



**Stronger grass through
iTurf Technologies**



Where needs take us

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iTurf, an integrated turf management programme

Alongside our fertilizers, plant protection products and grass seed, we offer expertise and solutions to a range of turf problems, brought together in our unique programme of integrated turf practices and treatments, iTurf.

Integrated turf management (ITM) focuses on using the best products in the most efficient and responsible way. ICL champions ITM through iTurf, giving turf managers an easy way of meeting their environmental responsibilities

and comply with increasing rules and regulations for chemical application. It also helps them maintain healthy turf through long-term sustainable management.



Technologies you can trust

Professional turf management is changing rapidly, constantly responding to increasing budgetary and environmental pressures. Yet turf managers consistently strive to produce the best performing turf surfaces for their facilities.

ICL can help by providing a combination of appropriate seed products, tailored nutrition, plant protection and technical support.

Fertilizers

Turf managers across the globe trust ICL products to deliver outstanding results.

Our comprehensive range of turf and amenity fertilizers provides the highest quality nutrition for turf that's healthy, resilient and looks good.

Our unique, cutting edge, controlled-release technologies deliver nutrients accurately, efficiently and precisely.

Precision Nutrition

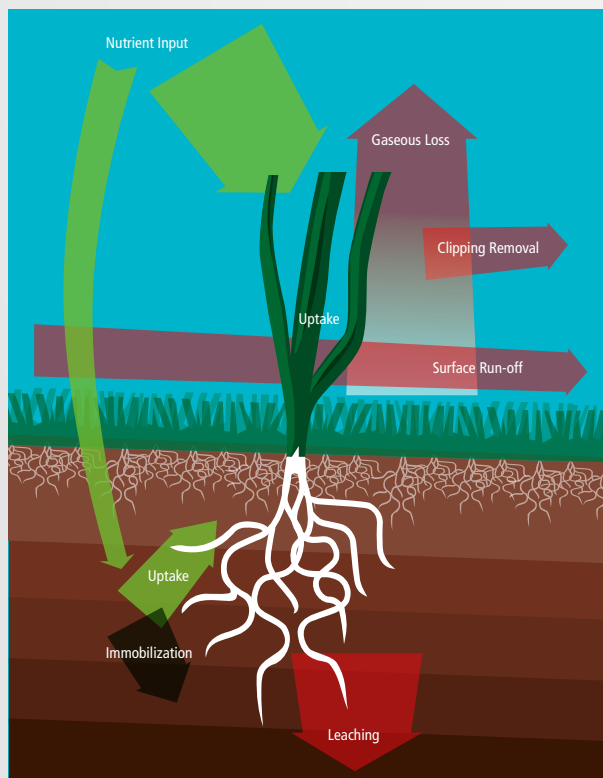
Turfgrass nutrition plays a vital role in all successful turf maintenance programmes.

Getting the right balance of essential elements enables the plant to function properly and promotes the growth of strong, healthy turf.

Our nutrition delivery technology is designed to help you maximise turf performance, minimise fertilizer inputs and eliminate waste. ICL fertilizers are designed to be part of your integrated turf management plan. How much fertilizer is needed depends on the situation, the demands being made on the turf and nutrients present in the soil.

Some fertilizers, including conventional, liquid and water soluble, release all their nutrients immediately after application. These products may deliver colour and fast growth, but nutrients can also be lost as quickly, through flushes of growth (which then needs extra mowing), surface run-off, leaching or gaseous losses.

Controlled Release Fertilizers give turf a more even colour and density, while reducing the number of applications.



- Safe and consistent feeding
- Nutrient release based on turf needs – no over or under feeding
- Efficient use of nutrients
- Less clippings/mowing
- Environmentally friendly
- Better turf quality

