Landscape
Fertiliser & Plant Protection Guide for gardeners & landscapers 2016/17
ICL, the grass & plant nutrition specialists

Many years of experience
The ICL Professional Landscape Formula range utilises ICL’s extensive experience in the ornamental horticulture and turf industries to produce a range that will best meet the needs of the landscape market locally. Our global research and testing facilities support our close working relationships with growers and turf professionals all over the world to ensure our fertilisers meet the changing demands of various crops and environmental conditions to optimise growth results and product efficiencies.

A global network
ICL extends to every corner of the globe. As part of the ICL Group, ICL Specialty Fertilizers was formed in March 2011. The ICL Group is divided into divisions, with ICL Specialty Fertilizers forming part of the ‘fertilisers’ division. Direct access to raw materials, extensive knowledge of minerals and access to several production facilities are among the most important advantages of being part of the ICL family.

Respect for the environment
Sustainable products satisfy the needs of society without damaging the environment or public health, either now or in the future. As the market leader in the field of fertilisers, ICL Specialty Fertilizers is highly aware of its environmental responsibilities. ICL recognises the protection of the environment as a collective responsibility. The factory in which ICL’s controlled release fertilisers are manufactured was granted ISO 14001 accreditation in 2002, reinforcing the fact that ICL has the right environmental and technological objectives and is reducing carbon emissions. This focus on the environment is an integral part of all our products.

Focus on better technologies
ICL has one of the most advanced fertiliser research facilities in the world. This allows our team to work on new technologies. We test our fertilisers extensively at our own testing sites and through independent research institutes all over the world in order to be sure that our products are both safe and efficient. The ICL Professional Landscape Formula range largely utilises our unique PACE and Poly-S technologies (see page 6 for further details). Due to the nutrient uptake being so efficient with both fertiliser technologies the risk of leaching is minimal and therefore these products are safer for the environment.

We listen to our clients
When developing new products and improving existing products, the wishes of our clients are essential. By listening to you, we can produce exactly the right products and services to satisfy your requirements.

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* Sierraron G and MaxGuard 2G not available in New Zealand

Cover image
‘First Impressions Count’ – The Lend Lease Sales precinct at Bingara Gorge, proudly maintained by Landscape Solutions
# ICL product index

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<td>+ + + + ++ + + + + + + +</td>
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<td>Spreader, hand applicator</td>
<td>22.7kg bag</td>
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<td>Sierraron G - Granular pre-emergent herbicide</td>
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<td>+ + + + ++ + + + + + + +</td>
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<td>Spreader and wand</td>
<td>25kg carton</td>
<td>p15</td>
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- **Very suitable**
- **Suitable**
- **Not suitable**
Fertilisers for grass

A good fertilisation programme will keep the grass healthy and strong, promote recovery, and boost disease resistance. Moreover, a good fertilisation programme will ensure a uniform area of grass with no bare patches.

It is not easy to make a well-considered choice. In general terms, fertilisers can be divided into two groups.

1. Conventional Fertilisers

Fertilisers that release all their nutrients in one go immediately after application: the grass grows quickly and its colour improves straight away. These are the conventional, liquid, and/or water-soluble fertilisers. The disadvantage is that nutrients are lost as a result of leaching, evaporation, or the removal of mowing cuttings as a result of sudden growth spurts.

2. Long-acting Fertilisers

Slower-acting, controlled-release, and some organic fertilisers release nutrients over a certain period of time: the grass is able to absorb almost all the nutrients. Barely any nutrients are lost, making these fertilisers efficient and sustainable. Slow-acting and controlled-release fertilisers have a more constant and reliable longevity than organic fertilisers.

Healthy growth

The soil does not always contain sufficient nutrients for healthy growth.

Regeneration

Mowing is a major stress factor for grass and partially damages the plant’s capacity to convert sunlight, water, and carbon dioxide into nutrients.

Intended use

Lawns are laid with a particular character and type of use in mind. The appropriate grass species alone is not sufficient; the grass must also be looked after in the appropriate manner.

Water balance

A fertilised lawn forms dense turf with plentiful roots. With a healthy root system the turf can absorb and retain water efficiently.

4 good reasons to fertilise a lawn

Conventional, liquid, and water-soluble fertilisers release their nutrients quickly, causing an initial growth spurt followed by a decline in growth. A high level of nutrients gives rise to rapid but poor-quality top growth, and mowing becomes more difficult.

Nutrient losses can be high in sensitive environments.

Balanced nutrients

Balanced, regular nutrition is important for our own health, and the same applies to plants. It is therefore better – and easier – to use fertilisers with long-lasting effects. Nitrogen is the most important nutrient for grass. Grass can absorb nitrogen from composting organic material in the soil, but usually not a sufficient amount. Insufficient nitrogen results in the lawn turning a familiar faded green or yellowish colour.

Controlled and slow release fertilisers release nutrients gradually and steadily. They therefore provide long term nutrition, improved turf quality and minimise nutrient loss in sensitive environments.
Innovative technologies

ICL Specialty Fertilizers uses two controlled release technologies in Professional Landscape Formula known as PACE and Poly-S

The effects of PACE and Poly-S
Water permeates through the resin layer and dissolves the nutrients inside the granule. Pressure is created, pushing the nutrients out, continually and steadily. PACE technology delivers NPK in a controlled release way, whilst Poly-S technology is designed to deliver N & K as controlled release and S as slow release. The nutrients are released over a set period depending on the thickness of the coating. The available longevities are 2-3 months, 3 months, 4-5 months, 5-6 months and 8-9 months. A few products contain both PACE and Poly-S technologies.

