
1.35% Combined Sulphur (S)	1.5%
Total Iron (Fe)	
10% Water Soluble Iron (Fe)	1%

### Roots 1-2-3 Pre-mix 10L

Microbially enhanced plant nutrition

- Deeper roots
- Greater root mass development
- Greener colour without rapid growth
- Improved turf health

**Derived from:** dipotassium phosphate, iron citrate, manganese citrate, urea.

#### Compatibility

1-2-3 Premix is tank mix compatible with soluble fertilisers, herbicides, insecticides, fungicides and absorbent gels. As with all chemicals, read the label for compatibility, and, if practical, test a small amount prior to use with other chemicals. If in doubt, call your local distributor with questions. Tank mixing with materials above pH 10, or with alkaline solutions containing orthophosphate (PO<sub>4</sub>) is not recommended.

#### General Directions For Use

- 1-2-3 pre-mixed concentrate is applied at 20L/Ha every 2 weeks during the growing season
- 1-2-3 pre-mixed concentrate is added to the regular tank mix at a dilution rate of 1:50 or greater. Minimum dilution is 1:20

- This product is intended as a supplement to a regular fertilisation program and may not, by itself, provide all the nutrients normally required by crops or other intended plants

#### Applications

**Greens & Tees** – Maintenance program runs 9-12 months

40L/Ha first application

20L/Ha every two weeks (or 40L/Ha every 4 weeks)

**Sports turf-in season** – 25L/Ha every 10 days

**Overseeding** – Apply: 400ml/100m<sup>2</sup> at two-leaf stage of rye, poa trivialis, or other grass



### Guaranteed Analysis

Total Nitrogen (N)	
1% Urea Nitrogen	1%
Available Phosphate (P <sub>2</sub> O <sub>5</sub> )	2%
Soluble Potash (K <sub>2</sub> O)	3%
Total Iron (Fe)	
2.7% Water Soluble Iron (Fe)	2.7%
Total Manganese (Mn)	
0.3% Water Soluble Manganese (Mn)	0.3%

ALWAYS READ THE LABEL : USE PESTICIDES SAFELY

### TurfVigor 10L

Microbial fertiliser 9-3-6

- Maximises nutrient uptake
- Improves colour & quality
- Maintains root mass under stress conditions
- Accelerates physical damage recovery

TurfVigor® combines patented high impact microbial strains, biostimulants and macro and micronutrients in one formulation. This product is designed to increase turfgrass tolerance to stress associated with temperature, drought, physical injury and other environmental conditions.

**Derived from:** urea, potassium phosphate, potassium hydroxide, kelp extract, chelated minerals (iron, manganese and zinc).

### Applications \*

**Greens & Tees** – Apply 30-60L per Ha every 7-21 days

**Fairways, Lawns, Athletic Fields** – Apply 20L/Ha every 21-28 days

**Renovation & Overseeding** – Apply 60L per Ha, 3 days after seeding, then 40L per Ha every 7 days.

\* Consult product label for additional Application Rate: and frequencies.

It is recommended that this product be applied using 600 to 1000L water per Ha.



### GUARANTEED ANALYSIS

Total Nitrogen (N)	9%
9.0% Urea Nitrogen	
Available Phosphate (P <sub>2</sub> O <sub>5</sub> )	3%
Soluble Potash (K <sub>2</sub> O)	6%
Total Iron (Fe)	
0.60% Chelated Iron (Fe)	0.6%
Total Manganese (Mn)	
0.05% Chelated Manganese (Mn)	0.05%
Total Zinc (Zn)	
0.05% Chelated Zinc (Zn)	0.05%



### Specifications

ROOTS concentrate is an advanced plant supplement that promotes rapid root growth and regeneration for seedlings, cutting, installation and transplanting.

### General Directions for use:

ROOTS concentrate is non -phytotoxic and is formulated for soil or foliar application. It is designed to supplement all fertiliser programs, and can be applied through injection and drip irrigation, fertigation, or sprayer system. Minimum dilution is 1:30 in water. Shake well or agitate before use.