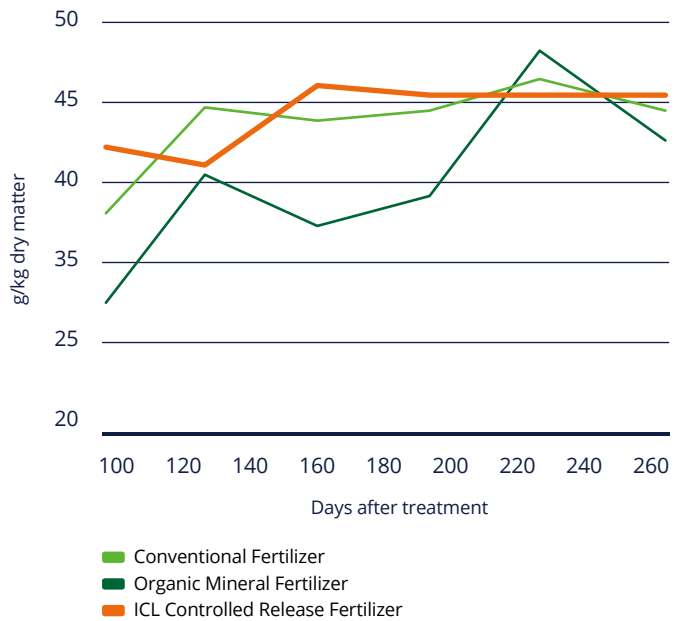
Strong and Resilient Turf

Too little nitrogen means there's not enough energy for grass to grow and fill bare patches after play. Too much makes turf more vulnerable to disease.

ICL's SierrablenPlus range with Poly-S and PACE technology provides the right balance of nitrogen in the leaf blade throughout the growing season, as shown by the graph.

Fertilizers such as SierrablenPlus also help with fertilization management. Whereas other technologies need 4-6 applications per season, fertilizers with Poly-S and PACE technologies give excellent, strong turf coverage with only two applications per year.

Nitrogen levels in leaf blade



Create a uniform surface for ball play

Better turf density helps to

Improve safety: Fewer bare patches so players are less likely to be injured during play

Improve surface drainage so allows for play soon after rainfall

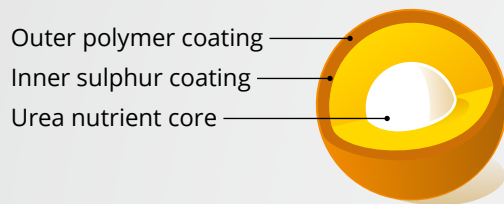
Prevent weeds establishing

Advanced Technologies

To help you manage your sportsturf effectively and maintain a sturdy, heathy turf sward, ICL offers a range of unique and advanced technologies and products. The ideal fertilizer programme produces consistent root and vegetative activity throughout the growing season without sudden flushes of growth.

Our nutrition delivery technology is designed to help you maximise turf performance, minimise fertilizer inputs and eliminate waste.

Poly-S coated granule technology



Polymer and Sulphur coating regulates Nitrogen release to suit plant demand.

Nitrogen granules are coated first with sulphur (a plant nutrient in itself) and then a unique polymer membrane, which is degradable. Once moisture permeates this outer polymer membrane and sulphur coating, Nitrogen is released. Depending on the thickness of the coating, this can last up to six months. Major increases in soil temperature and/or moisture do not create severe fluctuations in this release pattern, ensuring that Poly-S provides non-surge growth and a healthy, green turf even in warm, wet conditions. Because nutrient uptake is so efficient, the risk of leaching is reduced.

PACE Resin coated technology

Nutrient is combined within each granule.



Resin coating of NPK and trace elements to provide tailored release patterns.

PACE is a controlled release technology fertilizer containing more than one nutrient. Our unique vegetable-based resin membrane ensures the plant receives 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. When applied, pressure starts to build up within the granule, forcing nutrients through the semi-permeable vegetable-based coating. The release is not influenced by soil moisture levels, pH or bacterial activity, so remains consistent over a wide range of environmental conditions.



Sierrablen 31-5-7 contains ICL's patented Poly-S coating technology and is the ideal first controlled release fertilizer of the growing season.

MU2 technology

SierraformGT contains the correct and most effective combination of nutrients for the grass plant. Every granule has an identical composition. The result is even growth and an even colour all over the entire turf area.



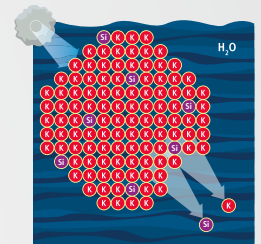
Extended Nitrogen release in microfine granules.
Slow release Nitrogen that can be incorporated with a combination of quality nutrient sources.