Influence of temperature on release speed
The longevities stated for the various products apply at an average soil temperature of 21°C. At higher average temperatures, the release speed will increase, while at lower temperatures the release speed will drop. This is exactly in line with the nutrient needs of the grass. The release process begins very gradually at temperatures just above 0°C. The release of the nutrients is not influenced by soil type, EC value, microbiological activity, pH, water quality, or the amount of moisture.

Sustainability
The nutrients are absorbed efficiently; after all, the release curve matches the needs of the grass; the risk of leaching is therefore minimal. One additional advantage is that the even growth means you will not need to mow as often and the loss of nutrients can therefore be kept to a minimum.

The range for grass
PACE technology
- N
- P
- K

Poly-S technology
Outer polymer coating
Inner sulphur coating
Urea core

The nutrients N, P and K are combined in every small granule.

The advantages of the ICL Professional Landscape Formula range at a glance
- High nutrient content, reduced quantity of fertiliser required
- Very reliable release
- Long-lasting effects resulting in labour savings
- Safe, also for young grass plants
- Balanced growth
- Strong root system
- Less frequent mowing, reduced mowing waste
- Sustainable: optimum use made of fertilisers, minimal leaching

Ideal for landscape environments, these Plant Protection Products meet the highest environmental, health and safety standards.

The ICL plant protection range, specifically developed for ornamental plants and turf surfaces, includes herbicides, insecticides, miticides, fungicides and wetting agents.

Pre-emergent weed control
Weed control is a time consuming and endless task which needs to be well managed. ICL offers the advantage of situation specific pre-emergent weed control for gardens, pots and pathways, with two distinct products; Rout and Sierraron G.

Sierraron G
Sierraron G is ideal for use in landscape situations on peripheral areas like fence lines, paths and perimeters. Sierraron granules, aided by moisture disintegrate and release their active ingredient, forming a barrier in the soil. Weed seeds will not germinate in the barrier and existing shallow rooted weeds will be killed by the barrier.

The smart chemistry in Sierraron works where positively (+ve) charged Sierraron particles are attracted to negatively (-ve) charged soil colloids and adsorbed on contact. This process ensures there is minimal run-off into waterways. Sierraron is absorbed by the root growing points, causing death.

Rout
In the market for over 25 years, Rout pre-emergent weed control for pots and garden beds combines the action of two proven herbicides in one granule, making it extremely effective in the control of a broad range of weeds. Rout performs time after time to eradicate weeds from pot and garden bed surfaces.

MaxGuard 2G
MaxGuard delivers fast acting contact pyrethroid insecticide for immediate control of surface feeding insects in all turf areas. It can also be incorporated into potting mixes for insect control (check permits).

Hydrafflo Wetting agent
ICL Hydrafflo wetting agent is a unique dual action non-ionic formulation available in easy to use granules or as a liquid for spray application. As safe for delicate ornamental flowering plants as it is for turfgrass greens, sportsfields and lawns. Hydrafflo’s smart technology offers real help for overcoming weather extremes as well as hydrophobic soil conditions.

Our advice
- Always follow label directions on plant protection products – from application to safety and disposal
- Application of chemicals is always best under calm weather conditions, not windy or extreme temperatures
- Try to use non-chemical measures in combination with pesticides (e.g. choose resistant plant varieties, use biological controls, in the IPM program utilise physical barriers)
- Ensure you use chemicals responsibly and it will save you time, money and prolong the life of the pesticide (i.e. delay resistance) in turn benefiting the environment

ICL Plant Protection technologies are designed to save you time and money

Graphical representation
## Fertilisers

The Professional Landscape Formula range

### Product notes

**Nitrogen breakown**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Technology/Longevity</th>
<th>Product notes</th>
<th>Nitrogen breakdown</th>
<th>Bag sizes (kg)</th>
<th>Application rate (g/m²)</th>
<th>Nutrient levels applied (kg/ha)</th>
<th>Bag coverage (m²) per bag</th>
<th>Turf response</th>
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<tr>
<td>Maintenance</td>
<td>20-6.6+12S+2.1Ca+1.8Mg</td>
<td>Strong initial boost coupled with base feed for maintenance applications.</td>
<td>20 (25%)</td>
<td>20 0 5.8 11.6 8.4</td>
<td>15 35g/m² (3.5kg/100m²)</td>
<td>70 0 20.3 420 1.3 2.5</td>
<td>15kg bag</td>
<td>6-8 months (slowly dispersed from surface)</td>
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<tr>
<td>New Grass &amp; Renovation</td>
<td>20-7.6.6</td>
<td>Controlled release base feed is ideal for laying new turf or re-sowing.</td>
<td>20 (60%)</td>
<td>4 16 8.7 6.6 8.4</td>
<td>15 35g/m² (3.5kg/100m²)</td>
<td>70 30.5 23.1 420 0.85 2.0</td>
<td>15kg bag</td>
<td>7 days</td>
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<tr>
<td>All Round</td>
<td>24-2.2-6+1.2Mg</td>
<td>Directly release of nutrients ensures balanced growth and good root development.</td>
<td>24 (60%)</td>
<td>5.3 6.3 12.4 2.2 (40%) 6.6 (65%): 7.9 1.2</td>
<td>15 45g/m² (4.5kg/100m²)</td>
<td>108 9.9 29.7 330 0.85 2.0</td>
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<td>8 days (slowly dispersed from surface)</td>
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<td>Flora</td>
<td>14-1.3-14+1.8Mg +TE</td>
<td>Season-long nutrition for garden beds, pots and high-mown turf.</td>
<td>14 (100%)</td>
<td>7.3 8.7 1.3 (100%) 14.9 (100%): 6.5 1.8</td>
<td>15 40-80g/m² (4.8kg/100m²)</td>
<td>64 5.2 36.4 375 2.0 4.0</td>
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### Poly-S Coated granule technology

Poly-S is a controlled release Nitrogen source that delivers nutrients gradually over the required longevity. Nutrient release is primed by moisture permeating through the outer polymer channels, through micro-channels in the sulphur layer and into the nutrient core where the urea is solubilised.

