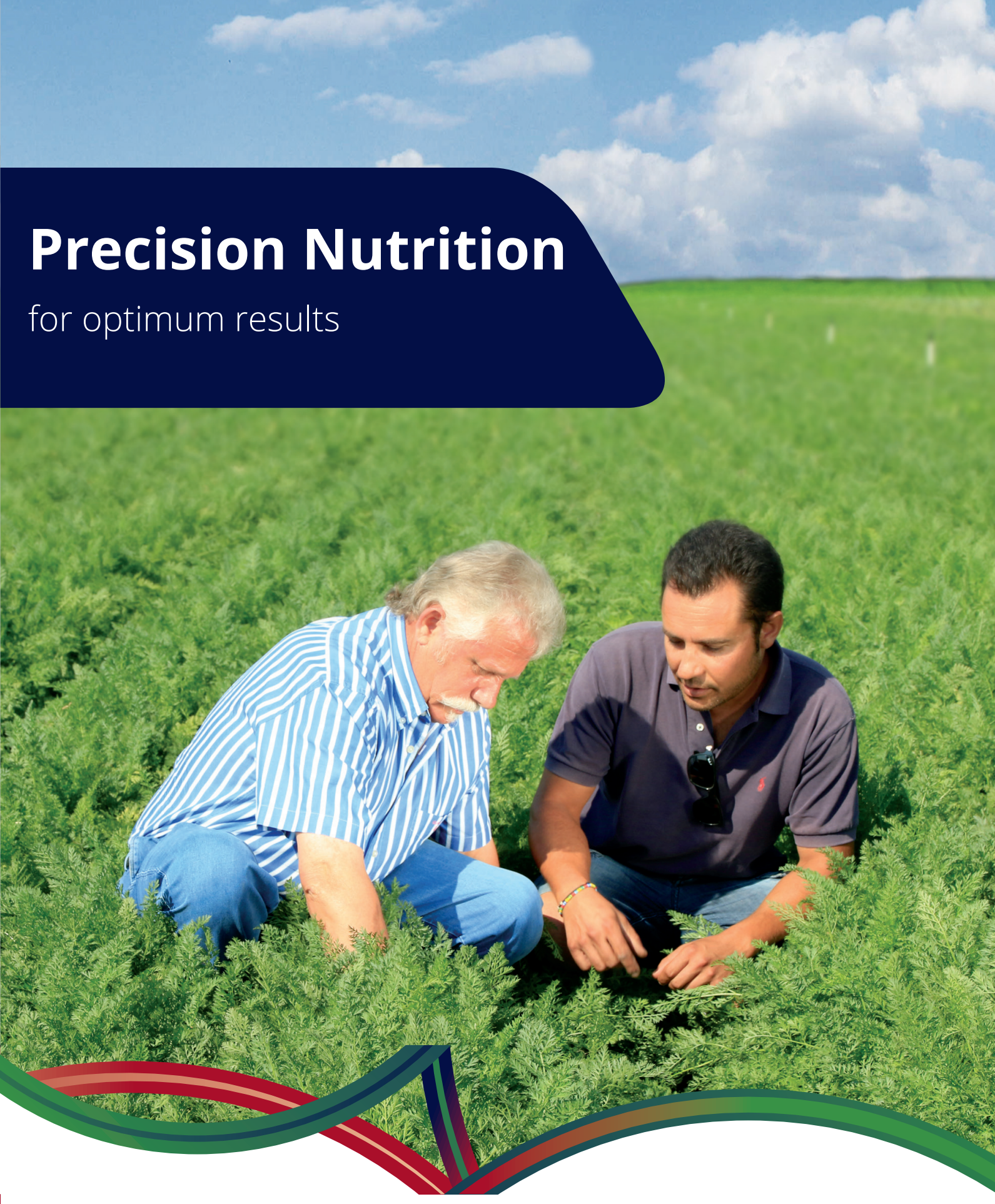
Precision Nutrition

for optimum results



www.icl-sf.com

ICL Specialty Fertilizers

ICL Specialty Fertilizers, focus on quality

ICL takes great pride in the integrity and value of its product portfolios and dedicated technical support services. The Agriculture group of ICL focuses on the production of open-field, tunnel, and greenhouse crops which include fruit (top fruit and soft fruit), vegetables, agricultural crops such as cereals, oil seed rape, potatoes, nursery stock, and bulbs. Although we have a broad view in terms of Specialty Agriculture, we have a tight focus on one crucial ingredient: quality.

The ICL view of quality revolves around three key issues

1. Innovation – ICL is the recognized standard for product innovation and performance. Innovation areas include controlled release technologies, water conditioning soluble fertilizers, and liquid fertilizers.
2. Best ingredients – What you give is what you get! ICL only accepts the best ingredients to provide consistent and trouble-free products for optimum plant growth.
3. Reliability – ICL's production methods are verified by numerous 'ISO' certifications.

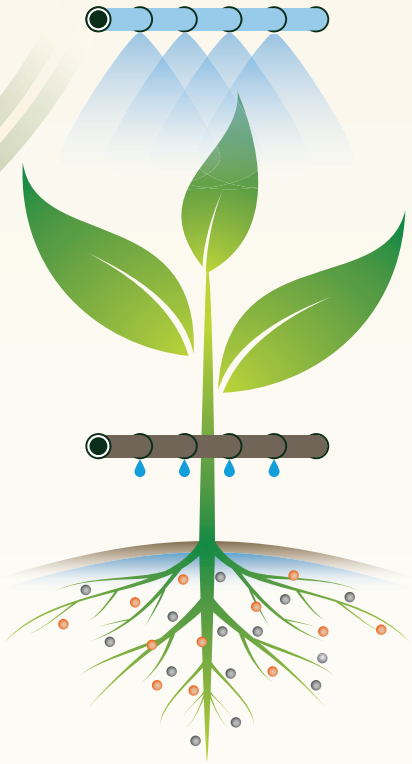
Index

Section 1

Innovative solutions for every crop

Innovative solutions for every crop

Scan the QR code for watching the Plant Nutrition video



FOLIAR FEED

Agroleaf® Power | Agroleaf® Liquid | Agroleaf® Special | Nutrivant®

FERTIGATION

Agrolution® | Solinure® | Select

CONTROLLED RELEASE

Agromaster®

Agroblen® | Agrocote®

Optimal Plant Nutrition

Optimizing and modifying the nutritional status of plants requires the correct products. ICL has developed specialized fertilizer products that match your application technique: foliar, drip or soil applied. The product ranges for Agriculture are divided based on these techniques.

The products serve a clear purpose in optimizing plant nutrition of your crops. From exclusive controlled release technology to high-quality drip feeding and fast and effective foliar feeding, ICL has a nutritional solution that fits your production system feeding, ICL has a nutritional solution that fits your production system.

Making the choice for productivity

Many factors influence yield and quality and the nutrition used is part of this. In reality, the nutritional input is a small percentage of the total cost of production but it has a major effect. If you consider that the minerals and nutrients used are only 4% of the total weight of the plant then the amount that they contribute is immense. The correct nutrients used as part of a nutrition programme are crucial for “steering” the yield and quality of your crop. With products and advice from ICL you are investing in a crop that is both financially and personally rewarding.
Innovative solutions.

Section 2

ICL - Leader in fertilizer technologies

Content

ICL Specialty Fertilizer Technologies

The rise in global demand for food and the diminution of available agricultural land means that farmers are constantly searching for ways to optimize yield. At the same time, a sustainable form of farming is becoming more and more crucial. ICL Specialty Fertilizers provides unique and effective solutions, application methods, and agronomic advice for increasing yield and quality. ICL invests annually in fertilizer innovation in fertilizers, enabling farmers to optimize their operations.

Brand	Foliar Technologies				Fertigation Technologies	Coating Technologies		
	M-77	DPI	Advanced Uptake Fertivant Technology	X3 ACTIVE!	FeKacid	E MAX	POLY S	R RESIN
Agroleaf Power	✔	✔						
Agroleaf Special				✔				
Nutrivant			✔					
Agrolution pHLow					✔			
Solinure FX					✔			
Select					✔			
Agroblen							✔	✔
Agromaster						✔	✔	✔
Agrocote						✔	✔	✔
Micromax				✔				

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

2.1 ICL - Leader in fertilizer technologies
FOLIAR TECHNOLOGIES

M-77 Technology

Foliar feeding is an excellent solution when the plant root system is not functioning optimally or when nutrition via the soil is malfunctioning. This form of feeding is ideal when root uptake is disturbed by factors such as overly cold or warm soils, high soil pH, high weed competition, or nematode infestation. Foliar fertilizers are also perfect for use as a preventative tool to avoid and reduce stress situations.

M77 is an exclusive package of compounds that have defined purposes. This package includes ingredients that enhance the delivery of the spray solution, its speedy uptake, and the effectiveness of the nutrients included on their target organs and tissues. An additional innovative, patented plant booster takes plant nutrition one step further. All these ingredients result in healthier and more productive crops.

The M-77 formula contains

1	Compounds extending the effectiveness of the chelates supplied by the foliar spray
2	Vitamins that improve the metabolic activity of the tissues absorbing the spray
3	Functional elements that improve the utilization of the nutrients
4	Stress-reducing compounds that enhance the plant's resistance to abiotic stresses, thereby maintaining its productive capacity

DPI Technology

ICL's Double Power Impact (DPI) technology complex provides an extra stimulant creating highly efficient photosynthetic reactions – the process by which plants use light as an energy source to make glucose from carbon dioxide and water. This is achieved by boosting transpiration rates and chlorophyll levels.

With a natural origin, the DPI stimulant has been proven to improve transpiration levels leading to higher CO2 assimilation rates. The DPI complex also improves chlorophyll levels in treated leaves, as well as leaf weight and size. Improvements in the availability of applied nutrients have also been demonstrated – particularly nitrogen and phosphate in the plant. In addition, DPI also boosts the availability of the applied nutrients. Independent work has shown a 200 hour (10 day) improvement compared with other fertilizers.

Fertivant Technology

Fertivant is based on the adjuvant technology that can break through the leaf cuticle. It enables good penetration by the foliar solution with all its dissolved ingredients. The advanced Fertivant Technology therefore ensures efficient uptake of all valuable minerals and bio-stimulants.

The Fertivant Technology dramatically increases the effectiveness of the foliar spray, improves yields, quality and thus the growers' revenues. Its high effectiveness means spray volumes can be reduced, which in turn results in a marked cost saving for the grower. Moreover, the Fertivant Technology provides a continuous release of the nutritive elements, that lasts for up to four weeks after the actual spraying. We call this LLP; Long Lasting Performance. Needless to say, Fertivant Technology is based on chloride-free compounds, and can therefore be applied to all kinds of crops. Foliar feeds employing Fertivant Technology fit into all fertilization programs.

X3-Active Technology

X3-Active is a specific, selected plant growth enhancer which is designed to facilitate the absorption of trace-element compounds into plant leaves and optimizes the trace elements by a large variety of crops. X3-Active is used in various trace element products in the ICL portfolio.

X3 plant growth enhancer gives:

- Better plant growth
- Better plant quality
- More vigorous plant

PeKacid Technology

PeKacid a unique, patented, mono-crystal, water-soluble phosphoric acid in dry form. It is nitrogen free and contains no sodium or chlorine.

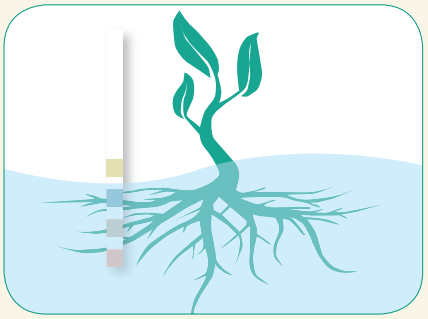
It combines the advantages and efficiency of phosphoric acid with the ease and safety of a solid crystalline fertilizer. The use of PeKacid (An "acid in the bag" product) replaces the conventional application of technical- and agricultural-grade phosphoric acid, resulting in an easier, safer and more effective fertilization process. Due to its acidic nature, PeKacid has an anti-clogging action and enhances nutrients' uptake. ICL Specialty Fertilizers uses PeKacid technology in many of their water-soluble fertigation formulations.

The benefits of PeKacid technology

1	Reduces pH of hard water when applied directly into the water
2	Prevents clogging in the irrigation / fertigation systems, in turn allowing uniform water and fertilizer distribution across the field
3	Cleans clogged drippers by dissolving precipitates formed during irrigation / fertigation
4	The acidification effect decreases P-fixation in the rhizosphere and promotes (trace)elements uptake in alkaline soils (pH >7)
5	Simplifies handling thanks to the unique dry form of phosphoric acid

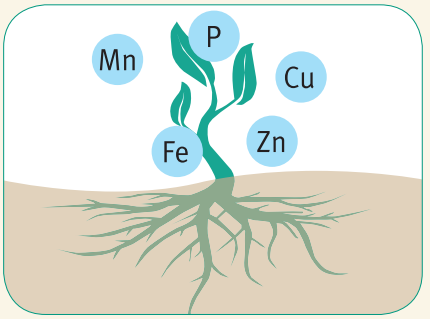
Scan the QR code for watching the effect of Pekacid in lowering the pH when added to a water sample of high pH

PeKacid effect



Low pH

Anti clogging action



Enhances nutrient uptake

pH levels of different Phosphate sources

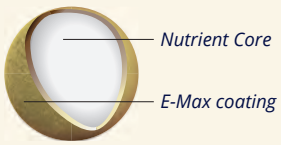
Phosphate source	pH Level (10 gr/l)
PeKacid 0-60-20	pH 2.2
MAP 12-61-0	pH 4.7
MKP 0-52-34	pH 4.5

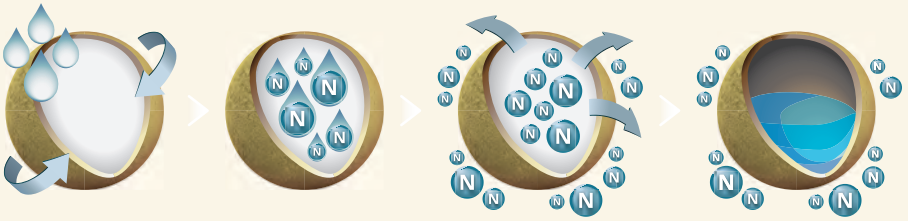
2.3 ICL - Leader in fertilizer technologies
COATING TECHNOLOGIES

Controlled Release Fertilizers (CRF) reduce nutrient losses, reduce the number of applications needed, and optimize crop yields. A good Controlled Release Fertilizer is determined by the quality of the coating. At ICL we use our extensive experience in coating to create products with an accurate release time in order to fulfil the product promises.

E-Max Release Technology

E-Max release technology is a polymer coating which improves nutrient use efficiency. The release of nutrients is based upon moisture and temperature, offering predictable longevities. Influenced by the temperature, the semi-permeable coating regulates the daily release of nutrients. At higher temperatures, the release of nutrients will be faster. At lower temperatures, it will be slower, in line with the nutritional needs of the plant.





Under the influence of the soil temperature, moisture penetrates the semi-permeable E-Max coating and dissolves the nutrient core.

The moisture uptake and dissolution of the nutrient core results in build-up of osmotic pressure inside the E-Max coated granule.

The osmotic pressure causes the nutrient solution to release through microscopic pores in the E-Max coating.