MU2 technology ensures the fertilizer distributes nutrients uniformly when applied, for even and slow growth across the whole grass area, creating a dense sward and a strong rooting system.

Fertilizers containing MU2 technology are very safe to use. They have extremely low salt levels so the turf plant can't be burnt or damaged. The result is increased longevity of up to eight weeks (depending on environmental conditions).

SiLK Slow release Potassium

Slow release Potassium in combination with Silica has been shown in trials to improve drought tolerance.



A key ingredient of premium formulations to extend Potassium and Silica release and minimize leaching loss.

Potassium is important for water regulation, protein synthesis, storage of starch and meristematic growth in plants as well as activating enzymes. With SiLK, a larger bank of Potassium remains in the root zone available for plant uptake over a period of approximately 8 weeks. Silica improves both the structure and strength of cells, helping to protect the plant from disease. Excessive soil moisture does not affect the release mechanism.

SiLK

Potassium is an important ingredient for: water regulation, protein synthesis, the storage of starch for growth, and for activating enzymes. Our SiLK technology also ensures that a reserve of Potassium remains in the rooting area; readily available for uptake in the plant.

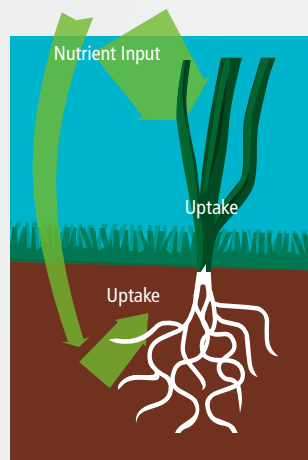
The presence of Silica improves the strength and structure of the plant's cells, aiding in disease protection. The increase in cellular structure gives the green a faster speed. SiLK technology also prevents the plant from losing essential nutrients that can cause leaching deeper down in the soil.



Premium conventional sources

The choice of nutrient source is essential for effective uptake and longevity.

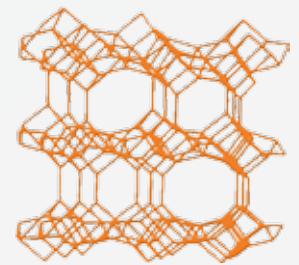
ICL include premium quality ingredients in all formulations.



ICL only uses Urea and ammoniacal Nitrogen sources (primarily from Ammonium Sulphate) in the Greenmaster Pro-Lite range. We deliberately avoid the use of nitrate Nitrogen, which can leach easily or increase the risk of damaging disease outbreaks. At ICL all our ingredients are considered to be crucial to achieving the best results.

Pro-Lite technology

3D cage framework of Pro-Lite technology.



Pro-Lite technology is based on Zeolite and it has a three dimensional cage framework of Silica alumina and other molecules that act as a microscopic sponge due to the number of spaces and channels.

Excess oxygen in the framework creates a strong negative charge, meaning it has a very high attraction for positively charged ions (cations) such as NH_4^+ , Mg^{++} , Ca^{++} etc. Due to this strong negative charge, Pro-Lite has a Cation Exchange Capacity (CEC) of around 180meq/100g. Pro-Lite is able to hold onto cationic nutrients and water molecules until they are needed by the plant, giving an extended period of nutrient delivery.

Advantages of Greenmaster Pro-Lite

1.
Improves health and appearance of fine turf

2.
Ideal in autumn or as first granular fertilizer of the season



4.
Controls moss, whilst strengthening the sward to overcome any mechanical damage

3.
Low Nitrogen, high Potassium helps to harden turf



ICL's vision is to harness our assets and capabilities to be a leader in the development of innovative and creative solutions that address the essential needs of humanity in an ever changing world

Technology at work

Everris products and technologies have been designed to suit particular circumstances and mimic the nutrient demands of the turf plant throughout the year. Working in partnership with turf managers, our technical advisers can provide site-specific programmes complemented by a range of tools, research data, and ongoing technical support to help eliminate problems with appropriate early action.

Sierrablen®

Sierrablen Plus

SierrablenPlus contains high amounts of nitrogen, phosphorus and potassium controlled release coating technologies, like Poly-S and PACE. These come in mini granules, for use on a wide variety of turf surfaces from golf tees to sports fields and fairways that are mown to a height as low as 6mm.