Once the urea is solubilised, it then travels back through the same pathways where it is released and made available for plant uptake.

### PACE Resin coated technology

PACE is a controlled release fertiliser with a unique vegetable based resin membrane that ensures plants receive a steady dose of Nitrogen, Potassium and Phosphorus. Depending on the thickness of the coating, nutrients are released over different lengths of time - from 2-3 months up to 8-9 months.

The release is not influenced by soil moisture levels, pH or bacterial activity, so remains consistent over a wide range of environmental conditions.

### PACE technology Nutrient breakdown

**Bag coverage:**

- **20-6.6+12S+2.1Ca+1.8Mg:** 420 m²
- **20-7.6.6:** 330 m²
- **24-2.2-6+1.2Mg:** 330 m²
- **14-1.3-14+1.8Mg +TE:** 375 m²

**Nutrient levels applied:**

- **N:** 36.4 kg/ha (visually dispersed from surface)
- **P:** 2.0 kg/ha (visually dispersed from surface)
- **K:** 4.0 kg/ha (visually dispersed from surface)

**Application rate:**

- **24-2.2-6+1.2Mg:** 108 g/m² (visually dispersed from surface)
- **14-1.3-14+1.8Mg +TE:** 108 g/m² (visually dispersed from surface)

**Granule size:**

- **20-6.6+12S+2.1Ca+1.8Mg:** 2 kg
- **20-7.6.6:** 2 kg
- **24-2.2-6+1.2Mg:** 2 kg
- **14-1.3-14+1.8Mg +TE:** 2 kg

**Application time:**

- **20-6.6+12S+2.1Ca+1.8Mg:** 2-3 months
- **20-7.6.6:** 2-3 months
- **24-2.2-6+1.2Mg:** 3 months
- **14-1.3-14+1.8Mg +TE:** 8-9 months
**Fertiliser tablets**

**Agriform Fertiliser Planting Tablets**
- 20+4.3+4.1+TE, longevity up to 12 months (10g tablet)
- 20+4.3+4.0+TE, longevity up to 12 months (21g tablet)

Available in:
- 10g – 1000 tablets/carton
- 21g – 500 tablets/carton

An easy to use slow release fertiliser planting tablet that meets the nutritional requirements of a wide variety of plants. Agriform delivers enough nutrition to feed the plant for up to 12 months which in turn drastically reduces labour and material costs of reapplication.

- Placement near the root zone ensures surface weeds and grass receive no nutrition.
- Leach resistant properties protect ground water pollution.
- Ideal for re-vegetation, landscape plant out and heavy soils.

**Osmocote Exact Fertiliser Planting Tablets**
- 14-3.5-5.1+1.2Mg+TE, longevity 8-9 months
- 14-3.5-8.3+1.2Mg+TE, longevity 12-14 months

5g tablet – 1500 tablets/carton

Flexible controlled release fertiliser planting tablet offering the possibility of giving very accurate dosages of fertiliser in a simple manner. With a clever conical shape, the tablets can be pushed into the growing medium or placed in the planting hole.

- Safe to apply in the planting hole.
- Convenient & easy to use.
- Patented Osmocote Exact technology, safe for the environment with minimal leaching.
- Ideal for use in re-vegetation and landscaping.
- Safe for use in planting out of Australian natives.

**Hydraflo Wetting Agent**
- Granular & Liquid non-ionic formulations available
- Hydraflo 2 Granular Soil Wetting Agent – 20kg bag
- Hydraflo L Liquid Soil Wetting Agent – 5L, 20L & 200L drums available

The improved dual-action non-ionic formulation of hydraflo 2 and the easy-to-use granules deliver immediate action as a topdress application and improved efficacy incorporated in soils and potting mixes over a longer period of time.

- Effective for up to 10 months in nursery potting mixes.
- Hydraflo L is a liquid soil wetting agent that is safe for use on delicate ornamental flowering plants as it is on turfgrass greens, sportsfields & lawns.
- Made in Australia for varied conditions.
- Easy to apply.
- Safe for use in any season.
- Rewets soils and aids infiltration and drainage for deeper stronger roots.

**Plant protection**

**Sierraron G Granular Pre-emergent Herbicide**
- Active Constituent: 67.5g/kg Dichlobenil

25kg carton available

Proven pre-emergent weed controller effective for up to 6 months. Recommended for use on such areas as fence lines, paths, driveways and field, park and production area perimeters. Sierraron boasts minimal potential for runoff or leaching, due to its granular form it is easy to apply without potential for spray drift.

- Not ideal for every situation as it works on a flush of growth or breaking dormancy.
- Low growing soft annuals may require multiple applications.
- Best applied when foliage is dry.

**MaxGuard 2G Contact Insecticide**
- Active Constituent: 2g/kg Bifenthrin

22.7kg bag available

MaxGuard 2G is a fast acting, contact insecticide for immediate control of problem insects such as lawn armyworm, sod webworm, Argentine stem weevil adults, African black beetle adults, Lawn armyworm, Sod webworm, Argentine stem weevil adults, African black beetle adults, Bellbug adults, Cutworms and Ants, including Stinging ants.

- Effective on a variety of insects, including fled imported fire ant (see off label permit).
- Application method is easy using a spreader.
- High safety margin/toxicity.
- Quicker turf recovery.
- Requires less active ingredient to control pest problems than other classes of insecticides.