The osmotic pressure causes the nutrient solution to release through microscopic pores in the E-Max coating The nutrients are fully released and the E-Max coating disintegrates into the soil.

Benefits of E-Max Release Technology

1	Reduces leaching, volatilization, and other forms of nutrient losses
2	Reduced input costs thanks to optimally efficient use of nutrients
3	Controlled and consistent nutrient release influenced by temperature and moisture
4	The thin coating allows for higher nutrient ratios, making it possible to reduce application rates and frequency
5	Increased coating durability enhances blending with other raw materials and allows various application methods
6	Reduced salinity level protects against toxicity when applied in rows

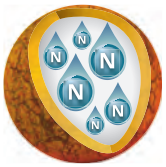
Scan the QR code for watching the E-Max Release Technology video

Poly-S Release Technology

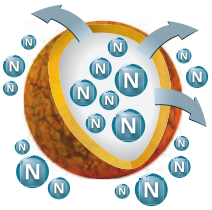
Poly-S is a sulphur-based coating that starts reacting under influence of micro-organisms in the soil and the water.

Poly-S Release Technology is less dependent on temperature and is therefore ideal for application in winter crops.

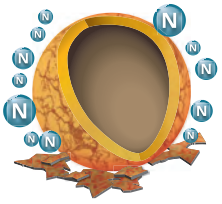
Moisture penetrates the coating and dissolves the nutrient core



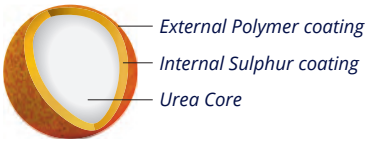
Bacteria convert sulfur to sulfate while nutrient solution starts releasing



Nutrient solution continues to release through the Poly-S coating as soil temperature rise



Nutrient is fully released; only minor Sulphur coating remains and begins to decay

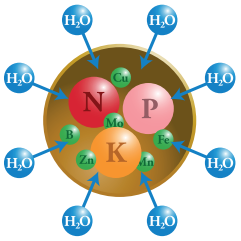


Benefits of Poly-S Release Technology

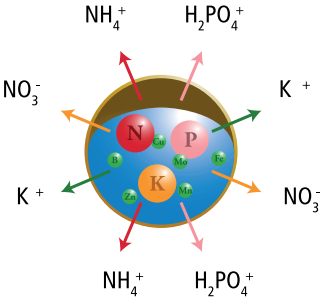
1	ICL Specialty Fertilizers' Poly-S coating technology dramatically reduces the amount of inefficient nitrogen that escapes into the atmosphere
2	Maximized use efficiency of nutrients saves on input costs
3	Sulphur coating component adds nutrient value to encourage greater crop yield and quality
4	Consistent longevity across multiple temperatures

Resin Release Technology

The controlled release of nutrients through the protective resin coating is initiated and regulated by the soil temperature. The precise metering of nutrition optimizes crop uptake and utilization. The quantity of inefficient nutrients that escape into the atmosphere or soil is significantly reduced, minimizing the environmental impact.



Water vapour penetrates the granule



The elements are dissolved and graduatly released

Benefits of Resin Technology

1	The resin coating technology combines the release of N, P, and K at the same time
2	The technology provides the maximum security for the crop
3	Increased durability in blending and application
4	Controlled and consistent nutrient release timing is regulated by temperature
5	Maximized use efficiency of nutrients saves on input costs
6	Products that contain this technology can be applied in the row or in the plant hole which results in maximum efficiency

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

Section 3
Sustainability

More with less !

ICL Specialty Fertilizers is a leading global speciaized fertilizer manufacturer. In this role we fully recognize the importance of responsible environmental protection and sustainable practice.

Responsible Care®

ICL is a member of the Responsible Care® Program that is dedicated to achieving improvements in environmental global health, safety, and environmental performance. ICL is a signatory to the principles of the Responsible Care Global Charter of the International Council of Chemical Associations.

The principles cover:

- Product stewardship
- Responsibility for environmental risk management
- Increased transparency across the supply chain
- Contribution to sustainable development
- Increased dialogue with stakeholders and external controls

Environmental Policy

ICL Specialty Fertilizers believes in working together for a greener and more sustainable future. We embrace our responsibility to promote a sustainable environment and have established an environmental policy based on three core values.

1 Protecting the environment

ICL avoids processes that generate gaseous pollutant emissions and installs closed circuits for waste water recycling. We have also made a commit-ment to providing all our emplo-yees with the required training and tools to operate in an environmentally-responsible manner. It is our duty to protect the environment and we aim to reduce energy and water consumption.

2 Monitoring environmental impact

In our policy, we are committed to assessing the environmental impact of all our processes. We also actively invest in new cleaner and safer technologies to improve production efficiency and reduce energy consumption.

3 Promoting best agronomic practices

ICL promotes best agronomic practices in order to ensure the safe and optimum use of fertilizers. We promote tailor-made application methods so that the dose precisely matches the plant's specific needs. We also advise our customers on the best way to transport, store, and handle our products with consideration for the environment.

ICL Specialty Fertilizers & GLOBALG.A.P

ICL Specialty Fertilizers is an Associate Member of GLOBAL G.A.P., supporting this worldwide organization with its crucial objective: the promotion of safe and sustainable agriculture practices to make this world a better place for our children.

GLOBALG.A.P. is a product of a network of partnerships that extends around the globe. By complying with a single harmonized global standard for safe and sustainable food production, producers can demonstrate their commitment to Good Agricultural Practice.

GLOBALG.A.P. The Global Partnership for Safe and Sustainable Agriculture — MEMBER

ICL's mission regarding sustainable plant nutrition

e3

EFFICIENCY • ECONOMY • ECOLOGY

Efficiency

- ✓ Improving nutrition delivery and efficiency

Economy

- ✓ Reducing fertilizer, labor and resource input
- ✓ Generating optimal yield per season

Ecology

- ✓ Minimizing nutrient loss through the optimal location of the fertilizer

Section 4

Portfolio - ICL Specialty Fertilizers

Content

4.1 Portfolio - ICL Specialty Fertilizers
FOLIAR FERTILIZERS

Advanced Foliar Fertilizer Technologies ensure your success

Foliar feeding provides an excellent solution when the plant root system is not functioning optimally or when nutrient-provision via the soil is malfunctioning. This form of feeding is ideal when root uptake is disturbed by factors such as overly cold or warm soils, high soil pH, high weed competition, or nematode infestation. Foliar fertilizers are also perfect for use as a preventive tool to avoid and reduce stress situations.

ICL uses unique patented technologies like **M-77** and **Fertivant** to increase efficiency of the foliar application.

The ICL's foliar fertilizer portfolio includes both liquid and water-soluble fertilizers.

References	
Information about ICL's foliar technologies	Section 2 / page 10

On next pages you find a selection of typical foliar formulations.
Contact your local ICL sales adviser for the complete portfolio.

Agroleaf® Liquid

Agroleaf® Power

Agroleaf® Special

Nutrivant®

Foliar fertilizer technology is a unique, dynamic, and effective form of crop nutrition. ICL Speciality Fertilizers' research and development team have developed some of the world's leading and most innovative foliar nutritional solutions. These state-of-the-art solutions focus on applications for both curative and preventive actions.

The liquid fertilizer for foliar application

Agroleaf® Liquid

ICL Specialty Fertilizers has developed the Agroleaf Liquid range of liquid fertilizers for foliar application.

The Agroleaf Liquid foliar fertilizers act as an ideal preventative measure to help avoid nutritional deficiencies and reduce conditions of stress. In a situation in which the deficiencies are already clearly visible, it is vital to treat the plant via the foliar route. Foliar feeding can be used alongside standard base fertilization to support plants at the most critical stages of the cultivation cycle. The Agroleaf Liquid foliar fertilizers make it possible and convenient to provide applications that are combined with most agropharmaceuticals.

The Agroleaf Liquid range contains unique products that have been developed to eliminate any deficiencies and to support the growth of the plant during its most critical phases. All of the Agroleaf Liquid range is manufactured to guaranteed specifications using the highest quality materials.

They are easy to use, completely soluble, and can be tank mixed.

Foliar Feed

Benefits of Agroleaf Liquid

1. Agroleaf Liquid is designed to deal with deficiencies
2. Easy to use in 10 or 20-litre cans
3. Completely soluble can be tank mixed and can be applied together with most agrochemicals

The Agroleaf Liquid Range

Product Name	Analyses (%)
Agroleaf Liquid Total+	7-7-7+0.14 Zn EDTA+0.11 Mn EDTA
Agroleaf Liquid Man Z+	0-0-10+4.7 Mn EDTA+1.3 Zn EDTA
Agroleaf Liquid Zinc M+	0-0-9+3.7 Zn EDTA+2.3 Mn EDTA
Agroleaf Liquid Molycomplex	4-16-4+4Mo+0.1 B
Agroleaf Liquid B10	10 B

References	
Foliar application methods	Section 5 / page 79
Breakdown table of Agroleaf Liquid products	Section 6 / page 98

Agroleaf® Power

A unique water soluble fertilizer

Agroleaf Power delivers proven results at critical stages of the crop.

It boasts outstanding purity and a high nutrient content (zero chlorides). Its exclusive M-77 technology and Double Power Impact (DPI) complex guarantees good uptake and prolonged availability of micro-nutrients.
With all macro and micro-nutrients covered in the Agroleaf Power range, there is a product for every need. It can target every growth stage and correct nutrient imbalances as well as minor deficiencies. Thanks to the purity and high quality of the raw materials, Agroleaf Power products dissolve quickly and completely, making application easy.

Foliar Feed | DPI Double Power Impact | M-77

Benefits of Agroleaf Power

1	Foliar feeding with Agroleaf Power enables fast absorption by the plants
2	Very quick response time, so ideal as a curative foliar feed
3	M77 and DPI technology provide improved photosynthesis
4	Highly concentrated foliar feed, meaning less product to handle
5	Superior delivery and uptake of nutrients from M-77

The Agroleaf Power Range

Product Name	Analyses
Agroleaf Power Total	20-20-20+TE
Agroleaf Power High N	31-11-11+TE
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

References	
ICL's foliar technologies	Section 2 / page 10
Basics for water-soluble fertilizers	Section 5 / page 72
Foliar application methods	Section 5 / page 79
Mixability list	Section 5 / page 84
Breakdown table of Agroleaf Power products	Section 6 / page 98

The premium fertilizer that boosts crop productivity

Agroleaf® Special

Agroleaf Special is a premium, fully water-soluble foliar feed, widely used in agriculture and horticulture to prevent and control deficiencies in a wide variety of crops such as cereals, vegetables, flowers, and fruit-trees.

Agroleaf Special includes X3-Active technology which enhances nutrient uptake.

Foliar Feed

X3 ACTIVE!

Benefits of Agroleaf Special

1	Foliar feeding with Agroleaf Special enables fast absorption by the plant. Al ready within 24 hours the plant will be able to withstand physiological stress situations
2	Agroleaf Special boosts the plant's metabolism
3	X3 facilitates the absorption of the trace element into the plant's leaves and therefor results in effective uptake
4	Agroleaf Special dissolves quickly and completely, making solution preparation easy and trouble-free
5	Agroleaf Special can be tank-mixed with a wide range of other fertilizers and crop-protection compounds

The Agroleaf Special Range

Product Name	Analyses (%)
Agroleaf Special Mn	12 Manganese EDTA
Agroleaf Special Zn	14 Zinc EDTA

References	
ICL's foliar technologies	Section 2 / page 10
Basics for water-soluble fertilizers	Section 5 / page 72
Foliar application methods	Section 5 / page 79
Breakdown table of Agroleaf Special products	Section 6 / page 98

Nutrivant®

Long-lasting technology for improved foliar nutrition

Nutrivant formulations are designed for arable and large-scale crops. The Nutrivant range consists of fully-soluble formulations that contain an specially-designed macro and micro-nutrient mix for every crop's needs.

Foliar Feed

Advanced Uptake
Fertivant Technology

The efficiency of foliar feeds can be impaired by the leaf cuticle, a tough membrane that blocks or slows the penetration of nutritional elements and bio-stimulants. Nutrivant contains Fertivant, an environmentally-friendly built-in adjuvant that breaks through this barrier. Fertivant technology ensures the uptake of applied nutrients, which results in dramatic increases in yield, quality, and profits.

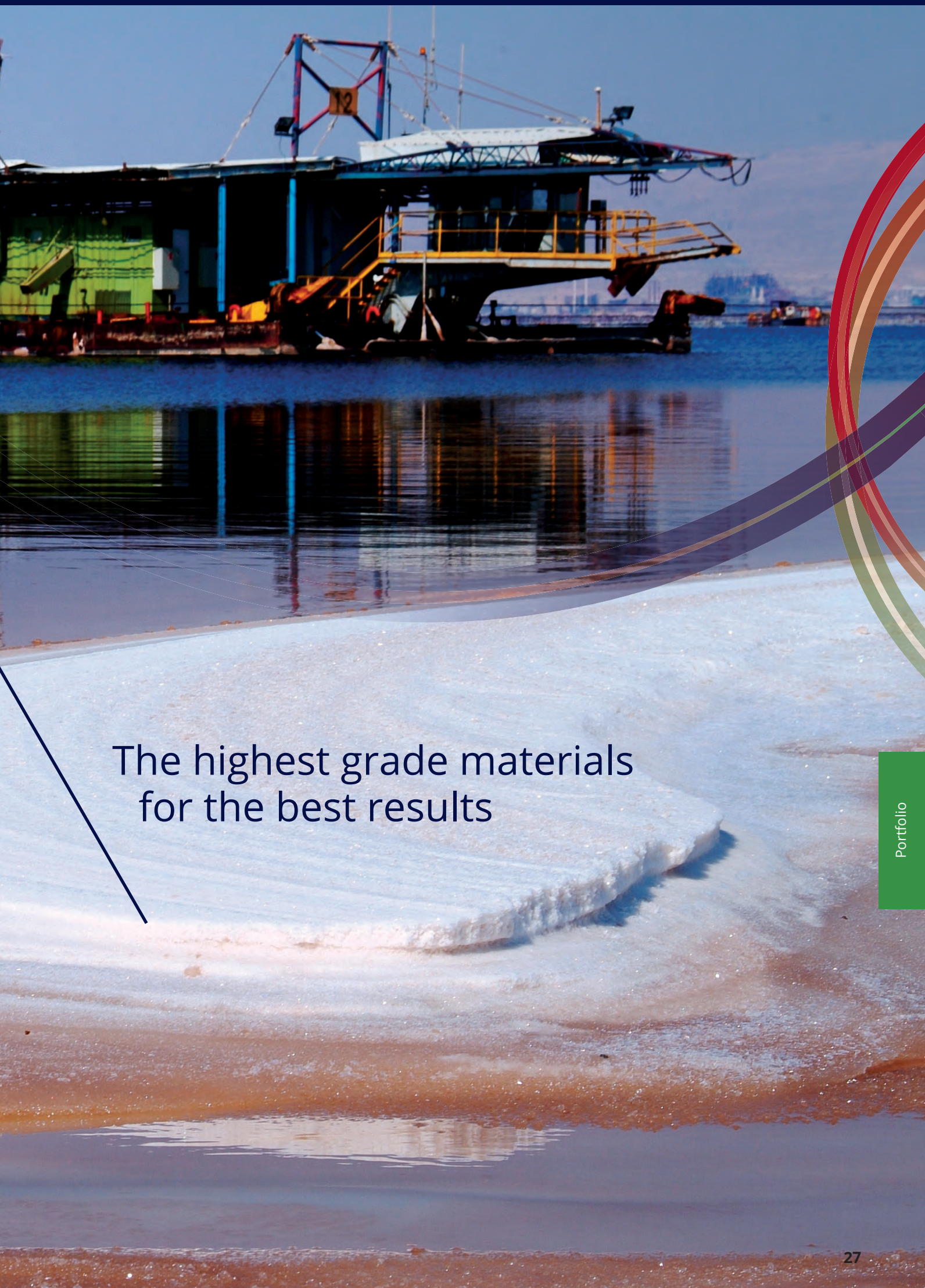
Benefits of Nutrivant

1	Crop-specific NPK analyses
2	Contains the unique Fertivant technology
3	The ultimate preventative foliar product
4	Portfolio including high levels of Ca, B, and Zn