### Applications:

Sports turf, greens, tees – 5L/Ha every 2 weeks or 10L/Ha every 4 weeks

Lawns, Fairways – 10L/Ha twice in spring and once in the autumn.

New seeding, overseeding - 20L/Ha shortly after germination.

Hydroseeding - 20L/Ha at seeding.

### Compatibility

ROOTS concentrate is tank mix compatible with most soluble fertilisers, herbicides, pesticides and absorbent gels. As with all chemicals, read all labels for compatibility verification and, if practical, test on a small area prior to extensive use with other chemicals.

### Roots Concentrate – Seaweed Extract & Bio-stimulant 10L

- Promotes rapid root growth.
- Quicker regeneration for seedlings, cuttings and transplants.
- Helps assure successful transplantings

### GUARANTEED ANALYSIS

Humic Acids	4.6%
Cold Water Kelp Extracts	3.9%
Ascorbic Acid (Vitamin C)	3%
Amino Acids	1%
Myo-Inositol	0.5%
Thiamine (Vitamin B1)	0.3%
Alpha-tocopherol (Vitamin E)	0.1%



### Iron Roots Concentrate 10L

Rooting stimulant 0-2-4

- Fast green up in turfgrass and iron-loving plants
- Promotes better root density

ironROOTS® concentrate is a fully chelated iron fertiliser used to promote root density and colour in turfgrass.

**Derived from:** dipotassium phosphate and iron citrate.

**GENERAL DIRECTIONS** - Apply only as directed.

ironROOTS is non-phytotoxic and is formulated for soil or foliar application. It is designed to supplement all fertiliser programs, and can be applied through injection and drip irrigation, fertigation, or sprayer system. Minimum dilution is 1:30 in water; maximum dilution is not critical.

#### Compatibility

ironROOTS is tank mix compatible with soluble fertilisers, herbicides, pesticides, fungicides and absorbent gels. As with all chemicals, read all labels for compatibility verification and, if practical, test on a small area prior to extensive use with other chemicals. If in doubt, call 01952 641949

**DO NOT APPLY WITH ALUMINIUM BASED FUNGICIDES.**

#### Applications

**Greens & Tees** - Apply 6L/Ha every 2 weeks or 12L/Ha every 4 weeks

**Fairways** - Apply 12L/Ha – twice in spring; once in autumn

**Sports Turf** - Apply 6L/Ha every 2 weeks or 12L/Ha every 4 weeks

**New Seeding** - Apply 18L/Ha – after germination

**Overseeding** - Apply 12L/Ha – after germination

**Lawncare** - Apply 12L/Ha – twice in spring; once in fall

#### Guaranteed Analysis

Available Phosphate (P <sub>2</sub> O <sub>5</sub> )	2%
Soluble Potash (K <sub>2</sub> O)	4%
Total Iron (Fe)	4%
4% Water Soluble Iron (Fe)	4%

## Thatch Reducer

### Thatch-less 10L

Thatch management complex

- Reduce thatch layer by more than 50%
- Effective on cool and warm season grasses
- Tank-mix compatible

#### Specifications

Thatch-less™ aids in thatch decomposition. It is formulated with Novozymes' proprietary blend of bacterial cultures. These are reinforced with an exclusive enzyme sub-strate.

**Derived from:** Trichoderma reesei

#### General Directions for use

- Product efficacy is maximised when air temperature exceeds 13° C.
- If used in conjunction with verticutting or aerating, make applications following these practices to enhance results.
- To ensure colonization of the bacteria, it is better to apply more frequently with less product rather than less frequently with more product.
- Number of applications may vary depending on turf conditions.
- Not a fertiliser substitute.

#### Application rate

Mix 3 fl. oz. of Thatch-less concentrate with 600-1000L of water to treat 1 hectare. Make 3 applications, 10 days apart. For continued thatch control, make further applications at 14 -28 day intervals. Follow applications with routine irrigation practices.