Not available in New Zealand

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**Sustainability in practice**

**Greenery brings new life; in fact, greenery is life!**

The beating heart in urban areas is without doubt the green space. The creation and maintenance of a lawn is therefore one of the pillars of sustainable interaction with our environment. The lawn is a source of diversity; it might not occur to many people, but a lawn is a complex community of different varieties of grass and various soil organisms.

**What makes a lawn so special?**

- A lawn is a much better noise buffer than steel or concrete
- A lawn filters particulate matter
- A lawn has a cooling effect on hot days
- A lawn produces essential oxygen
- A lawn absorbs CO₂
- A lawn is water-permeable
- A lawn has an attractive and natural look; concrete does not
- Healthy turf and gardens are of tremendous benefit to our environment and our mental and physical health

There are plenty of reasons to cherish and care for the lawns that we have!
Application Rates

ICL spreaders are durable, easy to use, and offer turf managers the very best in application efficiency.

Suggested planting out rates for landscapes

<table>
<thead>
<tr>
<th>Pot size</th>
<th>5g Osmocote Exact Planting tablets</th>
<th>21g Agriform Planting tablets</th>
<th>Landscape Flora</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>litres</td>
<td>(per m²)</td>
<td>Spoon Size No.</td>
</tr>
<tr>
<td>Well rooted tube stock</td>
<td>1</td>
<td>n/a</td>
<td>5</td>
</tr>
<tr>
<td>140</td>
<td>1.3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>180</td>
<td>3</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>200</td>
<td>5</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>250</td>
<td>8</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>300</td>
<td>12</td>
<td>7</td>
<td>36</td>
</tr>
<tr>
<td>400</td>
<td>24</td>
<td>14 or use Flora</td>
<td>72</td>
</tr>
<tr>
<td>500</td>
<td>45</td>
<td>27 or use Flora</td>
<td>135</td>
</tr>
</tbody>
</table>

Larger pot sizes/Established plants

For each 30cm of plant height or spread; or for each 1.25cm of tree trunk diameter, use:

| For slow growing plants | 2 | 10 | 1 |
| For fast growing plants or poor soil situations | 4 | 20 | 3 |

Hydraflo 2: Granular Soil Wetting Agent

Application timing | Application rate (per m²) | Water
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Season long</td>
<td>20-25 g/m²</td>
<td>4-6 mm</td>
</tr>
<tr>
<td>Bi-monthly</td>
<td>10-15 g/m²</td>
<td>4-6 mm</td>
</tr>
</tbody>
</table>

Hydraflo L: Liquid Soil Wetting Agent

Turf and landscape application rates

<table>
<thead>
<tr>
<th>Situation</th>
<th>Rate</th>
<th>Application Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greens and fine turf, lawns and landscapes</td>
<td>125-375 mL /100m²</td>
<td>3 months or as required</td>
</tr>
<tr>
<td>Fairways, sports turf, lawn turf and landscapes</td>
<td>375-625 mL /100m²</td>
<td>8 months or as required</td>
</tr>
</tbody>
</table>

Apply in advance of expected dry patch formation. Hydraflo L is a polymeric wetting agent that rewets readily after treated soil has been dry for extended periods. Application through boom spray should use a minimum dilution of 1 part Hydraflo L to 200 parts water (1.0 litre of Hydraflo L in 200 litres of water). Additional irrigation (3-6mm) should be applied to ensure the Hydraflo L is thoroughly watered into the soil profile.

We are highly aware of our environmental responsibilities.
MaxGuard 2G application rate

<table>
<thead>
<tr>
<th>Target</th>
<th>Application rate</th>
<th>Critical comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lawn armyworm (Spodoptera mauritia)</td>
<td>600g/ha (0.6kg/100m²)</td>
<td>Broadcast MaxGuard 2G with suitable application equipment to ensure uniform coverage over the treated area.</td>
</tr>
<tr>
<td>Sod webworm (Herpestogramma canadensis)</td>
<td>600g/ha (0.6kg/100m²)</td>
<td>To ensure optimum control, irrigate the treated area with up to 4mm of water soon after application.</td>
</tr>
<tr>
<td>Cutworm (Agrotis sp.)</td>
<td>600g/ha (0.6kg/100m²)</td>
<td></td>
</tr>
<tr>
<td>Argentine steem weevil adults (Seminotus bonator)</td>
<td>60-120kg/ha (0.6-2.5kg/100m²)</td>
<td>Inspect the treated areas for continuing activity. Reapply as required. Where a rate range is indicated use lower rates under lower insect pressure and higher rates under higher insect pressure.</td>
</tr>
<tr>
<td>African black beetle adults (Anoplotrupes stercorosus)</td>
<td>120-180kg/ha (1.2-1.8kg/100m²)</td>
<td></td>
</tr>
<tr>
<td>Bilbug adults (Sphenophorus brunipennis)</td>
<td>60-120kg/ha (0.6-2.5kg/100m²)</td>
<td>Apply granules to areas where ants are active. Where possible, apply granules directly to the nest. Use the low rate for maintenance treatments or to control light infestations and the high rate for heavy infestations and for maximum residual control. The elimination of funnel areas from a particular site will generally require more than one application. Initial applications should be broadcast over affected areas. As the initial numbers of active colonies is reduced, application should shift to targeting active mounds. Apply granules directly to the mound and in the area immediately surrounding active mounds (300mm radius).</td>
</tr>
<tr>
<td>Black ant, Coastal brown ant, Funnel ant, Meat ant, Sugar ant and Stinging ant only</td>
<td>60-220g/ha (0.6-2.2kg/100m²)</td>
<td></td>
</tr>
</tbody>
</table>

For further information refer to product labels and Safety Data Sheets (SDS).