The Nutrivant Range

Product Name	Analyses
Nutrivant Fruit Tree preparation	0-20-40+TE
Nutrivant Fruit Flower Booster	0-39-26+2MgO+TE
Nutrivant Fruit Sugar Booster	12-5-27+8CaO+TE
Nutrivant Cereal Growth	20-10-15+TE
Nutrivant Oil Crops Quick Starter	3-13-23+2MgO+TE
Nutrivant Sugar Beet Quick Start	3-28-18+2MgO+3B+1Mn
Nutrivant Potato Quick Start	4-37-24+2MgO+TE
Nutrivant Corn Quick Start	5-34-5+4MgO+3.4Zn+1Mn
Nutrivant Cereal Grain Quality	6-23-35+TE
Nutrivant Booster	8-16-39+TE

References	
ICL's foliar technologies	Section 2 / page 10
Basics for water-soluble fertilizers	Section 5 / page 72
Foliar application methods	Section 5 / page 79
Mixability list	Section 5 / page 84
Breakdown table of Nutrivant products	Section 6 / page 100



The highest grade materials for the best results

4.2 Portfolio - ICL Specialty Fertilizers
FERTIGATION FERTILIZERS

Precise nutrition to enhance crop production

Fertigation is a technique by which soluble fertilizers are mixed with the irrigation water to enhance crop productivity. It is a highly effective and flexible tool for controlling placement, timing, and nutrient application methods. This makes precise nutrient application possible according to the soil fertility status and growth stage of any crop.

ICL's fertigation fertilizer portfolio includes both liquid and water-soluble fertilizers.

ICL Specialty Fertilizers brands such as Agrolution pHLow and Solinure FX contain the unique PeKacid technology in their formulations.

References	
Information about PeKacid technology	Section 2 / page 12
Information about X3-Active Technology	Section 2 / page 11

On next pages you find a selection of typical fertigation formulations.
Contact your local ICL sales adviser for the complete portfolio.

Agrolution® Liquid

Agrolution® pHLow

Agrolution® Special

Solinure® GT

Solinure® FX

Micromax®

Select

The liquid fertilizer for fertigation

Agrolution® Liquid

ICL Specialty Fertilizers has developed the Agrolution Liquid range of liquid fertilizers for application via drip irrigation.

The Agrolution Liquid range includes complete packages of trace elements. At ICL Specialty Fertilizers we created Agrolution Liquid because we know that insufficient availability of trace elements in the soil can greatly affect crop yields, even if the plants only need small quantities.

The Agrolution Liquid range is manufactured to guaranteed specifications using the highest quality materials. They are easy to use, completely soluble, and can be tank mixed.

Fertigation

Benefits of Agrolution Liquid

1. Agrolution Liquid is ideal for dealing with deficiencies
2. Easy to use in 20-litre cans
3. Can be tank mixed

The Agrolution Liquid Range

Product Name	Analyses (%)
Agrolution Liquid ME-5	0,15 Cu EDTA+3,65 Fe EDTA+1,70 Mn EDTA+0,14 Mo+0,34 Zn EDTA
Agrolution Liquid ME-6	0,33 B+0,14 Cu EDTA+3,60 Fe EDTA +1,60 Mn EDTA+0,09 Mo+0,30 Zn EDTA

References	
Fertigation application methods	Section 5 / page 80
Breakdown table of Agrolution Liquid products	Section 6 / page 102

Agrolution® pHLow

The all-in-one fertilizer with acidifying power for better nutrient uptake

Agrolution pHLow is perfect for growers who have to deal with high pH and high alkalinity in their irrigation water and/or soils.

The acidic nature of Agrolution pHLow means that all the nutritional elements dissolve more efficiently, even in hard water. It is made of the purest ingredients and all trace elements in the fertilizer are chelated. It will keep the drip lines free of lime scale build up. Agrolution pHLow is a safe method compared to handling liquid mineral acids.

Benefits of Agrolution pHLow

1	Agrolution pHLow range reduces bicarbonates and has an acidifying effect
2	Keeps systems clean and will clean your drip lines
3	Easy-to-use all-in-one package of NPK plus trace elements
4	Pure ingredients
5	Dissolves completely

The Agrolution pHLow Range

Product Name	Analyses
Agrolution pHLow 114	10-10-40+TE
Agrolution pHLow 151	10-50-10+TE
Agrolution pHLow 335	15-13-25+Te
Agrolution pHLow 242	15-30-15+Te
Agrolution pHLow 531	22-10-7+2MgO+TE
Agrolution pHLow 222	20-20-20+TE

References	
ICL's fertigation technologies	Section 2 / page 10
Basics for water-soluble fertilizers	Section 5 / page 72
Fertigation application methods	Section 5 / page 80
Dilution Table	Section 5 / page 94
Breakdown table of Agrolution pHLow products	Section 6 / page 102

Single bag solutions for many needs

Agrolution® Special

Agrolution Special improves the availability of nutrients through its formulations that prevent magnesium and calcium deficiencies.

It is made of the purest ingredients and all trace elements in the fertilizer are chelated. Agrolution Special prevents deposits and blockages forming in your irrigation system thanks to its high purity and solubility.

Fertigation

pH Control

Benefits of Agrolution Special

1	Agrolution Special is ideal for dealing with deficiencies
2	Provides all necessary nutrients
3	Easy-to-use all-in-one package of NPK plus trace elements
4	Pure ingredients
5	Dissolves completely

The Agrolution Special Range

Product Name	Analyses
Agrolution Special 316	13-5-28+2CaO+2.5MgO+TE
Agrolution Special 313	14-7-14+14CaO+TE
Agrolution Special 324	14-8-22+5CaO+2MgO+TE
Agrolution Special 212	23-10-23+TE
Agrolution Special 125	7-14-35+3.5MgO+TE
Agrolution Special 214	12-6-29+7CaO+TE

References	
Basics for water-soluble fertilizers	Section 5 / page 72
Fertigation application methods	Section 5 / page 80
Dilution Table	Section 5 / page 94
Breakdown table of Agrolution Special products	Section 6 / page 102

Solinure® GT

Effective and convenient!

Solinure GT products are available in different formulas and are ideal for greenhouse and tunnel applications.

Fertigation

They are made from pure, raw materials that provide complete nutrition for the crop. The Solinure GT formulations are low in urea and meet the plant's basic magnesium requirements. All the formulations contain trace elements that are 100% chelated to ensure outstanding plant uptake, even under difficult soil conditions. The Solinure GT products contain no chlorides and also contain minimum levels of urea.

Benefits of Solinure GT

1	Smart designs: a complete range with the right formulations for every crop's need
2	Special formulations: particularly useful for cool and dark winter growing conditions
3	Clean materials: low impurity levels in the ingredients
4	Chloride free
5	Optimal package of trace elements to meet plant's requirements

The Solinure GT Range

Product Name	Analyses
Solinure GT 1	10-5-39+2MgO+TE
Solinure GT 2	7-19-38+2MgO+TE
Solinure GT 3	12-5-35+2MgO+TE
Solinure GT 4	14-6-23+2MgO+TE
Solinure GT 5	20-20-20+TE
Solinure GT 6	15-15-15+TE
Solinure GT 7	18-11-11+2MgO+TE
Solinure GT 8	23-10-10+5.6MgO+TE
Solinure GT 9	11-35-11+2MgO+TE

References	
Basics for water-soluble fertilizers	Section 5 / page 72
Fertigation application methods	Section 5 / page 80
Dilution Table	Section 5 / page 94
Breakdown table of Solinure GT products	Section 6 / page 104

Value for money

Solinure® FX

Solinure FX is an innovative line of fertilizers designed specifically for open-field fertigation. This product contains chloride and urea.

Solinure FX does not have any trace elements in its formulation, which allows users to customize their fertilization plans by adding individual micro-nutrient fertilizers (Micromax or Agrolution Liquid).

Solinure FX contributes to the reduction of the pH of the solution due to its acidifying effect.

Solinure FX products are recognized for their great value for money.

Benefits of Solinure FX

1	A complete portfolio to fertigate open-field crops
2	Solinure FX reduces bicarbonates and has an acidifying effect. Nutrient availability to the plant will improve due to the optimum pH level
3	High purity

The Solinure FX Range

Product Name	Analyses
Solinure FX	10-10-40
Solinure FX 10	20-20-20
Solinure FX 11	18-8-29
Solinure FX 12	13-40-13
Solinure FX 13	16-32-16
Solinure FX 14	24-13-13
Solinure FX 15	17-8-27+3CaO
Solinure FX 16	16-8-25+4MgO
Solinure FX 17	15-5-30
Solinure FX 18	18-9-18

References	
ICL's fertigation technologies	Section 2 / page 10
Basics for water-soluble fertilizers	Section 5 / page 72
Fertigation application methods	Section 5 / page 80
Dilution Table	Section 5 / page 94
Breakdown table of Solinure FX products	Section 6 / page 104

Micromax®

Deficiencies under control

Micromax is a range of premium water-soluble fertilizers which are used in agriculture and horticulture to prevent and control deficiencies.

It is equally efficient when applied by means of fertigation or as a foliar spray. Micromax can be used in a wide variety of crops like cereals, vegetables, flowers, and fruit-trees. The Micromax products are easy to use and tank mixable.

Fertigation

X3 ACTIVE!

Benefits of Micromax

1	Prevents deficiencies thanks to a well-balanced composition of essential trace elements
2	X3 facilitates the absorption of the trace element into the plant´s leaves resulting in effective uptake
3	Promotes rapid absorption into the crop's leaves and roots, and enhances plant photosynthesis and other metabolic functions
4	Dissolves quickly and completely, making solution preparation easy and trouble-free
5	Micromax can be tank-mixed with a wide range of other fertilizers and crop-protection compounds

The Micromax Range

Product Name	Analyses (%)
Micromax WS Iron	6 Fe EDDHA
Micromax WS TE-Mix	0,7 B+0.5 Cu EDTA+5.4 Fe EDTA+2.4 Fe DTPA+2.60 Mn EDTA+0.32 Mo+1.3 Zn EDTA

References	
Basics for water-soluble fertilizers	Section 5 / page 72
Fertigation application methods	Section 5 / page 80
Breakdown table of Solinure FX products	Section 6 / page 104

Fully soluble, single source fertilizers

Select

Select fully water-soluble single source fertilizers are specially selected and produced for professionals in fertigation and foliar application.

Select fertilizers are derived from a single source of unrivaled quality and are higly soluble. They can be mixed with other straight fertilizer products or compound water-soluble fertigation fertilizers such as Agrolution pHLow, Agrolution Special, Solinure GT, and Solinure FX fertilizers.

Pure and clean fertilizers are needed to grow vegetables and cash crops safely. Some specific growth conditions call for fertilizer mixes that are adjusted to the specific conditions.

Benefits of Select

1	Broad, complementary portfolio of straight fertilizers
2	Highly-concentrated soluble fertilizers
3	High purity and extremely low in insoluble particles
4	Low salt index
5	Consistent quality
6	Do not contain heavy metals

The Select Range

Product Name	Analyses
Select MKP	0-52-34
Select MAP	12-61-0
PeKacid	0-60-20
Ferti-K	0-0-61
MagPhos	0-55-18+7MgO
Quick-Mg	0-0-15+13MgO
Mag S	0-0-0+16MgO+32SO3

References	
ICL's fertigation technologies	Section 2 / page 10
Basics for water-soluble fertilizers	Section 5 / page 72
Fertigation application methods	Section 5 / page 80
Dilution Table	Section 5 / page 94
Breakdown table of Select products	Section 6 / page 104

Select MKP

Foliar Feed

Fertigation

The most concentrated straight fertilizer

Select mono-potassium phosphate is the most concentrated straight fertilizer containing 86% pure nutrients (P and K). But it also has one of the lowest salt indices among fertilizers, which makes it ideal for use in hydroponics.

The product is white, sodium-free, chloride-free and has no impurities. Select MKP serves as an acidifying buffer agent in the stock solution tank. Its solubility is 300 g/litre H_2O (at 20 °C).

Benefits of Select MKP

1	100% water-soluble fertilizer
2	Use for fertigation as well as for foliar application
3	Low salt index
4	pH Buffer
5	Free of chloride and sodium
6	Does not contain heavy metals
7	Does not contain nitrogen

Select MAP

Foliar Feed

Fertigation

The ideal starter fertilizer

Select mono-ammonium phosphate (12-61-0) is ideal for use in the initial growth phase of all crops, immediately before and after seeding and planting/ transplanting.

Select MAP is a whitish crystalline powder, free of chloride and sodium. It is the ideal fertilizer for increasing the availability of soil-phosphorus, especially in calcareous soils. It is highly soluble at 370 g/litre H_2O (at 25 °C).

Benefits of Select MAP

1	100% water-soluble fertilizer
2	Use for fertigation as well as for foliar application
3	Free of chloride and sodium
4	Does not contain heavy metals
5	High solubility

PeKacid

PeKacid - Solid phosphoric acid

PeKacid ICL-patented, water-soluble PK fertilizer which is ideal for open-field and soilless crops. The product can be used in both hard-water conditions and calcareous soils.

PeKacid is a solid phosphoric acid in dry form, combining the advantages and efficiency of phosphoric acid with the ease and safety of a solid crystalline fertilizer. This white fertilizer is sodium-free and chloride-free, and extremely soluble at 670 g/litre H_2O (at 20 °C).
Due to its high acidity it helps keep drippers clean. Furthermore, its high acidity means it can be tank-mixed with calcium and magnesium carriers despite containing high levels of phosphorus. Select PeKacid reduces the pH of calcareous soils, which helps prevent nitrogen volatilization.

Benefits of PeKacid

1	High P and K analysis
2	100% water-soluble
3	High solubility (670 g/litre H_2O at 20 °C)
4	Strong acidifying power (240 grams of PeKacid will redact 1 mmol or 61 g/litre of HCO_3)
5	Free of chloride and sodium
6	In powder form, so safe to use
7	PeKacid can be mixed with Ca and Mg
8	Double effect of PeKacid; nutrient supply is available from the phosphate ions (H_2PO_4) and due to the acidifying effect PeKacid prevents the fixation of those ions in the fertigated area
9	Prevent clogging of the pipes and the drippers

Ferti-K

Ferti-K is the ideal product for chloride - tolerant crops. It is the richest potassium fertilizer though the least expensive one. Ferti-K is a nitrogen-free potassium carrier, which is an important trait for the bulking up of many vegetables and fruits. It improves fruit colour, sweetness and oil content. The product is white, contains negligible amounts of heavy metals and is highly soluble at 330 g/litre H_2O (at 20 °C).