**Novozymes also do a full range of products for tree and shrub planting and maintenance these include Total Tree, Transplant 1 Step, Root Dip Gel, Mycorrhiza Roots, MYCOSpikes 6+10+10 MYCOTabs 20+10+15 please request a copy of our landscape catalogue for more information.**



#### Guaranteed Analysis

0.04% Microbial Cultures	
Bacillus licheniformis	1.35 x 10 <sup>8</sup> cfu/mL
Bacillus subtilis	1.65 x 10 <sup>8</sup> cfu/mL
24.1% Cellulase Enzymes	700 EGU*/g

\*EGU = Endo-Glucanase Units

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## Turf Hardener



### Roots Stand-Up

Soluble silica complex

1. Easier mowing cut
2. Stiffens leaf blades
3. Better ball roll

### Specifications

0 - 2 - 12 StandUp® concentrate is a proprietary formula of silica, potassium, and humic acids as the active ingredients. Silica hardens the leaf and potassium builds carbohydrate reserves. The main sources of potassium are tri-potassium phosphate and potassium silicate.

**Derived from:** potassium silicate, tri-potassium phosphate, potassium hydroxide.

**Also contains the following ingredients:**  
1.52% Humic Acids

### Applications

**Greens & Tees** – 10L/Ha every 2-4 weeks throughout the growing season

**Fairways** – For tournament preparation, apply 2-4 days before the tournament date for maximum results.

**Sports turf** – One 10L container will treat 1 hectare of greens or sportsfields.

### Compatibility

Do not add to low pH mixtures. StandUp has a high pH and must not be mixed with acidic or acid-producing chemicals.

### Guaranteed Analysis

Available Phosphate (P <sub>2</sub> O <sub>5</sub> )	2%
Soluble Potash (K <sub>2</sub> O)	12%
Silica (Si)	7%

## Sierraform GT

Sierraform GT is an improved version of the familiar Sierraform and now has a unique dual effect as it contains both slow-release Nitrogen and slow-release Potassium. The well-balanced nutrient composition of Sierraform GT also means that your turf is now more resilient under stress conditions such as cold, heat, drought and intensive wear, all year round. It is the ideal starting point for you as a turf manager to maintain your turf at an optimum level.

- Small, physical uniform granules for even spreading and quick dispersion.
- Fast dispersion into the turf; the green can therefore be brought back into use sooner.
- Chemically uniform, with every granule containing the same amount of NPK+Te.
- Dual effect thanks to the slow-release Nitrogen and slow-release Potassium.
- Optimum protection against stress: cold, heat, drought and wear.
- Guaranteed even growth and even colour.
- Safe to use (no scorching) and virtually no leaching.
- Slow release fertiliser mechanism not affected by mechanical cultivation techniques (aeration etc.)

### Spring Start 16+0+16 +Fe+Mn 20kg

- Active at lower temperatures.

Application Rate: 20-30g per square metre

Area treated by a 20kg bag: 666-1,000 square metres

Suggested use period: March - September

Longevity: 2 months

### All Season 18+6+18+ Mg0 + Trace Elements 20kg

- Ensures well balanced NK with less P.

Application Rate: 20-30g per square metre

Area Treated by a 20kg bag: 666-1,000 square metres

Suggested use period: February - August

Longevity: 2 months

### Momentum 22+5+11 +Mg0 + Trace Elements 20kg

- Matches nutrient input during periods of strong growth

Application Rate: 20-30g per square metre

Area Treated by a 20kg bag: 666-1,000 square metres

Suggested use period: February - August

Longevity: 2 months

### High N 27+5+8+ Mg0 20kg

- Ensures release of nutrients input during periods of strong growth

Application Rate: 15-25g per square metre

Area Treated by a 20kg bag: 800-1,333 square metres

Suggested use period: March - September

Longevity: 2 months

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