Applicable APVMA Permits

<table>
<thead>
<tr>
<th>Target</th>
<th>Rate</th>
<th>Dose Rate (ppm)</th>
<th>Potting Mix Rate</th>
<th>Permit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red imported fire ant</td>
<td>0.12</td>
<td>12</td>
<td>3.9g/m³</td>
<td>PER13916 – NSW only PER13955 – QLD only (potting media non-food and non-bearing fruit trees)</td>
</tr>
<tr>
<td>Identified quarantine soil pests susceptible to Bifenithrin</td>
<td>Potting Mix</td>
<td>Bulk Density</td>
<td>Product Rate g/L</td>
<td>PER9796 – all states</td>
</tr>
<tr>
<td></td>
<td>25% sand/ 75% peat</td>
<td>0.85</td>
<td>2.7</td>
<td></td>
</tr>
</tbody>
</table>

See permit for detailed application rates. For more permit info: https://portal.apvma.gov.au/permits

Sierraron application rate recommendation

<table>
<thead>
<tr>
<th>Application rate</th>
<th>25kg pack coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garden maintenance (For the safe control of most annual, perennial grass and broadleafed weeds)</td>
<td>60g/10m²</td>
</tr>
<tr>
<td>Established orchards, vineyards</td>
<td>60g/10m²</td>
</tr>
<tr>
<td>Established black current, raspberries etc.</td>
<td>60g/10m²</td>
</tr>
<tr>
<td>Commercial and industrial (Plastic, paved areas, fencing lines etc.) Annual weeds Perennial weeds</td>
<td>180g/250/10m²</td>
</tr>
<tr>
<td>Paved areas, Swept into the cracks</td>
<td>25g/10m²</td>
</tr>
</tbody>
</table>

Application rate visual recommendation guide

These images show actual size granule spread for visual reference when calibrating and applying Sierraron.
To get the very best results from your fertiliser, it’s essential to apply it accurately.

ICL spreaders are durable, easy to use, and offer turf managers the very best in application efficiency.

**Spreader Index**

<table>
<thead>
<tr>
<th>Spreader</th>
<th>Type</th>
<th>Spread width</th>
<th>Hopper capacity</th>
<th>Product usage</th>
<th>Top dressing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Conventional fertilisers</td>
<td>Coated fertilisers</td>
</tr>
<tr>
<td>SR-2000</td>
<td>Rotary</td>
<td>2.0-6.0m</td>
<td>42 litres</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AccuPro 2000</td>
<td>Rotary</td>
<td>2.0-6.0m</td>
<td>42 litres</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SS-2 Drop Spreader</td>
<td>Drop</td>
<td>0.91m</td>
<td>46 litres</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>HandyGreen II</td>
<td>Handheld</td>
<td>Variable</td>
<td>2 litres</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Spreading advice for SR-2000 and AccuPro 2000**

<table>
<thead>
<tr>
<th>Single pass application</th>
<th>New Grass &amp; Renovation</th>
<th>All Round</th>
<th>Maintenance</th>
<th>Flora</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage in grams/m²</td>
<td>30</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Spreader settings</td>
<td>P</td>
<td>R</td>
<td>S</td>
<td>T</td>
</tr>
<tr>
<td>Spreading width</td>
<td>4.8</td>
<td>4.8</td>
<td>4.8</td>
<td>4.8</td>
</tr>
<tr>
<td>Cone setting</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Top fertilisers need top spreaders**

**SR-2000**

Rotary Spreader

- Has all the features of the AccuPro 2000 Rotary Spreader plus:
  - Larger 139 Turf Saver 2 pneumatic wheels for an easier push
  - New and improved larger diameter, more durable stainless steel frame
  - Patented Helical Cone for a uniform, consistent spread pattern
  - Extended handle with tuff-foam grips for added comfort
  - Positive on-off deflector provides effective product delivery control
  - Standard port shut-off control for greater application efficiency

**SS-2**

Drop Spreader

- Stainless steel frame, hopper and fasteners provide outstanding durability and corrosion resistance
- Larger 139 Turf Saver 2 pneumatic wheels for easier operator use
- Extended ergonomic handle is more durable
- Lift handles in the front and back for easier loading and unloading
- Not suitable for coated controlled release products

**HandyGreen II**

- A hand-held spreader that dispenses ICL fertilisers as you turn the handle
- Comfortable to hold and easy to use
- Suitable for small to medium lawns

**Walking Pattern**

Recommended walking pattern for drop and hand-held spreaders

**Helical Cone®**

Optimal spreading due to the patented Helical Cone

Optimum distribution at half rate and double pass.
Spreader calibration

Time invested in checking and setting spreaders is quickly recouped by better application accuracy, which prevents under or over-dosing and stripes in the sward caused by misses or overlaps.

Effective applications start with the end of the last job. Machines need to be thoroughly cleaned and, if possible, dried before they are put away. Fertiliser absorbs moisture from the air and if any is left in the spreader this will quickly corrode metal parts.

Before starting work, operators should give the applicator a thorough inspection. Ensure the rate setting mechanism is free and adjusts easily, check the on/off works and the distribution rotor and spinning discs are not worn and are functioning properly.

It is vital to then set and test the machine with the actual fertiliser it will be applying. The bulk density of the material affects the spread pattern and flow rate. The same application rate will need fewer denser granules to flow through than less dense material, even though they could be the same physical size. Denser particles will be spread further — e.g. consider how far a cricket ball can be thrown compared with a tennis ball.

This is a very important consideration when setting pedestrian and tractor-mounted spinning disc spreaders, which rely on centrifugal force to achieve the spreading width, with larger, denser granules travelling further than lighter, less dense ones.

With these applicators it is crucial to check the distribution pattern, with a full-width tray test, as well as the rate calibration. This will ensure you know how much is being applied as well as the evenness of distribution.