MagPhos

MagPhos is a nitrogen-free, white crystalline, fully soluble, free-flowing magnesium fertigation fertilizer that also contains phosphorus and potassium. The uniqueness of MagPhos lies in the fact that this product has a high level of magnesium in combination with a high level of phosphorus and potassium while still being slightly acidic. MagPhos is chloride-free and sodium - free, with a high solubility level of 400 g/litre H_2O (at 20 °C).

QuicK-Mg

QuicK-Mg is uniquely rich in potassium and magnesium which is a blessing for crops which have high K and Mg requirements, like sugar beet, potato, oil palm, tea, sugar cane, banana, pineapple, and many vegetables. This requirement is ubiquitous on tropical soils, where magnesium deficiencies are very common. The beneficial effects of Quick-Mg are obvious shortly after application. QuicK-Mg has a low sodium content. It is recommended as a replacement for K-Mg fertilizers that add large amounts of sodium to the soil. This product is white and enjoys very high solubility of 680 g/litre H_2O (at 20 °C).

Mag S

The Mag S fertilizers is one of the richest in magnesium as well as being fully soluble and containing no chloride. It is made up exclusively of plant nutrients, and contains 16% magnesium in the form of MgO (equivalent to 9.6% Mg), and 32% sulphite (SO_3), equivalent to 12.8% S. Sulphur is essential for nitrogen-fixing nodules on legumes, and is necessary in the formation of chlorophyll. Sulphur is an important element in the plant's resistance to disease and in seed formation. Mag S has a considerable solubility of 337 g/litre of water at 20°C. It can be applied via the soil, by means of fertigation, and through foliar feeding.

4.3 Portfolio - ICL Specialty Fertilizers CONTROLLED RELEASE FERTILIZERS (CRF)

Less is More

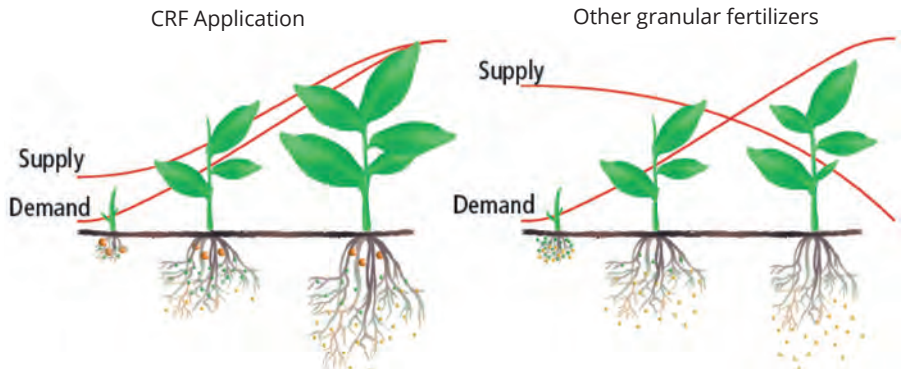
Controlled release fertilizers (CRF) play an important role in improving yield, reducing nutrient losses and simplifying fertilizer application. These products help to regulate the nutrient levels through the plant's growth cycle. Younger plants are not harmed or stressed by excess salt levels, while mature plants have enough nutrition to last until the end of the growth cycle. A simple once-only application of CRF delivers targeted nutrition that leads to healthy plants, uniform growth, and optimal yield. This translates into optimum results with minimum effort.

Agroblen®

Agromaster®

Agrocote®

With CRF, the supply of nutrients matches the demand of the plants, optimizing both growth and nutrient efficiency.



Fewer Applications
Reduced Leaching

Less fertilizer input

Lower Costs
Environmentally friendly

ICL's Controlled Release Fertilizers are powered by various coating technologies: E-Max, Poly-S and Resin.

On next pages you find a selection of typical CRF formulations. Contact your local ICL sales adviser for the complete portfolio.

Controlled Release Fertilizers are fertilizer granules covered with a semipermeable coating (a kind of membrane).
After application water penetrates through the semipermeable coating and starts to dissolve the nutrients present in the granule. The release of nutrients starts once they have been partially dissolved. A pump-like action is initiated due to differences in osmotic pressure. The plant is able to take up the released nutrients.

Advantages of Controlled Release Fertilizers

- Crop uniformity due to controlled nutrition
- Greater protection against early season 'salt stress'
- More or equal yield with less mineral input due to continual feeding
- Improved quality due to balanced nutrition
- Easier to use because of fewer applications
- High confidence that plant health is optimized
- Higher nutrient efficiency due to reduced losses
- Unique formulations for every application

Agroblen® 100% safety

Agroblen Controlled Release Fertilizers are designed to deliver precision crop nutrition that can be matched to your specific crop, stage of growth, climate and overall nutritional programme. Agroblen is a 100% coated product.

Agroblen products contain one or a combination of technologies, providing controlled release of the core nutrients for up to 18 months.

Benefits of Agroblen

1	Agroblen can be placed close to the root zone thanks to its 100% coated nutrients
2	Greater nutrient uptake efficiency due to synchronization of nutrient supply and plant uptake. Reduced volatilization and leaching
3	Easier to use, less work, and less soil compaction due to fewer field applications
4	Can also be applied on salt-sensitive crops thanks to low chloride and sodium formulas
5	Better for environment due to reduced leaching

References	
ICL's coating technologies	Section 2 / page 10
Basics for Controlled Release Fertilizers	Section 5 / page 76
CRF application methods	Section 5 / page 82
Breakdown table of Agroblen products	Section 6 / page 106

The Agroblen Range

Product Name	Analysis	Longevity*
Agroblen	18-5-10+4CaO+2MgO	2-3
	21-5-8+8MgO	2-3
	13-13-13+3MgO	3-4
	14-14-14	3-4
	18-5-11+4CaO+2MgO	3-4
	18-8-9+8MgO	3-4
	9-20-8+3MgO+0.1B	3-4
	15-8-11+4CaO+2MgO	5-6
	16-7-9+9MgO	5-6
	18-0-18+2MgO	5-6
	9-14-19+3MgO+0.5Fe	5-6
	11-21-9+6MgO	8-9
	11-8-17+18SO3+3MgO+Fe	8-9
	14-12-9+0.1B	8-9
	16-8-8+4CaO+2MgO	8-9
	17-9-8+4MgO	8-9
	24-0-7+2MgO+TE	8-9
	9-20-8+3MgO+0.1B	8-9
	15-9-9+3MgO	12-14
	9-13-18+3MgO+0.5Fe	12-14
	17-7-10+4MgO	14-16
	17-8-9+3MgO	16-18
	10-7-22+2MgO	16-18

** Longevity is measured at 21° C soil temperature*

Agromaster® Superior in performance but simple to use

Your fertilizer programme needs to be superior to enhance the crop's productivity and to ensure a secure and profitable business. For this reason, ICL created Agromaster - a Controlled Release Fertilizer combining quick, initial nutrient release with release of coated nutrients over a longer period.

Agromaster combines ICL's advanced coating technology with specially selected conventional granules. This powerful combination provides controlled release action and high-quality performance in one uniform product.

Benefits of Agromaster

1	Greater or equal yield with less mineral input due to continual release of nutrients
2	Easier to use, less work, and less soil compaction due to fewer field applications
3	Better for the environment due to reduced leaching
4	Enhanced crop uniformity thanks to controlled nutrition
5	Fast initial nutrient release, ideal for fast-growing crops

References	
ICL's coating technologies	Section 2 / page 10
Basics for Controlled Release Fertilizers	Section 5 / page 76
CRF Application methods	Section 5 / page 82
Breakdown table of Agromaster products	Section 6 / page 108

The Agromaster Range

Product Name	Analysis	Longevity*
Agromaster	11-48-0	1-2
	26-5-11+2MgO+TE	2-3
	18-8-16+2MgO	2-3
	15-25-10+3MgO	2-3
	21-10-15+1.7CaO+0.7MgO	2-3
	12-5-19+4MgO+17SO3	2-3
	19-5-20+4MgO+19.5SO3	2-3
	12-26-9+3MgO+9SO3	2-3
	16-10-16+2MgO+27SO3	2-3
	25-5-10+2MgO+21SO3	2-3
	15-24-10+2MgO+8SO3	2-3
	25-5-10+22SO3	2-3
	11-11-21+14SO3	2-3
	15-7-15+3MgO+34SO3	2-3
	16-10-16+2MgO+28SO3	2-3
	15-5-20+3MgO+20SO3	2-3
	11-11-21+3MgO+30SO3	2-3
	20-5-9+3MgO+31SO3	2-3
	19-5-19+3MgO+22SO3	2-3
	30-8-12	3-4
	17-0-8+3CaO+3MgO	4-5
	34-9-6	4-5
	15-8-16+5MgO	5-6
	20-10-10+4MgO	5-6
	24-0-6+7MgO+TE	5-6
Agromaster Mini	10-43-0	1-2
Agromaster Mini	24-5-11	2-3
Agromaster Start Mini	8-32-0+5MgO+9SO3+TE	1-2
Agromaster Start Mini	21-21-5+2MgO+15SO3	2-3

** Longevity is measured at 21° C soil temperature*

The pure technology product

Agrocote products are 100% coated products providing crops with a continuous release of nutrients.

Agrocote has been proven to be highly effective in supplying plants with the correct minerals while also reducing environmental damage.

Benefits of Agrocote

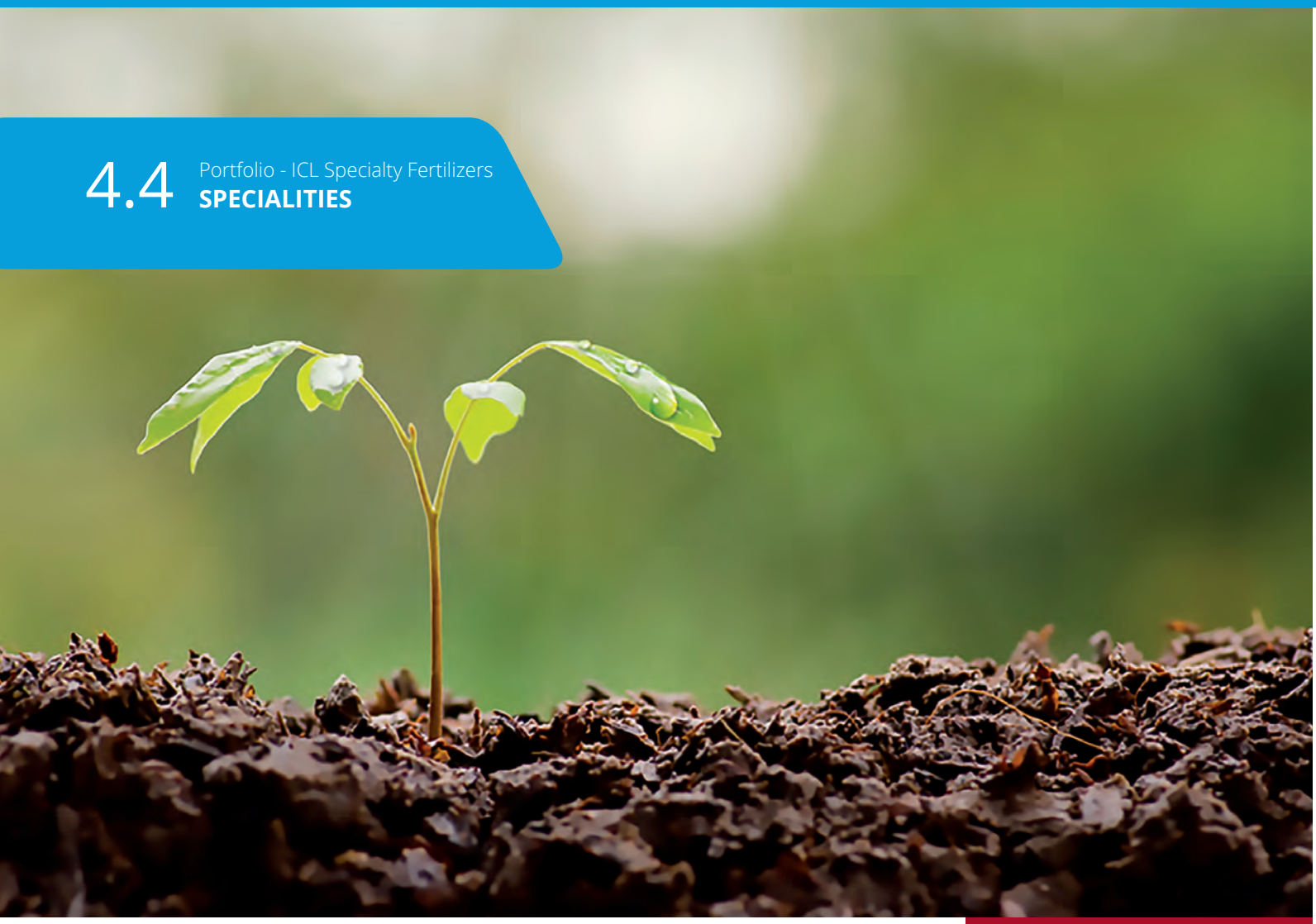
1	Highly durable coating that provides consistent, gradual nutrient release
2	Delivers the core nutrients over a period of one to seven months, and can therefore be applied on crops with short and medium growing periods
3	The durable coating ensures less breakage, and therefore longer residual feeding
4	Agrocote can be used for plant-hole and row application, but can also be applied using a broadcast spreader
5	Better for environment due to reduced leaching

References	
ICL's coating technologies	Section 2 / page 10
Basics for Controlled Release Fertilizers	Section 5 / page 76
CRF Application methods	Section 5 / page 82
Breakdown table of Agrocote products	Section 6 / page 108

The Agrocote Range

Product Name	Analysis	Longevity*
Agrocote Max	44-0-0	1-2
Agrocote Max	44-0-0	2-3
Agrocote Max	43-0-0	3-4
Agrocote Max	43-0-0	4-5
Agrocote Max	42-0-0	5-6
Agrocote S	39-0-0	2-3
Agrocote S	38-0-0	3-4
Agrocote S	37-0-0	5-6
Agrocote	11-47-0	1-2
Agrocote	0-0-56	3-4
Agrocote	0-0-43,5	3-4
Agrocote	0-0-55	5-6

** Longevity is measured at 21° C soil temperature*



Improving the efficiency of water and fertilizers

H2Flo®

Wetting agents work by creating an environment in the substrate that promotes uniform water movement and wetting.

Wetting and water conservation agents are used so that substrates, including soil, will hydrate uniformly when watered. This is very important when the medium is dry, as it often is with new plantings, or if it is not watered on a regular basis. Occasionally, with new plantings, the irrigation water will 'pond' or 'puddle' on top or channel down the insides of the bag or container without readily infiltrating the medium. Both of these situations will use excessive water, and this could be eliminated by using a wetting and water conservation agent. Wetting agents work by creating an environment in the substrate that promotes uniform water movement and wetting

More uniform distribution of water and dissolved nutrients allows plants to grow more vigorously and promotes optimum root growth. Improved air-to-water ratios, vital for optimum plant growth, are also established when a wetting agent is used. If the substrate or soil dries out between irrigation cycles, it will rewet rapidly and uniformly if a wetting and water conservation agent has been used. This can dramatically reduce the time it takes for water to infiltrate a medium, saving time and money with every watering.