The application of a controlled released technology guarantees a longer-lasting effect (3 & 4-5 months) and a fast initial start. Due to coating technologies, the salt index of the range is extremely low, resulting in optimal growing conditions within the root zone. In addition, the high analyses and low application rates make the use of the SierrablenPlus range more cost effective than many other fertilizers, as it takes fewer kilograms to treat the same area for longer.

Sierrablen

Sierrablen is the larger granule version of SierrablenPlus but with all the benefits.

It contains high amounts of nitrogen controlled release coating technologies like Poly-S, while some products also contain Potassium and Phosphorus controlled release coating technologies like PACE, for use on a wide variety of turf surfaces that are mown to a height as low as 12mm. The application of coating technologies guarantees a longer lasting effect and a fast initial start. The product can be easily spread by a pedestrian or a tractor-mounted spreader, giving a wide choice of application.

The SierrablenPlus Range

Product	Analyses	Oxide	Longevity
SPRINGSTARTER	24-5-13		3 months
N-START	30-5-5		3 months
ACTIVE	19-5-18+2MgO+TE		3 months
RENOVATOR	20-20-8		3 months
STRESS CONTROL	15-0-28+2MgO		3 months
SPRING STARTER	24-5-8+2MgO		4-5 months
ACTIVE	18-5-18+2MgO		4-5 months
STRESS CONTROL	15-5-22+2MgO		4-5 months

The Sierrablen Range

Product	Analyses	Oxide	Longevity
SIERRABLEN	16-8-16+5MgO+Fe		2-3 months
SIERRABLEN	15-0-25+4MgO		2-3 months
SIERRABLEN	31-5-7		2-3 months
SIERRABLEN	16-25-12		2-3 months
SIERRABLEN	24-5-10 +Fe		4-5 months
SIERRABLEN	22-0-20		4-5 months
SIERRABLEN	14-5-21+2MgO+TE		4-5 months
SIERRABLEN	28-5-5+Fe		5-6 months
SIERRABLEN	27-5-5+Fe		8-9 months



Sierraform[®] GT

Sierraform GT

SierraformGT particularly excels on turf that is mown to less than 6mm because the granule size is very fine.

Each granule contains all of the nutrients the turf requires. The product is homogeneous, disperses quickly into the turf sward and will not be picked up by a mower. The MU₂ and SiLK technologies make sure the plant receives important nutrients, while it develops stronger cell walls to fight wear and tear, as well as disease. Due to the advanced slow release technologies used, none of the cultivation techniques will affect the release pattern of nutrients, which gives the user lots of freedom when it comes to maintaining the area. Furthermore, the salt index of the range is extremely low, which results in optimal growing conditions within the root zone.

The Sierraform GT Range

Product	Analyses	Oxide	Longevity
SPRING START	16-0-16+Fe+Mn		6-8 weeks
MOMENTUM	22-5-11+2MgO+TE		6-8 weeks
ALL SEASON	18-6-18+2MgO+TE		6-8 weeks
NK	19-0-19+2MgO+TE		6-8 weeks
ANTI-STRESS	15-0-26+Fe		6-8 weeks
K-STEP	6-0-27+MgO+TE		6-8 weeks
PRESEEDER	18-22-5		6-8 weeks

ProTurf[®]

ProTurf

ProTurf is renowned for delivering a healthy and consistently growing turf for up to 2 months.

Its innovative combination of compound fertilizers and controlled release technology make it unique in the field. Additionally, each product contains extra Magnesium and Calcium to not only keep your turf looking greener, but also stronger. ProTurf products get a quick and positive reaction from your turf!

The ProTurf Range

Product	Analyses	Oxide	Longevity
PROTURF	20-0-7+3CaO+3Mgo		2 months
PROTURF	18-0-7+3CaO+3Mgo		2 months
PROTURF	21-5-6+2.5CaO+2.5MgO		2 months
PROTURF	15-5-15+2CaO+2MgO		2 months
PROTURF	12-5-20+2CaO+2MgO		2 months



Sportsmaster CRF Mini

Sportsmaster CRF Mini is a mini granulated product range containing the ideal mix of coated and uncoated nitrogen.