There are four main spreaders used to apply fertiliser — pedestrian drop-style, pedestrian spinning disc, tractor-mounted spinning disc or oscillating spout. All have different calibration and settings procedures.

With pedestrian operated machines, settings are usually made for a ‘normal walking pace’ of 5km/hr (3mph). It is important to maintain the speed for which the calibration settings have been made to prevent under or overdosing. Walking speed also influences the spread width on spinning disc applicators. Also keep spreaders parallel to the ground to maintain an even distribution.

Pedestrian drop-style

Application width is set (usually a little narrower than the hopper), rate is adjusted by opening or closing the outlet and will vary with walking speed.

- Adjust spreader outlet to the setting in the operator’s manual for product type and application rate.
- Apply fertiliser over a measured distance (e.g. 10m) at normal walking pace (5km/hr).
- Determine quantity spread over distance by one of the following methods:
  - Lay sheet on ground and then collect and weigh fertiliser distributed on top.
  - Place a known weight in hopper, apply fertiliser, empty and weigh remaining hopper contents and subtract from original weight.
  - Adjust machine setting for desired application rate if necessary. Note this setting will apply only for this fertiliser and operator’s walking pace. Recalibrate for different operators and materials.

Pedestrian Spinning Disc

Application width and dose rate will vary with walking speed and fertiliser characteristics and opening adjustment.

- A spreading width test with the actual material should be carried out, preferably across special collection trays, before any other calibration. This will determine the spread width for the particular fertiliser and operator’s pace (aim for 5km/hr) and how far apart you should walk to maintain an even spread.
- Adjust spreader for desired application rate. Place known quantity e.g. 2kg in hopper.
- Walk set distance (10m) at normal walking pace.
- Empty and weigh remaining hopper contents.
- Calculate area by multiplying the application width by the distance walked.

Use following formulas to calculate rate in g/m²

\[
\text{Weight of fertiliser collected} \div \text{area covered} = \text{rate in g/m²}
\]

To calculate application rate use following procedure:

- Original hopper content minus contents after spreading e.g. 2,000g – 1,000g = 1,000g spread in 10m.
- Area (distance) x (width) = area covered
- Weight \div \text{area covered} = \text{rate in g/m²}

Tractor-Mounted Spinning Disc

Application width determined by fertiliser characteristics, machine type and PTO drive speed. Forward speed and opening setting will influence application rate.

- Follow application rate calibration procedure in operator’s manual. Usually this means opening a chute and collecting the amount of fertiliser that runs out in a set time. Weigh amount collected and compare with recommendation in manual. Make necessary adjustments to gain correct application rate. This must be done using actual fertiliser to be applied.

- Spreading width will be set by the machine — usually 6-12m. But this will be achieved only at the correct PTO speed (e.g. 540rpm) and this requires the tractor engine speed to be set at the correct rpm. You can check the actual PTO speed with a tachometer.

- The forward speed for the application rate will be shown in the manual. It is crucial to select the right gear with the engine rpm to achieve the PTO speed to drive at the forward speed.

Use the following formula to check the application rate:

\[
\text{Application rate in kg/ha} = \left( \frac{\text{Total weight collected in one minute (kg)} \times 600}{\text{Spread width (m)} \times \text{tractor forward speed (km/hr)}} \right)
\]

Spread Pattern Accuracy Test:

- A full-width tray test is essential to ensure the fertiliser is being distributed evenly across the whole width.
- Place special collection trays across width.
- Tractor is driven in the gear and set engine speed to achieve the PTO and forward speed.
- Spreader is operated through the line of trays and contents of each are placed in individual test tubes.
- Measure the contents of each tube to assess spread pattern.
- Make the machine adjustment to correct any highs or lows to achieve even pattern.
Step-by-step plan: working towards long-lasting lawns and gardens

This step-by-step plan is based on the many years of experience of ICL Specialty Fertilizers and on the modifications made in response to new developments, technologies and the requirements of gardeners, garden designers, and firms tending green areas in cities.

Laying new lawn

1. **Step 1: Soil analysis**
   
   Taking soil samples has not yet become a habit, resulting in traditional application of lime and soil improvers, etc. According to the data provided by the soil science service, the pH of more than 70% of the soil samples taken from lawns is too high.
   
   A soil analysis will help you choose the right fertiliser and any necessary soil improvers such as lime or organic products. The soil structure is essential for good root growth, and organic matter can help in this.

   **Our advice**
   
   Take a soil sample for analysis. We would be happy to give you personalised advice on the basis of the analysis report to help you make the right choices relating to soil improvers and fertilisation.

2. **Step 2: Soil cultivation for new lawn**
   
   The majority of all lawn problems have underground causes. The right time to correct soil problems is when laying a new lawn. Common soil problems include: incorrect pH, poor drainage, soil compaction and sodic or heavy soils. Soil preparation under favourable conditions is extremely important, as unfavourable conditions – for instance overly wet or too shallow soils – do not give the desired results.

   Consider an irrigation system; now would be the perfect time to install one.

   **Our advice**
   
   Take conditions into account and draw up a timetable to complete the works in good time.
   1. Cultivate the soil thoroughly to loosen it (approx. 15-40 cm deep).
   2. Incorporate compost or a soil improver into the soil.
   3. If desired: install the irrigation system.
   4. Choose the correct quantity of lime (if necessary) on the basis of the soil analysis and the appropriate fertiliser.
   5. Finely till and level the top layer and mix the lime and fertiliser into the upper layer of the soil.
   6. Make the surface level, but never use a vibratory compactor as this would compact the soil too much.
   7. The soil is now ready for sowing or for laying turf.