A unique blend of surfactants

H2Flo is an unique blend of surfactants especially designed by ICL. It has been designed to move water and fertilizers quickly and efficiently through different substrates.

The advances made in surfactant technology mean that this product leads the way in water conservation and provides growers and farmers with the most advanced wetting agents available. H2Flo can be applied by drip, centre pivot, and overhead irrigation.

Benefits of H2Flo

1	Significantly reduces irrigation requirements
2	Can be used in conjunction with fertilizers
3	Works quickly with all substrates and soils
4	Penetrates and migrates, affecting entire root zone, not just the soil surface
5	Excellent spreading and penetration characteristics
6	Flexible application programmes and flexible water rates
7	High strength product, containing 88% surfactant for superior performance

H2Flo is one product in the ICL wetting agents and surfactants portfolio. Contact your local ICL sales adviser for the complete portfolio.

Granular Fertilizers

Combifert is the new ICL base fertilizer. CombiFert is a blend of high-quality, uniform NPK or PK granules with additional MgO and SO_3.

CombiFert is dust-free and can be applied in rows and using a broadcast spreader.

Combifert

The new ICL base fertilizer

Combifert

Combifert is a base fertilizer which can be used in vegetables, fruits, and extensive crops.

This blended product will give your crop a direct injection of nutrients and is ideal when high levels of N, P, or K are required during plants' growth. The nitrogen is in the form of ammonium and/or urea. The granules show a consistent uniformity.

Benefits of CombiFert

1	Uniform blend of required NPK granules
2	Dust free
3	Available in 25 kg or big bags of 600 Kg

The Combifert Range

Product Name	Analyses
Combifert	20-20-0+31SO3
	15-5-20+2MgO
	14-22-9
	21-5-10+3MgO

This is a selection of typical Combifert formulations. Contact your local ICL sales adviser for the complete portfolio.

Section 5
AgKnowledge Center

Content

Relevant crops and product recommendations

Cucumber

This crop performs better with warm temperatures and high light intensity. It develops best in sandy or well-structured organic soils. It can tolerate slightly acidic soil with pH values of >5.5 and it is sensitive to salinity.

Special attention must be devoted to N nutrition, since a deficiency in this element can result in misshapen fruit. Cucumber plants have high potassium and calcium requirements. While calcium is required at levels similar to those of nitrogen, about 80% more potassium is required.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	16-10-16+2MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

Water-soluble fertilizer

Product	NPK Analysis
*Agrolution pHLow	15-13-25+TE
**Agrolution Special	14-8-22+5CaO+2.5MgO
***Solinure	20-20-20+TE
Solinure	14-6-23+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Carrot

Carrot roots grow optimally at 15-18°C, while optimum shoot growth takes place at higher temperatures. Carrots need low temperatures to induce flowering.

This crop enjoys light, stone-free, well-drained, fertile organic soils. Rich sandy peaty soils are perfect, providing the best conditions for the carrot roots to penetrate deeply and to bulk up. The soil's pH value should be between 6.5 and 7.5 for ideal development. Carrots have high potassium and calcium requirements. They need three times and twice the amount of these nutrients respectively compared to nitrogen. Potassium promotes solid, sweet carrots, while excessive nitrogen causes branching and hairy, fibrous roots.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	11-11-21+3MgO	2-3
Agromaster	12-5-19+4MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power Total	20-20-20+TE
Agroleaf Power High K	15-10-31+TE

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Tomato

This is a warm-season vegetable crop, sensitive to frost and killed by freezing temperatures. Growth requires temperatures between 10 and 30 °C, and the plants will not develop properly if temperatures exceed 35°C.

Tomatoes prefer well-drained, medium-textured soils with a pH between 6.5 and 7.0. Tomato plants are fairly resistant to salinity, and cherry tomatoes actually develop a sweeter flavor when grown in soils with moderate salinity levels.

Tomatoes require large quantities of potassium and calcium. Potassium is consumed at a rate approx. 80% higher than nitrogen. Calcium deficiency inevitably produces blossom-end rot in the fruit.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	15-8-16+5MgO	5-6

Foliar applications

Product	NPK Analysis
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

Water soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	15-13-25+TE
**Agrolution Special	14-8-22+5CaO+2.5MgO
***Solinure	20-20-20+TE
Solinure	14-6-23+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Eggplant

This crop is well adapted to tropical regions, with an optimum growth temperature of 21–29 °C. It prefers little temperature variation.

It responds positively to well-drained soils with a medium texture and good aeration. Moderately deep soils are required, since this crop develops a strong taproot with a branched root system that does not spread widely. Aubergine requires large quantities of potassium, and it consumes potassium at a rate approx. 40% higher than nitrogen.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	16-10-16+2MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power High N	31-11-11+TE
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE

Water-soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	15-13-25+TE
**Agrolution Special	14-8-22+5CaO+2.5MgO
***Solinure	11-35-11+2MgO+TE
Solinure	14-6-23+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Sweet pepper

This crop performs well when night and day temperatures are between 16 and 18 °C and 20 and 25 °C respectively.

Sweet peppers grow best in sandy, loamy soils with good drainage and a pH between 6 and 6.8. Large quantities of nitrogen are required by the plant early in the growing season, with supplemental applications after the fruit setting stage.

This crop requires plenty of potassium and calcium. Potassium is consumed at a rate approx. 50% higher than nitrogen. Calcium deficiency inevitably produces blossom-end rot in the fruit.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	15-8-16+5MgO	5-6

Foliar applications

Product	NPK Analysis
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

Water soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	15-13-25+TE
**Agrolution Special	14-8-22+5CaO+2.5MgO
***Solinure	20-20-20+TE
Solinure	14-6-23+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Maize

Maize is a C4 annual crop, which means that it has high light-use efficiency.

The crop does well in any soil with adequate drainage, ensuring aerobic conditions. Soils must also have an adequate water-holding capacity, to provide adequate moisture throughout the growing season. Maize prefers soil with a pH of between 6.0 and 7.2. This crop requires large quantities of nitrogen, phosphorus, potassium, calcium, magnesium, iron, and manganese.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster Start Mini	21-21-5+2MgO	2-3
Agromaster	25-5-10+22SO3	2-3
Agrocote	44-0-0	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power Total	20-20-20+TE
Agroleaf Power High P	12-52-5+TE
Agroleaf Special Zn	14% Zinc EDTA

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Potato

Potatoes grow in a wide range of climates, but the optimum day temperature is between 15 and 20 °C.

Potatoes develop well in most soil types, but harvesting is more efficient in lighter soils. A good soil structure is required, since this crop prefers well-drained, aerated, and porous soils. The optimal soil pH is between 5 and 6. Slightly alkaline soils can adversely affect skin quality, and highly alkaline conditions can induce micronutrient deficiencies. Potato is considered a chloride-sensitive crop. Potatoes have an elevated nitrogen consumption level and even higher potassium requirements. Sufficient calcium applications enhance the storage life of tubers.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	16-10-16+2MgO	2-3
Agrocote	44-0-0	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Melon

This crop requires warm temperatures and high light intensity. Optimum growth temperatures are 18–20 °C at night and 24–30 °C during the day.

Melons prefer deep soils, rich in organic matter and with a pH around neutral. Melons tolerate slightly alkaline or salty soils and are fairly resistant to moderate drought, but normally require irrigation. All melon varieties have high potassium demands, requiring K at rates 2.4-times more than the nitrogen they require.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	12-5-19+4MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power High N	31-11-11+TE
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

Water-soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	15-13-25+TE
**Agrolution Special	14-8-22+5CaO+2.5MgO
***Solinure	10-10-40+2MgO+TE
Solinure	16-10-24+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Strawberry

This crop grows optimally when day and night temperatures are 18-22 °C and 10-13°C respectively.

It prefers light-textured soils, since it is very sensitive to poor soil drainage. Strawberries prefer slightly acidic soils with a pH of 5.5-6.5. Strawberry plants are extremely sensitive to salinity, chloride, and boron. Yields can be reduced by 33% for each EC unit increase in irrigation water salinity above the threshold of 0.7 dS/m. The plants absorb large quantities of potassium, twice as much as their nitrogen requirements. Special attention must be given to iron nutrition to avoid deficiencies.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agroblen	18-5-10+4Ca+2MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE

Water-soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	10-10-40+TE
**Agrolution Special	13-5-28+2CaO+2.5MgO
***Solinure	20-20-20+TE
Solinure	10-5-39+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Apple

Apples grow in temperate climates and their buds need cold periods in order to open. In winter, the tree can withstand temperatures as low as -10 °C, but once it blooms the flowers cannot tolerate frost.

The optimum soil pH for an apple orchard is between 6.0 and 6.5. If the soil and subsoil are naturally acidic, a light application of lime is recommended prior to planting. Good soil drainage is particularly important due to the essential aeration of the trees' roots. Apple trees require large quantities of potassium, since this is consumed at three times the rate of nitrogen. The best apple mineral nutrition regime includes fertigation with fully-soluble fertilizers and foliar feeding.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agroblen (at planting hole)	17-9-8+4MgO	8-9
Agromaster (for adult orchards)	12-5-19+4MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power Total	20-20-20+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power High K	15-10-31+TE

Water soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	10-10-40+TE
***Solinure	20-20-20+TE
***Solinure	12-5-35+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Banana

Banana is an herbaceous perennial crop. Fruit is produced in a series of vegetative sprouts before the plantation is renewed.

The optimum mean temperature is between 25 and 28 °C, and the minimum temperature for growth is around 15 °C. Banana trees grow successfully in many soil types, but they prefers free-draining, well-aerated, deep, fertile loams. The ideal soil pH is between 5.5 and 7.5. Good yields can be obtained in soils with a pH as low as 4.0, when exchangeable Al is low. A soil pH as high as 8.5 can be acceptable as long as potential trace element deficiencies are well controlled. Bananas require a lot of water (150 mm/ month), nitrogen, and potassium.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agroblen	17-9-8+4MgO	8-9

Foliar applications

Product	NPK Analysis
Agroleaf Power Total	20-20-20+TE
Agroleaf Power High K	15-10-31+TE

Water-soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	20-20-20+TE
**Agrolution Special	10-10-40+TE
***Solinure	20-20-20+TE
Solinure	10-5-39+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Citrus

Citrus fruits are in most cases a sub-tropical crop, which can grow in a wide range of climates (13-35 °C). Its roots require plenty of oxygen, and therefore permeable, medium to light-textured soils are preferred.

It can grow in soils with wide- ranging pH levels (5-8) but for optimum growth, salinity should be less than 1.5 dS/m. Citrus fruits require large quantities of potassium, >50% more than the nitrogen they require. High levels of phosphorus can impair micronutrient uptake, and high levels of potassium and calcium can induce magnesium deficiency.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	15-8-16+5MgO	5-6

Foliar applications

Product	NPK Analysis
Agroleaf Power High N	31-11-11+TE
Agroleaf Power Total	20-20-20+TE
Agroleaf Power High K	15-10-31+TE

Water soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	20-20-20+TE
**Agrolution Special	10-10-40+TE
***Solinure	20-20-20+TE
Solinure	10-5-39+2MgO+TE

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Grape

Grapes grow mainly in regions with a temperate or sub-tropical climate. Vines for table grapes generally produce higher-quality fruits in a warm and dry climate in locations with a long growing season.

Winters must be long enough to ensure a dormancy period, but there should be no late frosts posing a threat to the young buds. The most important soil characteristics for this crop are good internal drainage and adequate depth (at least 75 cm to 1 m) with no impeding layers (shallow bedrock, chemical or physical hardpans). It is advisable to avoid growing grapes in clay soils because drainage may be poor and salt may accumulate. Grapes are fairly tolerant of a wide pH range in the soil, but do particularly well in soil with a pH of 5.5 to 6.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster	19-5-20	2-3

Water-soluble fertilizers

Product	NPK Analysis
*Agrolution pHLow	10-10-40
***Solinure	20-20-20, 10-5-39

* *Ideal for use hard water*
** *Ideal for use soft water*
*** *Suitable for use all types of water*

Foliar applications

Product	NPK Analysis
Agroleaf Power Total	20-20-20+TE
Agroleaf Power High K	15-10-31+TE

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

AgKnowledge Center

Wheat

This crop can be subdivided into winter and spring wheat, with growing periods of 180-250 and 100-130 days respectively.

Winter wheat is sown in autumn and requires a cold period for adequate plant development. Medium-textured soils are preferred, while very light sands and peat soils should be avoided. The ideal soil pH is between 6 and 7 and the crop is moderately sensitive to salinity.

Wheat is highly sensitive to insufficient nitrogen and very responsive to nitrogen fertilization. Sulphur is an important limiting nutrient for productivity; about 10% relative to the amount of nitrogen is required.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster Start Mini	21-21-5+2MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power High N	31-11-11+TE
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Oilseed Rape

This crop can be subdivided into winter and spring varieties. The highest yields are obtained from the winter varieties, since they have the advantage of a longer growing season.

Winter varieties require a cold period in order to flower without delay the following year. Oilseed rape grows well in a wide range of soil types, but is more sensitive to soil compaction than cereals. Poor soil drainage and a pH of less than 5.5 can restrict growth. This crop is moderately tolerant of salinity. Oilseed has an intensive nutrient uptake rate, with a considerably higher uptake of NPK than cereal crops. From the start of the vegetative growth period in spring until flowering, oilseed has the highest daily potassium uptake rates: between 6 and 12 kg/ha/day K2O. This crop is sensitive to sulphur deficiency and special attention must be given to micronutrient fertilization.

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agromaster Start Mini	21-21-5+2MgO	2-3

Foliar applications

Product	NPK Analysis
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

Oil Palm

Oil palm is a tropical plant that grows best when mean daily temperatures are between 24 and 30 °C. More than 1300 hours of sunshine are required annually, in addition to well-distributed rainfall (irrigation) in order to ensure good yields.

The plant is sensitive to waterlogged soil, and it therefore prefers deep, permeable soils with an effective soil depth of >100 cm. It grows well in a wide range of soil pH levels (4.0-7.5), but ideal conditions are a pH of 5.0-6.0 and a salinity level of <2 dS/m. Nitrogen is particularly important for the rapid growth of young palm plants, and potassium is the main nutrient required by plants for productivity (approx. 50% more than N).

Recommended Products

Controlled release fertilizers

Product	NPK Analysis	Longevity
Agroblen (at planting hole)	17-8-9+3MgO	16-18
Agromaster (for inmature plantations)	15-8-16+5MgO	5-6

Foliar applications

Product	NPK Analysis
Agroleaf Power High P	12-52-5+TE
Agroleaf Power High K	15-10-31+TE
Agroleaf Power Calcium	11-5-19+9CaO+2.5MgO+TE
Agroleaf Power Magnesium	10-5-10+16MgO+32SO3+TE

The products presented in this sheet are for reference only.
For a personalized fertilization plan, please contact your closest sales representative.

References

Wichmann, W. (1992). **World Fertilizer Use Manua**l. IFA, France.

Landon J.R. (1991). Booker Tropical Soil Manual: a handbook for soil survey and agricultural land evaluation in the tropics and subtropics. Booker Agriculture International, London.