The range of products is suited to areas which are mown above 6mm. Controlled release technology (Poly-S) within this range of products ensures regular growth without peaks, whilst uncoated material gives the grass plant an immediate boost for a fast start up. A high amount of mini granules are used per square metre so turf density is boosted. Due to its high analyses and low application rates, the Sportsmaster CRF Mini range is more cost effective as it takes fewer kilograms to treat the same area.

Sportsmaster CRF

Sportsmaster CRF is a granulated product range with normal size granules, containing an ideal mix of coated and uncoated nitrogen.

Some analyses with this range also contain controlled release phosphorus and potassium to stimulate root growth and strengthen the leaf blade over longer periods. This range is ideally suited to areas that are mown to a height of over 12mm. The longevity makes it an excellent choice compared to conventional fertilizers should you wish to reduce the number of applications per year. The product can be easily spread by a pedestrian or a tractor mounted spreader, giving a wide choice of application possibilities.

The Sportsmaster CRF Mini Range

Product	Analyses	Oxide	Longevity
HIGH N	24-5-11		2-3 months
ACTIVE	15-5-15+2CaO+2MgO		2-3 months
SPRINGSTARTER	20-5-10+2MgO		2-3 months
STRESS CONTROL	10-5-21+2CaO+2MgO		2-3 months
START	19-19-5+2MgO+TE		2-3 months
HIGH K*	13-5-20+2MgO+Fe		2-3 months
PERMANENT	17-7-16+2MgO+Fe		2-3 months

The Sportsmaster CRF Range

Product	Analyses	Oxide	Longevity
HIGH N	26-5-11+2MgO		2-3 months
BALANCED	18-8-17+2MgO+Fe		2-3 months
RENOVATOR	23-23-5		2-3 months
SPORTSMaster CRF	16-6-26		2-3 months
HIGH K	16-6-25		2-3 months

* Sale of some products may be prohibited due to Import Country specific regulations.



Sportsmaster WSF

Sportsmaster WSF is a new foliar feed product based upon our TMax technology, designed for use on sport fields and fairways as a top up to the base controlled release fertilizer plan.

TMax technology maximizes the uptake of nutrients and results in a high quality turf grass with one easy liquid application. It helps give the grass extra colour during tournament play or aid more vigorous growth over a limited time to fill bare patches that can occur during extreme play.

The Sportsmaster WSF Range

Product	Analyses	Oxide
HIGH N	35-0-14+Fe	
SPRING & SUMMER	28-5-19+TE	
SEAMAX	4-0-15	
HIGH K	15-0-43+FE	

Sportsmaster

Many fertilizers in the ICL ranges contain controlled release technologies providing nutrition over an extended period.

There are circumstances however, when the turf manager may not need all the benefits these particular products can give. Sportsmaster fills that requirement. The Sportsmaster products contain compound granular fertilizers. They are manufactured as mini-granules providing ease of application and an even distribution. This ensures even growth, quality and colour over the whole area and prevents unsightly speckling effects.

The Sportsmaster Range

Product	Analyses	Oxide
BASE CAL K MAG	0-0-14+5CaO+6MgO	
BASE PRE-STRESS DOUBLE K	6-0-12+4CaO+5MgO	
CAL K MAG*	12-0-9+Fe	
SPRING & SUMMER*	9-7-7	
AUTUMN*	4-12-12	
FAIRWAY*	12-6-9+3MgO	
ACTIVE	15-5-15 +Fe	
PRESEEDER*	8-12-8+3MgO	

* Sale of some products may be prohibited due to Import Country specific regulations.



Greenmaster Liquid

The Greenmaster Liquid range is developed around TMax technology to enhance nutrient uptake.

The nutrients used are specially sourced to assure uptake via the leaf blade, so this range of products produces a rapid reaction after application. Due to the flexible application and dilution rates, this range can be used for foliar or root uptake. Most products within the range are tank-mixable, which gives users a wide range of choice when it comes to creating the perfect solution for a specific area. The range gives the turf a consistent colour without producing the problem of rapid tail-off.

The Greenmaster Liquid Range

Product	Analyses	Oxide
HIGH N	25-0-0	
SPRING & SUMMER	12-4-6+TE	
NK	10-0-10+TE	
HIGH K	3-3-10+TE	
STEP LIQUID	Chelated Trace Elements	
EFFECT	6.3 Fe	
CA-BOOSTER	8-0-0+Ca	

Greenmaster

This range of products has been developed specially for turf areas that are mown to a height of less than 6mm.