3. **Step 3: Laying new lawn**
   
   Our advice
   
   Take conditions into account and draw up a timetable to complete the works in good time.
   1. Cultivate the soil thoroughly to loosen it (approx. 15-40 cm deep).
   2. Incorporate compost or a soil improver into the soil.
   3. If desired: install the irrigation system.
   4. Choose the correct quantity of lime (if necessary) on the basis of the soil analysis and the appropriate fertiliser.
   5. Finely till and level the top layer and mix the lime and fertiliser into the upper layer of the soil.
   6. Make the surface level, but never use a vibratory compactor as this would compact the soil too much.
   7. The soil is now ready for sowing or for laying turf.

Maintenance of gardens

1. **Step 1: Soil analysis**
   
   Taking soil samples has not yet become a habit, resulting in traditional application of lime and soil improvers, etc. According to the data provided by the soil science service, the pH of more than 70% of the soil samples taken from lawns is too high.

   **Our advice**
   
   Take a soil sample for analysis. We would be happy to give you personalised advice on the basis of the analysis report to help you make the right choices relating to soil improvers and fertilisation.

2. **Step 4: Maintaining existing lawn**
   
   Our advice
   
   Take conditions into account and draw up a timetable to complete the works in good time.
   1. Cultivate the soil thoroughly to loosen it (approx. 15-40 cm deep).
   2. Incorporate compost or a soil improver into the soil.
   3. If desired: install the irrigation system.
   4. Choose the correct quantity of lime (if necessary) on the basis of the soil analysis and the appropriate fertiliser.
   5. Finely till and level the top layer and mix the lime and fertiliser into the upper layer of the soil.
   6. Make the surface level, but never use a vibratory compactor as this would compact the soil too much.
   7. The soil is now ready for sowing or for laying turf.

3. **Step 5: Moss and weed problems**

4. **Step 6: Borders and plant containers**
3  **Step 3: Laying new lawn**

Lawns are laid with the intention of leaving them in place for several years, so the choice of grass variety or mixture is extremely important, whether you are intending to sow the lawn yourself or use rolls of turf. In most cases, you are likely to opt to sow the lawn yourself using grass mixes. This means you are not dependent on the soil type and you can be more specific in your choice of grass varieties with regard to the purpose, such as creating a green on a golf course, a recreational lawn in a garden, or an imitation savannah area in a park setting. In either case, it is important to provide the young grass with the right fertiliser straight away. The fertiliser should not result in inhibited growth as a result of salt accumulation, but provide sufficient nutrition to ensure even and rapid establishment.

**Type of lawn**

Consider the type of lawn you are looking to lay and recommended fertilisation program, sowing advice and mowing height that lawn requires for optimum health and vitality.

- **Ornamental lawn**
  Visually attractive lawn, intended primarily for ornamental purposes with a year-round green colour and little mowing waste.

- **Lawn for play or recreation**
  A lawn for enjoyment and on which the children can play.

- **Sports lawns/fields**
  For a high level of tread resistance, a good regeneration capacity, and the fast recovery of your lawn.

- **Shady lawn**
  For an attractive lawn in full sunshine but also in the shade or in areas with little light/sunshine, and good resistance to moss growth.

**New lawn**

<table>
<thead>
<tr>
<th>Grass seed or turf rolls, depending on the mix or variety</th>
<th>Dosage</th>
<th>*Recommended period of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>See supplier recommendation</td>
<td>Apply according to supplier recommendation or when you need/must to lay a new lawn</td>
<td></td>
</tr>
<tr>
<td>Professional Landscape Formula New Grass &amp; Renovation 24-2.6-0.6</td>
<td>35 grams/m²</td>
<td></td>
</tr>
<tr>
<td>Professional Landscape Formula All Round 24-2.6-0.6</td>
<td>45 grams/m²</td>
<td></td>
</tr>
</tbody>
</table>

**Our advice**

Define the use of the lawn, analyse the local conditions, and determine the properties that the grass needs to have. Select the appropriate grass mix for your intended use.

**Our advice**

1. Scarify at least once a year, preferably in spring. First, mow the grass to a short enough length. Scarify the lawn, strip by strip (in straight lines) and if desired scarify a second time in the opposite direction. Eliminate any unevenness by scattering seed.

2. Sow grass seeds on bare patches immediately after scarification and keep the soil moist during the germination period. After re-sowing, do not mow until the young grass has grown sufficiently (approx. 3 cm tall). To start with, do not mow too short (only cut a maximum of 1/3 of the grass height).

3. If there are problems with the water balance, apply 20-25 grams/m² of Hydraflo 2 wetting agent in October and January, or when required.

4. In accordance with the wishes of the client, select a programme with one, two or three fertiliser applications per year. The choice of application frequency will determine the turf growth & end result of a good, very good or the best lawn around.

4  **Step 4: Maintaining existing lawn**

Scarification is important in order to remove old grass and dead moss, and to prevent the turf becoming matted. If that happens, the grass will no longer get enough air, light, nutrients, or water, and it will be more susceptible to disease and damage. Scarification also stimulates root growth. If the lawn has bare patches, additional sowing is important in the spring to prevent these open patches being taken over by moss or weeds. For re-sowing and the recovery of bare patches, the same grass seed mix can be used as originally used to sow the lawn. Re-sowing is also possible with other grass varieties, for instance to make the lawn more suitable for a particular type of use.

**Best Outcome: 3 applications per year**

For a premium turf response applying fertiliser more frequently with recommended fertilisers at certain points in the growth cycle does achieve the best results.

**Very good Outcome: 2 applications per year**

Ideal where minimal application is required to achieve very good results.

**Good Outcome: 1 application per year**

This program feeds gently for the entire growing season and is recommended for use on easy care, high mown turf (>12 mm height).