5.2 AgKnowledge Center
DIGITAL TOOLS - ANGELA WEB FOR PRECISION NUTRITION

Angela WEB2.0

Designed by experts at ICL, AngelaWeb 2.0 takes precision nutrition to the next level

Containing more than 900 individual recommendations, and tailored to specific fruit, vegetable, and ornamental crops, AngelaWeb 2.0 takes into account the crop type, variety, growing media, and growth phase to display the specific nutritional demands. By inputting information regarding the water source and how it is applied, and selecting the fertilizer products of choice, AngelaWeb 2.0 calculates a regime tailored to the exact needs of the crop.

Designed by the experts in precision nutrition for professionals

- Helps ensure the crop gets exactly what it requires
- Maximize your crop yields
- No more nutrient wastage

Giving your crops what they need

Many factors have an impact on plant quality and correct nutrition is among the most important. It not only has a key role to play in preventing plant diseases, it is also vital to healthy growth and, where appropriate, crop yield – and therefore ultimately its financial performance. Plants need the correct nutrients depending on the growth stage, the growing media, and its pH and Electrical Conductivity (EC). Water quality is another key parameter, and this can change at many nurseries over the course of the season when switching between different water sources. How it is applied to the crop also has an impact.

Saving you time and money and helping the environment

While some find manual crop nutrition calculation programs for different crop stages somewhat daunting, as well as time consuming, AngelaWeb 2.0 looks to save precious management time and decrease any errors in nutrient calculations. With the rising price of mineral raw materials and transport costs, fertilizer is a significant input cost. Apply too little and crop quality/ yield suffers, but apply too much and money is wasted, the environment suffers, and growers may fall foul of the new water framework directive.

How it works...

Web-based AngelaWeb 2.0 is straightforward to operate and apply. First the crop, including the variety, as well as the type of growing media and growth phase are selected. This information is then used to calculate and display the crop's specific nutritional requirements, and the option is also provided to create Controlled Release Fertilizer simulations. The next step involves inputting data from a detailed analysis of the water source and how it is to be applied. Next, by selecting from a list of 'straights' or water-soluble fertilizers, the software calculates a fertilizer regime. In support of this, it generates a graph showing the percentage of the plants' nutritional needs being fulfilled at each growth stage, as well as the EC level.

As the season progresses, if certain elements changes, such as the water source, the existing data can be retrieved and changes quickly made. The software, having made the necessary tweaks and adjustments to the fertilizer programme, produces new print outs and reports.

AngelaWeb 2.0 generates graphs showing the percentage of the plants nutritional needs being fulfilled at each growth

5.3 AgKnowledge Center
ICL´S RECOMMENDATIONS

Basics for Water-soluble fertilizers

What are the parameters for choosing the right formula, taking the different seasons into account? 1

The nitrogen source in a specific formula determines whether it can be used in different seasons.

Urea- $CO(NH_2)_2$: Most plants cannot absorb urea in its existing form. The urea is converted to ammonium in the soil, a process taking up to seven days if the soil temperature is low (below 10 °C). This is why formulas containing low levels of urea should be selected for wintertime. At higher soil temperatures, this process can take just a few hours, so urea-based formulations can be used in summer and autumn.

Ammonium - $N\text{-}NH_4$: Ammonium in the form of a cation will stick to the clay in the soil and will not leach out of the root zone. Use ammonium-based fertilizers in cold and rainy seasons. Do not use fertilizers containing high ammonium levels in conditions with extremely high temperatures due to the risk of NH3 forming in the plants.

Nitrate – $N\text{-}NO_3$: Nitrate in the form of an anion will not stick to the clay in the soil and will very quickly leach from the root zone. Do not use nitrate-based fertilizers if heavy rain is expected. Nitrate can be used in winter when the soil is cold.

What are the parameters for selecting a low pH formula? 2

The most important parameter when selecting low-pH fertilizers is the bicarbonate (HCO_3) in the irrigation solution. The use of low-pH fertilizers is recommended if the water contains 100 mg/l or more of HCO_3. It is important to check the bicarbonate reduction capacity of each formula and to choose the one that best matches the specific water that a grower is using.

How many kilograms of water-soluble fertilizers can be dissolved in a cubic metre of water? 3

We recommended working with a 10-15% solution in 1000 litres. It is possible to dissolve 100- 150 kg of fertilizer at the ideal temperature of 21 °C.

What are the advantages and the disadvantages of using different nitrogen sources? 4

ICL's water-soluble portfolio comprises different formulations containing different sources of nitrogen. For open-field fruit trees and vegetables, use WSFs containing urea. The highly-concentrated formulas have a lower EC, and the urea is rapid converted into NH4, which the plant can absorb. For crops growing in calcareous soils, we suggest applying NH_4-based fertilizers at an early stage due to the acidifying effect. By using these formulations, the availability of micronutrients can be enhanced. We suggest selecting formulations with a high $N\text{-}NO_3$ content in the reproductive stage for many crops in order to prevent competition with calcium. In soilless crops, we recommend selecting formulas that are based mainly on nitrate and that do not contain urea.

5 When is it possible to use potassium chloride-based products (e.g. Solinure FX)?

Water-soluble fertilizers containing potassium chloride (as K) can be used for both fruit trees and vegetables that are not sensitive to chloride, such as asparagus, tomatoes, cherry tomatoes, water melons, and melons.

6 Is it possible to only apply foliar fertilizers instead of soil fertilizers?

Foliar application cannot replace soil fertilization, but it is an excellent way to provide supplementary nutrients during critical periods.

7 Is it possible to blend two different water-soluble fertilizers to satisfy the plants' nutrition needs?

It is possible to blend two formulations. Always blend formulations from the same brand (for example two formulations from the Solinure GT portfolio) and do not blend formulations containing calcium with any other formulations.

8 How powerful are the acidifying effects of PeKacid?

1 kg of PeKacid can eliminate 240 g of HCO_3 and will supply 600 g of P_2O_5 and 200 g of K_2O.

9 How can PeKacid be used to open blocked drippers in a fertigation system?

To open blocked drippers using PeKacid, please follow the instructions below:

- Use 5 kg of PeKacid for every m^3 of water
- Calculate the flow rate per hour of your plot
- The time needed to apply the PeKacid is 15 minutes
- Calculate the water quantity that the plot get in 15 minutes

  Example:
  - Flow rate is 6 m^3 per hour
  - 1.5 m^3 (6 x 0.25) pass in 15 minutes
- 5 kg of PeKacid x 1.5 m^3=7.5 kg
- 7.5 kg of PeKacid is needed per 15 minutes to open the dripper in this example

10 How should the nutrients in the irrigation water and in the soil solution be monitored?

In order to monitor the irrigation solution, it is important to check the solution PH and EC. If the EC and PH are known as well as the formula applied, we can be sure that the plant will get the right amount of nutrition needed in each growing stage. When checking the soil solution, we recommend using soil solution extractors. In this way, more data can be gained on the nutrient levels near the active roots.


Solinure
FX 10-10-40
CE
434/03

Basics for Controlled Release Fertilizers

1 Is it possible to apply Agromaster using a broadcast spreader?

Agromaster is a blend of various coated and uncoated granules with specific sizes, shapes and weights. The differences between the granules influence the homogeneity of spreading. In vegetable and agricultural crops, Agromaster should be applied with a broadcast radius no larger than 18 m. In orchards – where the distances between rows are small – Agromaster can be applied using a broadcast spreader, but it is more efficient to apply it in rows.

2 Is it possible to apply Agroblen using a broadcast spreader?

Agroblen is a fully coated fertilizer, with homogeneous granulometry. It is therefore suitable for broadcast application. More importantly, as it is a 100%-coated fertilizer, it can be safely applied directly in the root zone. The most efficient way to apply Agroblen is in a row (at a depth of approx. 5 cm), close to the plants' roots. Another option is to apply Agroblen in the plant hole, just below the roots. However, in this case we recommend adding a thin layer of soil between the roots and the Controlled Release Fertilizers.

3 Is it possible to apply Agromaster by means of row application?

Agromaster can be applied in rows, but it is important not to apply it too close to the plant roots. Generally, 5-10 cm is a safe distance.

4 Is it possible to apply Agromaster in the plant hole?

Applying Agromaster in the plant hole is not recommended because it contains uncoated fertilizer and can thus burn the roots.

5 What is the best way to apply Agromaster Start Mini?

Agromaster Start Mini is a product designed mainly for agricultural row crops, in which the plants are not growing in beds. Most of the new air seeders and the new sowing devices contain an extra tank for the application of fertilizers in small quantities. This is the best way to distribute the small granules close to the seed and to maximize the nutrient effect.

Can I use CRF to fulfill the nutrient needs for the complete growing season? 6

This depends on the crop, the length of the crop cycle and the nutrient needs for the specific crop. For some crops a full rate of Agroblen can supply al needed nutrients but in many cases an extra topdress of fertilizers or fertigation is needed later in the season. E.g. when the crop needs high amounts of Potassium in the fruit bearing stage Agroblen will not supply enough and extra Potassium is needed.

What is the guideline for selection of the correct longevity? 7

It is important to check the soil temperature for the crop in your location. With a low soil temperature the release of nutrients will also be slower. Longevity of CRF is standard indicated on 21^{0}C soil temperature.

The length of the crop cycle also determines which longevity one should take (for example (short crop as lettuce vs long crop as corn).

ICL can help to determine the right longevity for your crop situation by simulating the expected release.

Is the release of P and K similar to the release of N? 8

If the N, P and K are coated at the same level you can expect a similar release pattern for all elements

At which temperature will the release of E-Max stop? 9

An E-Max coated fertilizer will typically completely stop releasing at 0°C.

As temperatures go down, the nutrient requirements of a plant will also decrease and the release of nutrients from a controlled release fertilizer will also decrease.

Does the use of coated urea result in lower N losses due to less volatilization compared to uncoated urea? 10

Urea that is broadcast onto the soil surface and not watered in will remain on the surface of the soil and will partially volatilize as NH3. This nitrogen loss is accelerated by high temperatures and wind. We can minimize this by using coated urea. When the coated nitrogen granules are incorporated in the soil the efficiency is even better.

5.4 AgKnowledge Center
APPLICATION METHODS

Foliar

Foliar fertilization means the spray application of nutrients to the plant leaves and stems and their absorption.

The observed effects of foliar fertilization include yield increases, better resistance to diseases and pests, improved drought tolerance, and enhanced crop quality The plant's response is dependent on species, fertilizer form, concentration, and frequency of application, as well as the stage of plant growth. Foliar applications are often timed to coincide with specific vegetative or fruiting stages of growth, and the fertilizer formula is adjusted accordingly. The amount of nutrients that plants can absorb via foliar application is limited, and generally much less than their total nutrient requirements.

Foliar application should therefore be used as a supplementary form of fertilization. It cannot replace basal fertilization.

Foliar fertilization should not be considered a substitute for a good soil-fertilization programme

Recommendations for efficient foliar application

- The best times for foliar spraying are early morning and late afternoon, when humidity is higher and the leaves are in a state of full turgor, with their cells full of water.
- Avoid foliar spraying during the warmer hours of the day; absorption at high temperatures is very poor and plants may be exposed to stress and suffer scorching.
- Dew formation after foliar application is an important aid to prolonged penetration, because of resolubilization of the fertilizers in the dew collected on the leaves.
- Spraying should take place under minimal wind conditions. This is especially important with finely atomized sprays, as they drift readily.
- Always spray when soil moisture is sufficient. Leaves will then be turgid and not susceptible to water stress. Consider irrigating on the day prior to spraying.
- Avoid foliar spraying just before rainfall or overhead irrigation in order to prevent the sprayed material being washed off.
- The optimum pH for a foliar spray is slightly acidic (5 ± 0.5).
- The use of a suitable wetting agent or surfactant decreases the surface tension of the spray droplets, which improves the distribution of the droplets, increases the wetted surface area, reduces burning/scorching of the leaves, and improves the uptake of the product. Always check the compatibility of the surfactant with the foliar fertilizer.
- Ensure that the fertilizer is fully soluble. No special equipment is required – foliar solutions can be applied with the aid of conventional spray equipment, e.g. a fan sprayer, a backpack sprayer, a sleeve sprayer, an aerial sprayer, etc.
- Select the appropriate sprayer volume and pressure for each crop. Using the correct volume of spray is essential to achieve full coverage of the plant canopy.

Fertigation

Fertigation is a method whereby the irrigation system distributes the fertilizers to the plants. Fertigation requires the use of water-soluble fertilizers (WSFs). To maximize results, a grower needs to work consistently with WSFs throughout the irrigation cycle.

Fertigation makes it possible to apply nutrients very precisely according to the nutritional demands of the crop. This has dual benefits: on one hand it can increase the potential yield of a crop by means of precise and timely nutrient provision, and on the other hand it means that the amount of nutrients applied can be reduced due to the reduction of losses through leaching or volatilization.

Before designing a fertigation programme, several parameters need to be taken into consideration:

1. **Soil: the soil analysis is a very important factor in determining the fertilization plan; knowledge of the nutrient levels in the soil means the grower can adjust the fertilization plan (adding or reducing nutrients). The pH of the soil makes it possible to predict which nutrients will be available in large or small quantities for the plant roots.**

2. **Water: the water analysis is important as it informs the grower which nutrients the water will supply. The common nutrients in water are: Ca, Mg, and Cl. Knowing the pH levels of the water allows a grower to choose the best formula for his/her conditions. For example, if the pH levels of the water and the bicarbonates are high, the grower will choose fertilizers with an acidifying effect to neutralize the bicarbonates and to reduce the pH of the water. (More information is available in the 'water quality' section).**

3. **Crop demand: knowing the nutrient demands of various crops during the growing cycle allows the grower to create an accurate fertilization plan that will result in an optimum yield.**

Principles for a good fertigation plan

1	Look at the crop's nutrient requirements during the growth cycle
2	Calculate the nutrients acquired from other sources (soil, water, organic fertilizer)
3	Take into consideration the amount of water the crop needs each day
4	Find the right formula for each growth stage
5	Calculate the total amount of water-soluble fertilizer that the crop needs for every growth stage (in kg per hectare per day)

ICL Specialty Fertilizers can provide technical assistance to calculate the optimum fertilization plan for your conditions. With AngelaWeb, ICL also provides an innovative tool to help you to design your own tailored fertilization plan. (See Section 5 AgKnowledge Center).

To successfully grow crops, many variables must be taken into account

Besides climatic conditions (temperature, humidity, light intensity, etc.), pH, and soil nutrient levels, another important factor is the quality of the water used for the irrigation of the crops. When we talk about the quality of irrigation water, we refer to nutrient levels, pH, salts (expressed as the conductivity: EC), and bicarbonates.

Why are these parameters important?

Nutrient levels

The plant receives macro and microelements via the irrigation water.

If the level of these nutrients and the requirements of the plant are known, we can determine the optimum fertilizer dosage and thus avoid overfertilization.

pH

pH is the degree of acidity of the soil or water, expressed on a logarithmic scale from 0 to 14, with 0 being highly acidic and 14 being highly alkaline. A neutral pH is expressed as 7.