The Pro-Lite technology gives turf plants an excellent head start during the colder periods of the year while it also improves the longevity (up to 6 weeks) and performance of the fertilizers. Each homogenous granule contains nitrogen, potassium and phosphorus, and because the product is homogenous and disperses quickly into the turf sward, it will not be picked up by a mower. The fine granules result in a high amount of granules per square metre when applied, which helps to create a denser turf area.

The Greenmaster Range

Product	Analyses	Oxide
PRO-LITE AUTUMN*	6-5-10+6Fe	
PRO-LITE ZERO PHOSPHATE	14-0-10+3MgO	
PRO-LITE DOUBLE K	7-0-14+4Fe	
PRO-LITE SPRING & SUMMER*	14-5-10+2MgO	
PRO-LITE NK*	12-0-12+3MgO+2Fe	
PRO-LITE AUTUMN MG	6-5-11+3MgO+Fe	
COLD START	11-5-5+8Fe	

1. Ideal for main growing periods

2. Phosphorous and Potassium promote good sward

3. Replaces nutrients lost in grass clippings

4. Magnesium enhances turf health and color

5. High Nitrogen content for good top growth and recovery



* Sale of some products may be prohibited due to Import Country specific regulations.



ICL provides the agronomic advice and technical back-up you would expect from a leading global company

Grass Seed

Seed is one of the most important building blocks of high quality sports surfaces and landscaped areas.

As part of an integrated approach to turf management through iTurf, we have a comprehensive range of seed solutions to meet your individual needs and aspirations.


ICL has been breeding and trialling a range of new turfgrass cultivars across all the major species. Working with a US-based partner we are developing breeds that combine all the advantages of US seed genetics and emphasise those attributes more suitable for a European climate.

As well as producing breeds using US seed genetics, our European programme, run in parallel, also promises to yield some very nice cultivars indeed. Early stage cultivars are showing all the traits a turf manager could want for producing excellent turf. Some are already eligible for certain European national listings.

Trials and screenings at our breeders' site in Holland have also been used to demonstrate the breadth of the cultivar portfolio, with turf managers closely involved in making decisions about characteristics they would like to see in blends in future.

For many years, US turfgrasses have been sold into and used across Europe. While these have offered good disease and heat tolerance and a dark green colour preferred by southern European users, they haven't always offered the wear characteristics or colour required by winter season sports surfaces in northern Europe.

Now, new breeds are coming out of Europe and the US too. They will deliver the improved wear characteristics suitable for winter sports pitches, such as football and rugby, and are mid-green in colour.



ICL offers a comprehensive turfgrass seed portfolio with cultivars that will now accommodate a far wider range of environmental conditions and are more adaptable across a range of management regimes.

ProSelect Turf Grass Seed Blends

ProSelect is our range of turfgrass seed blends developed for use on golf courses, sports fields, in turf and sod production and by landscape contractors. Varieties in the range are selected through extensive breeding, bringing you the most up-to-date material available.

- Specially blended for professional use
- Country-specific blends recognising regional variation
- Formulated with the most up-to-date varieties from our extensive portfolio
- Independently tested with outstanding levels of purity and germination
- Backed up by local technical support as part of an ICL iTurf programme

Individual Grass Seed Varieties

We also offer a comprehensive range of individual grass seed varieties for golf, sports, landscaping and amenity turf.

Golf course managers can produce fast, true greens using creeping bent grass, browntop bent or fescue, and complement those greens, add colour and contrast, and enhance all-round playability with our fine turf varieties. There's also a range of varieties suitable for maintaining strong, healthy turf on fairways, tees, rough and semi-rough areas.

Perennial Ryegrass is the choice of sports ground managers, but it is increasingly used on the golf course where the durability of the sward benefits areas under stress from intensive wear.

Our Perennial Ryegrass varieties combine outstanding aesthetic appearance with strength and durability, producing playing surfaces that withstand the demands of intensive match schedules.

Visit www.icl-sf.com to view our full grass seed portfolio. Here you can select your local country site to find out more about the seeds varieties and blends appropriate for your region.





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