<table>
<thead>
<tr>
<th>Fertilisation three times a year</th>
<th>Dosage</th>
<th>*Recommended period of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Landscape Formula All Round 24-2.6-6.6+1.2Mg</td>
<td>45 grams/m²</td>
<td>J F M A M J J A S O N D</td>
</tr>
<tr>
<td>Professional Landscape Formula Maintenance 20-0.6-12+5.2 Ca+1.8Mg</td>
<td>35 grams/m²</td>
<td>J F M A M J J A S O N D</td>
</tr>
<tr>
<td>Hydraflo Wetting Agent:</td>
<td>Liquid Form: 0.375-0.625 L/100m² OR Granule Form: 20-25g/m²</td>
<td>F M A M J J A S O N D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fertilisation two times a year</th>
<th>Dosage</th>
<th>*Recommended period of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Landscape Formula All Round 24-2.6-6.6+1.2Mg</td>
<td>45 grams/m²</td>
<td>J F M A M J J A S O N D</td>
</tr>
<tr>
<td>Hydraflo Wetting Agent:</td>
<td>Liquid Form: 0.375-0.625 L/100m² OR Granule Form: 20-25g/m²</td>
<td>F M A M J J A S O N D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fertilisation once a year</th>
<th>Dosage</th>
<th>*Recommended period of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Landscape Formula Flora 14-1.8-6.6+1.8Mg</td>
<td>40-80 grams/m²</td>
<td>J F M A M J J A S O N D</td>
</tr>
<tr>
<td>Hydraflo Wetting Agent:</td>
<td>Liquid Form: 0.375-0.625 L/100m² OR Granule Form: 20-25g/m²</td>
<td>F M A M J J A S O N D</td>
</tr>
</tbody>
</table>

* Recommended period of use is only a guide, request a turf management program for your specific situation. Tropical and Sub Tropical areas may vary.

1 Hydraflo can be applied year round or as recommended in tables above.
Step 6: Borders and plant containers

Borders or plants with varying flowering periods and decorative foliage form the ornamental frame for a lawn. Floral borders with healthy, full shrubs add beauty and character to the garden and show off the lawn to its best advantage. Evergreen climbing plants such as Hedera are decorative when used to cover a less attractive fence (also in winter), take up little space, and require little maintenance. For sections with water balance problems, Hydraflo wetting agent offers a solution.

Our advice

For fertilisation (and re-fertilisation) of trees and shrubs, use the table shown below to calculate how many tablets or grams of fertiliser are required. In the case of new plants, place the fertiliser in the plant hole. For existing plants, make holes in the soil around the base of the plant and divide the fertiliser among the holes. Watering after application stimulates the release of the nutrients.

Suggested planting out rates for landscapes

<table>
<thead>
<tr>
<th>Pot size</th>
<th>5g Osmocote Exact Planting tablets</th>
<th>10g Agriform Planting tablets</th>
<th>Landscape Flora</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>stres</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td>140</td>
<td>1.3</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td>180</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>200</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>250</td>
<td>8</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>300</td>
<td>12</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>400</td>
<td>24</td>
<td>14 or use Flora</td>
<td>7 or use Flora</td>
</tr>
<tr>
<td>500</td>
<td>45</td>
<td>27 or use Flora</td>
<td>14 or use Flora</td>
</tr>
</tbody>
</table>

Larger pot sizes/ Established plants

For each 30cm of plant height or spread, or for each 1.25cm of tree trunk diameter, use:

- For slow growing plants: 2, 1, 10, 1
- For fast growing plants or poor soil situations: 4, 2, 20, 3
Nitrogen is the most important nutrient for grass. Because nitrogen is the only element that the soil is barely able to retain, continuous availability is necessary during the season in order to ensure a healthy, strongly growing lawn. The nitrogen level in a fertiliser therefore plays the leading role when comparing products with each other.

### The costs per m²

At the recommended dosage of 35 grams per m², Professional Landscape Formula Maintenance 20-0-6 gives you 7 grams of nitrogen per m² (20% x 35 grams). In order to apply 7 grams of nitrogen per m² using the conventional fertiliser 9.1-4.1-4.6, 77 grams per m² is required (7 / 9.1%).

You can calculate the price per gram on the basis of the price per pack. Then multiply the price per gram by the required quantity for a particular area.

Labour in relation to the number of applications influences the cost price too. In some cases, the share of labour is greater than 55% of the fertilisation costs per m².

Contact us for tailored advice and a calculation of the amount of fertiliser required for your lawns.

### How can you determine the efficiency of a fertiliser?

#### Look at the nitrogen percentage stated on the packaging.

For example:
- Product A (Professional Landscape Formula Maintenance 20-0-6) = 20% nitrogen
- Product B (conventional fertiliser 9.1-4.1-4.6) = 9.1% nitrogen

(Note: there is a legal obligation to state the quantity of nitrogen. If the packaging does not mention nitrogen, the product does not contain any nitrogen.)

#### Determine how much of fertiliser B is required to ensure the same amount of nitrogen as in fertiliser A:

Divide the nitrogen percentage of product A by the nitrogen percentage of Product B. 20% / 9.1% = 2.2. Every kilogram of product A contains the same amount of nitrogen as 2.2 kilograms of product B.

#### The environment and the leaching of fertilisers

More than 30% of conventional fertilisers can leach out of the soil profile, leaching nitrogen would therefore no longer be available for uptake by the grass. The leaching of fertilisers has a negative effect on the environment. The gradual availability of nutrients in the ICL Professional Landscape Formula range prevents leaching.

### Conclusions

Considerably smaller quantities are required of long-acting fertilisers with high nitrogen content. This also means reduced transport costs, reduced labour hours, and a reduced environmental impact.
NO NEED TO KEEP OFF THE GRASS