Each crop needs a certain pH level for growth and harmonious development. The pH of the irrigation water is as important as the pH of the soil in which the plants will grow. The vast majority of crops grow and thrive in an environment with a pH between 5.5 and 6.5. It is important to understand that the pH directly influences the absorption of essential nutrients for the plant's growth and development. At high pH levels (above 7–7.5), the plant's absorption of phosphorus, iron, boron, copper, and zinc will start to be inhibited. This is how plants suffer deficiencies, even when fertilizers are used to provide the necessary nutrients. If these parameters are not known, it can be tempting to apply greater quantities of fertilizers and thus increase the salinity (EC) around the roots. This can also cause other imbalances, for instance by reducing the absorption of water and nutrients by the plant due to high osmotic pressure created around the roots by the increased presence of soluble salts.

Hardness class	Hardness- HCO_3 mg/l
Soft water	0-60
Moderately hard water	61-120
Hard water	121-180
Very hard	180+

Water hardness

Water hardness is a very important factor determining the quality of the water. Calcium (Ca) and magnesium (Mg) have a major role in the hardness of the water. To accurately check the pH of the water, the grower needs to perform an analysis of the water.

To achieve a pH of 6, the grower needs to leave around 40 mg/l of HCO_3 in the irrigation solution.

EC: salt concentration

EC is expressed numerically in mS/cm. In general, the EC in the solution used for the plant - the sum of the irrigation water EC and the water-soluble fertilizer EC - should not exceed 2–2.2. This value is recommended for soil-grown crops.

Water-soluble fertilizers are basically salts. When they are dissolved in water, the salt concentration increases. In general, these values are expressed in grams per litre and are specified on the packaging.

Controlled Release Fertilizers

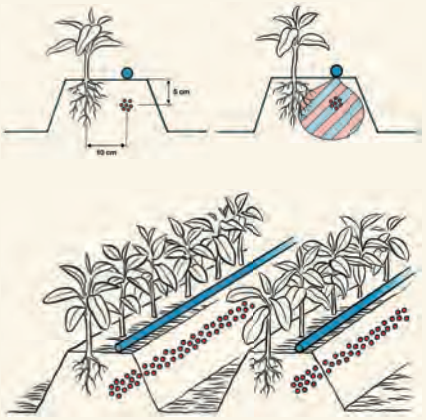
Conventional fertilizers supply nutrients immediately after application, usually at the start of the season when the nutrient requirements of the crop are low.

However, crops require nutrients throughout their active growing period. Controlled Release Fertilizers (CRFs) are designed to supply nutrients throughout the growing season. Agroblen and Agromaster reduce the need for side-dressings, which are often poorly timed and can potentially result in nutrient gaps. By supplying nutrients throughout the season, Controlled Release Fertilizers can increase fertilizer efficiency and yields, often affording farmers the option of reducing application rates without sacrificing productivity.

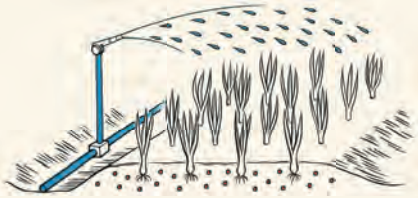
Application guidelines for Controlled Release Fertilizers

1. Agromaster and Agroblen products are developed for field application
2. These CRFs can be applied through broadcast application or they can be applied by row, spot, bed or even plant hole
3. When applied by row or spot, make sure the product is 10 cm from the plants (see figure)
4. The application method used is dependent on the crop and the product chosen (please contact your local ICL sales adviser for a customized recommendation)
5. Agroblen (100% coated NPK) can be recommended for plant-hole application; Agromaster cannot (as it contains uncoated fertilizer)
6. For the best results, CRF should be incorporated into the first 5 cm of the soil
7. Apply CRF before planting or 20-30 days after sowing
8. If there is a drip irrigation line, apply the CRF close to the drippers (see figure)
9. Thorough irrigation is recommended after application

Row application



Bed Application



Spot application

Plant hole application

- Do not use Agromaster in the planting hole
- Only use the 100% resin coated NPK products from the Agroblen range
- Before applying CRF in the plant hole, consult your local ICL advisor.

5.5 AgKnowledge Center MIXABILITY LISTS

Agroleaf® Power Total 20-20-20+TE

Agroleaf Power Total with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Acanto 250 SC	5 kg/300 l water + 1 l/300 l water	(+)	(+)	(+)	
Acrobat MZ 69 WG	5 kg/700 l water + 3 kg/700 l water	(+)	(+)	(+)	
Alert 375 SC	5 kg/300 l water + 1 l/300 l water	(+)	(+)	(+)	
Aliette 80 WG	5 kg/300 l water + 0,5%	(+)	(+)	(+)	
Altima 500 SC	5 kg/700 l water + 0,5 l/700 l water	(-)	(+)	(-)	
Amistar 250 SC	5 kg/700 l water + 0,8 l/700 l water	(+)	(+)	(+)	
Amistar Opti 480 SC	5 kg/700 l water + 2,5 l/700 l water	(+)	(+)	(+)	
Bravo 500 SC	5 kg/300 l water + 3 l/300 l water	(+)	(+)	(+)	
Capalo 337,5 SE	5 kg/300 l water + 2 l/300 l water	(+)	(+)	(+)	
Curzate M 72,5 WP	5 kg/700 l water + 2,3 kg/700 l water	(+)	(+)	(+)	
Decis 2,5 EC	5 kg/300 l water + 0,35 l/300 l water	(+)	(+)	(+)	
Delan 700 WG	5 kg/300 l water + 0,75 kg/300 l water	(+)	(+)	(+)	
Duett Ultra 497 SC	5 kg/300 l water + 0,6 l/300 l water	(+)	(+)	(+)	
Ekonom 72 WP	5 kg/700 l water + 2,5 kg/700 l water	(+)	(+)	(+)	
Envidor 240 EW	5 kg/500 l water + 0,4 l/500 l water	(+)	(+)	(+)	
Glean 75 WG	5 kg/300 l water + 0,025 kg/300 l water	(+)	(+)	(+)	
Gwarant 500 SC	5 kg/600 l water + 2 l/600 l water	(+)	(+)	(+)	
Helm-Cymi 72,5 WP	5 kg/700 l water + 3 kg/700 l water	(+)	(+)	(+)	
Huzar 05 WG	5 kg/300 l water + 0,2 kg/300 l water	(+ -)	(+)	(+ -)	
Infinito 687,5 SC	5 kg/300 l water + 0,3%	(+)	(+)	(+)	
Magus 200 SC	5 kg/500 l water + 0,9 l/500 l water	(+)	(+)	(+)	
Mavrik 240 EW	5 kg/300 l water + 0,2 l/300 l water	(+)	(+)	(+)	
Miedzian 50 WP	5 kg/700 l water + 3 kg/700 l water	(-)	(+)	(-)	
Milagro 040 SC	5 kg/300 l water + 1,5 l/300 l water	(+ -)	(+)	(+ -)	
Mildex 711,9 WG	5 kg/700 l water + 2,5 kg/700 l water	(+)	(+)	(+)	
Opera Max 147,5 SE	5 kg/300 l water + 2 l/300 l water	(+)	(+)	(+)	
Penncozeb 80 WP	5 kg/600 l water + 2 kg/600 l water	(+)	(+)	(+)	
Polyram 70 WG	5 kg/600 l water + 2 kg/600 l water	(+)	(+)	(+)	
Prosaro 250 EC	5 kg/300 l water + 1 l/300 l water	(+)	(+)	(+)	
Proteus 110 OD	5 kg/300 l water+ 0,6 l/300 l water	(+)	(+)	(+)	

(+) No extra precaution measures required

(+ -) It is possible to combine both products. Take necessary precaution (dissolution time / agitate)

(-) It is not possible to combine both products

	Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
	picoxystrobin (250 g)	fungicide	Du Pont International, Switzerland
	mancozeb (60%) + dimetomorf (9%)	fungicide	BASF SE, Germany
	carbendazim (250 g) + flusilazole (125 g)	fungicide	Du Pont International, Switzerland
	fosetyl aluminium (80%)	fungicide	Bayer Crop Science AG, Germany
	fluazinam (500 g)	fungicide	Syngenta Limited, Great Britain
	azoxystrobin (250 g)	fungicide	Syngenta Limited, Great Britain
	chlorotalonil (400 g) + azoxystrobin (80 g)	insecticide	Syngenta Limited, Great Britain
	chlorothalonil (500 g)	fungicide	Syngenta Limited, Great Britain
	fenpropimorph (200 g) + metrafenon (75 g) + epoxiconazole (62.5 g)	fungicide	BASF SE, Germany
	mancozeb (68%) + cymoksanil (4.5%)	fungicide	Du Pont de Nemours, France
	delthametrin (2.5 %)	insecticide	Bayer SAS, France
	dithianon (700 g)	fungicide	BASF Agro B.V., Switzerland
	thiophanate-methyl (310 g) + epoxiconazole (187 g)	fungicide	BASF SE, Germany
	mancozeb (64%) + metalaxyl (8%)	fungicide	Industrias Quimicas del Valles S.A, Spain
	spirodiclofen (240 g)	acaricide	Bayer Crop Science AG, Germany
	chlorsulphuron (75 %)	herbicide	Du Pont International, Switzerland
	chlorotalonil (500 g)	insecticide	Arysta LifeScience S.A.S. France, France
	mancozeb (68%) + cymoksanil (4.5%)	fungicide	Helm AG, Germany
	iodosulfuron-methyl-sodium (50 g)	herbicide	Bayer CropScience SA, France
	propamocarb (625 g) + fluopicolide (62.5 g)	fungicide	Bayer Crop Science AG, Germany
	fenazachin (200 g)	acaricide	Gowan Comercio International e Servicos, Portugal
	tau-fluvalinate (240 g)	insecticide	Makhteshim Agan Industries Ltd., Israel
	copper (as copper oxychloride) (50%)	fungicide	Zakłady Chemiczne Organika-Azot S.A., Poland
	nicosulfuron (40 g)	herbicide	ISK Biosciences Europe N.V., Belgium
	fosetyl aluminium (66.7%) + fenamidon (4.4%)	fungicide	Bayer SAS, France
	pyraclostrobin (85 g) + epoxiconazole (62.5 g)	fungicide	BASF SE, Germany
	mancozeb (80%)	fungicide	Australia
	metiram (70%)	fungicide	BASF SE, Germany
	priothioconazole (125 g) + tebuconazole (125 g)	fungicide	Bayer Crop Science AG, Germany
	thiacloprid (100 g) + delthametrin (10 g)	insecticide	Bayer Crop Science AG, Germany

The test results above are indicative and based on tests executed by an external party. Because the formulations of products may differ and application of specified products and combinations is beyond ICL's control, ICL can not be held responsible/liable for any damage resulting from the misapplication of the above. The result of the above tested combinations does not guarantee that the same active ingredient mixed with another foliar feed will give similar performance. If you do not have experience with foliar fertilizers and a plant protection products we recommend to always perform a test spray on a small scale.

To the fullest extent permitted by law, under no circumstances shall ICL or its Representatives be liable for any direct, indirect, incidental, special or consequential damages that result from use of or inability to use the mix of a foliar fertilizer and a plant protection product.

Please check the legal restrictions that apply to your country regarding the use of the products noted in the list.

Agroleaf® Power Total 20-20-20+TE

Agroleaf Power Total with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Revus 250 SC	5 kg/400 l water + 1,5 l/400 l water	(+)	(+)	(+)	
Revus 250 SC	5 kg/700 l water + 0,6 l/700 l water	(+ -)	(+)	(+ -)	
Ridomil Gold MZ	5 kg/600 l water + 2,5 kg/600 l water	(+)	(+)	(+)	
Rovral Aguaflo 500 SC	5 kg/600 l water + 1 l/600 l water	(+)	(+)	(+)	
Sarfun 500 SC	5 kg/300 l water + 0,4 l/300 l water	(+)	(+)	(+)	
Signum 33 WG	5 kg/600 l water + 0,25 kg/600 l water	(+)	(+)	(+)	
Switch 62,5 WG	5 kg/700 l water + 1 kg/700 l water	(-)	(+)	(-)	
Teldor 500 SC	5 kg/700 l water + 1,5 l/700 l water	(+)	(+)	(+)	
Tercel 16 WG	5 kg/500 l water + 2,5 kg/500 l water	(+)	(+)	(+)	
Tern 750 EC	5 kg/300 l water + 1 l/300 l water	(+ -)	(+)	(+ -)	
Thiovit Jet	5 kg/300 l water + 6 kg/300 l water	(+)	(+)	(+)	
Tilt Turbo 575 EC	5 kg/300 l water + 1 l/300 l water	(+)	(+)	(+)	
Topsin M 500 SC	5 kg/300 l water + 0,15%	(-)	(+)	(-)	
Trebon 30 EC	5 kg/300 l water + 0,3 l/300 l water	(+)	(+)	(+)	
Valbon 72 WG	5 kg/700 l water + 2 kg/700 l water	(+)	(+)	(+)	
Vista 228 SE	5 kg/300 l water + 1,8 l/300 l water	(+)	(+)	(+)	
Wirtuoz 520 EC	5 kg/300 l water +1,25 l/300 l water	(+)	(+)	(+)	
Zato 50 WG	5 kg/600 l water + 0,25 kg/600 l water	(+)	(+)	(+)	

Agroleaf® Power Calcium 11-5-19+9CaO+2.5MgO+TE

Agroleaf Power Total with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Acrobat MZ 69 WG	5 kg/700 l water+ 3 kg/700 l water	(-)	(+)	(-)	
Aliette 80 WG	5 kg/300 l water+ 0,5%	(+)	(+)	(+)	
Amistar 250 SC	5 kg/700 l water + 0,8 l/700 l water	(+)	(+)	(+)	
Amistar Opti 480 SC	5 kg/700 l water+ 2,5 l/700 l water	(+)	(+)	(+)	
Curzate M 72,5 WP	5 kg/700 l water + 2,3 kg/700 l water	(+)	(+)	(+)	
Gwarant 500 SC	5 kg/600 l water + 2 l/600 l water	(+)	(+)	(+)	
Helm-Cymi 72,5 WP	5 kg/700 l water+ 3 kg/700 l water	(-)	(+)	(-)	
Infinito 687,5 SC	5 kg/300 l water+ 0,3%	(+)	(+)	(+)	
Mildex 711,9 WG	5 kg/700 l water + 2,5 kg/700 l water	(+)	(+)	(+)	
Penncozeb 80 WP	5 kg/600 l water + 2 kg/600 l water	(-)	(+)	(-)	
Pomarsol Forte 80 WG	5 kg/500 l water + 3 kg/500 l water	(+)	(+)	(+)	
Ridomil Gold MZ Pepite 67,8 WG	5 kg/600 l water + 2,5 kg/600 l water	(+)	(+)	(+)	
Signum 33 WG	5 kg/600 l water + 1,5 kg/600 l water	(+)	(+)	(+)	
Tanos 50 WG	5 kg/700 l water + 0,5 kg/700 l water	(+)	(+)	(+)	
Topsin M 500 SC	5 kg/300 l water + 0,15%	(-)	(+)	(-)	
Valbon 72 WG	5 kg/700 l water+ 2 kg/700 l water	(+)	(+)	(+)	
Zato 50 WG	5 kg/700 l water + 0,25 kg/700 l water	(+)	(+)	(+)	

(+) No extra precaution measures required

(+ -) It is possible to combine both products. Take necessary precaution (dissolution time / agitate)

(-) It is not possible to combine both products

Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
mandipropamide (250 g)	fungicide	Syngenta Crop Protection AG, Switzerland
mandipropamid (250 g)	fungicide	Syngenta Crop Protection AG, Switzerland
mancozeb (64%) + metalaxyl-M (3.8%)	fungicide	Syngenta Crop Protection AG, Switzerland
iprodione (500 g)	fungicide	BASF SE, Germany
carbendazim (500 g)	fungicide	Organika Sarzyna, Poland
boscalid (26.7 %) + pyraclostrobin (6.7 %)	fungicide	BASF SE, Germany
cyprodynil + fludioxonil	fungicide	Syngenta Crop Protection AG, Switzerland
fenhexamid (500 g)	fungicide	Bayer Crop Science AG, Germany
dithianon (12 %) + pyraclostrobin (4 %)	fungicide	BASF SE, Germany
fenpropidin (750 g)	fungicide	Syngenta Crop Protection AG, Switzerland
sulphur (80 %)	fungicide	Syngenta Limited, Great Britain
fenpropidin (450 g) + propiconazole (125 g)	fungicide	Syngenta Crop Protection AG, Switzerland
thiofanaat-methyl (500 g)	fungicide	Bayer Crop Science AG, Germany
etofenprox (300 g)	insecticide	Mitsui Chemicals Agro Inc., Japan
mancozeb (70%) + benthiovalicarb (1.75%)	fungicide	Arysta LifeScience S.A.S. France, France
prochloraz (174 g) + fluquinconazole (54 g)	fungicide	BASF Agro B.V., Switzerland
prochloraz (320 g) + tebuconazole (160 g) + proquinazid (40 g)	fungicide	Du Pont International, Switzerland
trifloxystrobin (50 %)	fungicide	Bayer Crop Science AG, Germany

Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
mancozeb (60%) + dimetomorf (9%)	fungicide	Dow AgroSciences LLC, USA
fosetyl aluminium (80%)	fungicide	Bayer CropScience AG, Germany
azoxystrobin (250 g)	insecticide	Syngenta Limited, Great Britain
chlorotalonil (400 g) + azoxystrobin (80 g)	fungicide	Syngenta Limited, Great Britain
mancozeb (68%) + cymoksanil (4.5%)	fungicide	Du Pont de Nemours, France
chlorotalonil (500 g)	fungicide	Arysta LifeScience S.A.S. France, France
mancozeb (68%) + cymoksanil (4,5%)	fungicide	Helm AG, Germany
propamocarb (625 g) + fluopicolide (62.5 g)	fungicide	Bayer CropScience AG, Germany
fosetyl aluminium (66.7%) + fenamidon (4.4%)	fungicide	Bayer SAS, France
mancozeb (80%)	fungicide	Cerexagri / UPL, France
tiuram (80%)	fungicide	Taminco BVBA, Belgium
mancozeb (64%) + metalaxyl-M (3.8%)	fungicide	Syngenta Crop Protection AG, Switzerland
boskalid (26.7%) + pyraclostrobin (6.7%)	fungicide	BASF SE, Germany
cymoksanil (25%) + famoksat (25%)	fungicide	Du Pont de Nemours, France
thiofanaat-methyl (500 g)	fungicide	Nippon Soda Company Ltd, Japan
mancozeb (70%) + benthiovalicarb (1.75%)	fungicide	CerexAgri BV, the Netherlands
trifloxystrobin (50%)	insecticide	Bayer CropScience AG, Germany

The test results above are indicative and based on tests executed by an external party. Because the formulations of products may differ and application of specified products and combinations is beyond ICL's control, ICL can not be held responsible/liable for any damage resulting from the misapplication of the above. The result of the above tested combinations does not guarantee that the same active ingredient mixed with another foliar feed will give similar performance. If you do not have experience with foliar fertilizers and a plant protection products we recommend to always perform a test spray on a small scale.

To the fullest extent permitted by law, under no circumstances shall ICL or its Representatives be liable for any direct, indirect, incidental, special or consequential damages that result from use of or inability to use the mix of a foliar fertilizer and a plant protection product.

Please check the legal restrictions that apply to your country regarding the use of the products noted in the list.

Agroleaf® Power Magnesium 10-5-10+16MgO+32SO_3+TE

Agroleaf Power Magnesium with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Caramba 60 SL	5 kg/300 l water + 1,25 l/300 l water	(+)	(+)	(+)	
Dursban 480 EC	5 kg/300 l water + 0,6 l/300 l water	(+)	(+)	(+)	
Mavrik 240 EW	5 kg/300 l water + 0,2 l/300 l water	(+)	(+)	(+)	
Proteus 110 OD	5 kg/300 l water + 0,6 l/300 l water	(+)	(+)	(+)	
Rovral Flo 255 SC	5 kg/300 l water + 3 l/300 l water	(+)	(+)	(+)	
Sarfun 500 SC	5 kg/300 l water + 0,4 l/300 l water	(+)	(+)	(+)	
Toprex 375 SC	5 kg/300 l water + 0,5 l/300 l water	(+)	(+)	(+)	
Yamato 303 SE	5 kg/300 l water + 1,4 l/300 l water	(+)	(+)	(+)	

Agroleaf® Power High P 12-52-5+TE

Agroleaf Power High P with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Mavrik 240 EW	5 kg/300 l water + 0,2 l/300 l water	(+)	(+)	(+)	
Sarfun 500 SC	5 kg/300 l water + 0,4 l/300 l water	(+)	(+)	(+)	
Switch 62,5 WG	5 kg/300 l water 0,45 kg/300 l water	(+)	(+)	(+)	
Teldor 500 SC	5 kg/700 l water 0,45 l/700 l water	(+)	(+)	(+)	
Toprex 375 SC	5 kg/300 l water + 0,5 l/300 l water	(+)	(+)	(+)	

Agroleaf® Power High K 15-10-31+TE

Agroleaf Power High K with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Proteus 110 OD	5 kg/300 l water + 0,6 l/300 l water	(+)	(+)	(+)	
Sarfun 500 SC	5 kg/300 l water + 0,4 l/300 l water	(+)	(+)	(+)	
Toprex 375 SC	5 kg/300 l water + 0, 5 l/300 l water	(+)	(+)	(+)	
Vertimec 018 EC	5 kg/300 l water 0,15 l/300 l water	(+)	(+)	(+)	

(+) No extra precaution measures required

(+ -) It is possible to combine both products. Take necessary precaution (dissolution time / agitate)

(-) It is not possible to combine both products

	Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
	metconazole (60 g)	fungicide	BASF Agro B.V., Switzerland
	chlorpyrifos (480 g)	insecticide	Dow AgroScience, Poland
	tau-fluvalinate (240 g)	insecticide	Makhteshim Agan Industries Ltd., Israel
	thiacloprid (100 g) + delthametrin (10 g)	insecticide	Bayer Crop Science AG, Germany
	irpodione (255 g)	fungicide	BASF Agro B.V., Switzerland
	carbendazim (500 g)	fungicide	Organika Sarzyna, Poland
	difenoconazole (250 g) + paclobutrazol (125 g)	fungicide, grow regulator	Syngenta Crop Protection AG, Switzerland
	thiophanate-methyl (233 g) + tetraconazole (70 g)	fungicide	Summit Agro Europe Ltd., Great Britain

	Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
	tau-fluvalinate (240 g)	insecticide	Makhteshim Agan Industries Ltd., Israel
	carbendazim (500 g)	fungicide	Organika Sarzyna, Poland
	cyprodinil (375 g) + fludioxonil (250 g)	fungicide	Syngenta Crop Protection AG, Switzerland
	fenhexamid (500 g)	fungicide	Bayer Crop Science AG, Germany
	difenoconazole (250 g) + paclobutrazol (125 g)	fungicide, grow regulator	Syngenta Crop Protection AG, Switzerland

	Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
	thiacloprid (100 g) + delthametrin (10 g)	insecticide	Bayer Crop Science AG, Germany
	carbendazim (500 g)	fungicide	Organika Sarzyna, Poland
	difenoconazole (250 g) + paclobutrazol (125 g)	fungicide, grow regulator	Syngenta Crop Protection AG, Switzerland
	abamectin (18 g)	insecticide	Syngenta Crop Protection AG, Switzerland

Nutrivant® Fruit sugar booster

Nutrivant Fruit Sugar booster with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Antracol 70 WG	5 kg/500 l water + 2,25 kg/500 l water	(+)	(+)	(+)	
Champion 50 WP	5 kg/500 l water + 0,75 kg/500 l water	(-)	(+)	(-)	
Delan 70 WG	5 kg/300 l water + 0,75 kg/300 l water	(+)	(+)	(+)	
Discus 500 WG	5 kg/300 l water + 0,72 kg/300 l water	(+)	(+)	(+)	
Dithane Neo Tec 75 WG	5 kg/500 l water + 4,5 kg/500 l water	(+ -)	(+)	(+ -)	
Folpan 80 WG	5 kg/500 l water + 3 kg/500 l water	(-)	(+)	(-)	
Funguran OH 50 WP	5 kg/700 l water + 0,9 kg/700 l water	(-)	(+)	(-)	
Indofil 80 WP	5 kg/500 l water + 3 kg/500 l water	(+)	(+)	(+)	
Kaptan suspension 50 WP	5 kg/500 l water + 3 kg/500 l water	(+)	(+)	(+)	
Merpan 80 WG	5 kg/500 l water + 1,9 kg/500 l water	(+ -)	(+)	(+ -)	
Miedzian 50 WP (Copper)	5 kg/500 l water + 3 kg/500 l water	(-)	(+)	(-)	
Mythos 300 SC	5 kg/500 l water + 1,5 l/500 l water	(+)	(+)	(+)	
Nimrod 250 EC	5 kg/500 l water + 1,5 l/500 l water	(+)	(+)	(+)	
Penncozeb 80 WP	5 kg/500 l water + 2 kg/500 l water	(+)	(+)	(+)	
Polyram 70 WG	5 kg/500 l water + 4,5 kg/500 l water	(+)	(+)	(+)	
Pomarsol Forte 80 WG	5 kg/500 l water + 3 kg/500 l water	(+)	(+)	(+)	
Score 250 EC	5 kg/500 l water + 0,2 l/500 l water	(+)	(+)	(+)	
Sparta 250 EW	5 kg/500 l water + 0,5 l/500 l water	(+)	(+)	(+)	
Syllit 65 WP	5 kg/750 l water + 2,25 kg/750 l water	(+)	(+)	(+)	
Teldor 500 SC	5 kg/500 l water + 1,5 l/500 l water	(+)	(+)	(+)	
Tercel 16 WG	5 kg/500 l water + 2,5 kg/500 l water	(+ -)	(+)	(+ -)	
Topsin M 500 SC	5 kg/500 l water + 1,5 l/500 l water	(+)	(+)	(+)	
Vision 250 SC	5 kg/500 l water + 1,5 l/500 l water	(+)	(+)	(+)	
Zato 50 WG	5 kg/500 l water + 0,15 kg/500 l water	(+ -)	(+)	(+ -)	

Nutrivant® Oil Crops quick start

Nutrivant Oil Crops quick start with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Alert Solo 250 EW	5 kg/200 l water + 0,4 l/200 l water	(+)	(+)	(+)	
Brasifun 250 EC	5 kg/200 l water + 0,75 l/200 l water	(+)	(+)	(+)	
Caramba 60 SL	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Caryx 240 SL	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Pictor 400 SC	5 kg/200 l water + 0,5 l/200 l water	(+)	(+)	(+)	
Tilmor 240 EC	5 kg/200 l water + 0,75 l/200 l water	(+)	(+)	(+)	
Toledo 250 EW	5 kg/200 l water + 0,75 l/200 l water	(+)	(+)	(+)	
Toprex 375 SC	5 kg/200 l water + 0,75 l/200 l water	(+)	(+)	(+)	
Topsin M 500 SC	5 kg/200 l water + 1,4 l/200 l water	(+)	(+)	(+)	
Traper 250 EC	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	

(+) No extra precaution measures required

(+ -) It is possible to combine both products. Take necessary precaution (dissolution time / agitate)

(-) It is not possible to combine both products

	Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
	propineb (70%)	fungicide	Bayer CropScience AG, Germany
	copper (50%)	fungicide	Nufarm GmbH and Co. KG, Austria
	ditianon (700 g)	insecticide	BASF Agro B.V., Switzerland
	kresoxim-methyl (500 g)	fungicide	BASF SE, Germany
	mancozeb (75%)	fungicide	Dow AgroSciences, Poland
	folpet (80%)	fungicide	Makhteshim-Agan - Industries Ltd., Israel
	copper hydroxide (77%)	fungicide	Spiess - Urania Chemicals GmbH, Germany
	mancozeb (80%)	fungicide	Indofil Chemical Co., India
	kaptan (50%)	fungicide	Z. Ch. Organika-Azot S.A., Poland
	kaptan (80%)	fungicide	Makhteshim-Agan - Industries Ltd., Israel
	copper (as copper oxychloride) (50%)	fungicide	Zakłady Chemiczne Organika-Azot S.A., Poland
	pirymetanil (300 g)	fungicide	BASF Agro B.V., Switzerland
	bupirymat (250 g)	fungicide	Makhteshim Agan Group, Israel
	mancozeb (80%)	fungicide	Cerexagri / UPL, France
	metiram (70%)	fungicide	BASF SE, Germany
	tiuram (80%)	fungicide	Taminco BVBA, Belgium
	difenokonazol (250 g)	fungicide	Syngenta Crop Protection AG, Switzerland
	tebuconazole (250 g)	fungicide	Cheminova A/S, Denmark
	dodyna (65%)	fungicide	Agriphar SA, Belgium
	fenheksamid (500 g)	fungicide	Bayer CropScience AG, Germany
	ditianon (12%) + pyraclostrobin (4%)	fungicide	BASF SE, Germany
	thiofanaat-methyl (500 g)	fungicide	Nippon Soda Company Ltd, Japan
	pirymetanil (200 g) + fluchinkonazol (50 g)	fungicide	BASF Agro B.V., Switzerland
	trifloxystrobin (50%)	fungicide	Bayer CropScience AG, Germany

	Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
	flusilazol (250 g)	fungicide	Du Pont International Operations Sarl, Switzerland
	tebuconazole (250 g)	fungicide	Sharda Polska Sp. z o.o., Poland
	metconazole (60 g)	fungicide	BASF Agro B.V., Switzerland
	mepiquat chloride (210 g) + metconazole (30 g)	fungicide	BASF SE, Germany
	boskalid (200 g) + dimoksystrobina (200 g)	fungicide	BASF SE, Germany
	tebuconazole (160 g) + prothioconazole (80 g))	fungicide	Bayer CropScience AG, Germany
	tebuconazole (250 g)	insecticide	Rotam Agrochemical Co. Ltd., China
	difenokonazol (250 g) + paklobutrazol (125 g)	fungicide	Syngenta Crop Protection AG, Switzerland
	thiofanaat-methyl (500 g)	fungicide	Nippon Soda Company Ltd, Japan
	tebuconazole (125 g) + prothioconazole (125 g)	fungicide	Bayer CropScience AG, Germany

The test results above are indicative and based on tests executed by an external party. Because the formulations of products may differ and application of specified products and combinations is beyond ICL's control, ICL can not be held responsible/liable for any damage resulting from the misapplication of the above. The result of the above tested combinations does not guarantee that the same active ingredient mixed with another foliar feed will give similar performance. If you do not have experience with foliar fertilizers and a plant protection products we recommend to always perform a test spray on a small scale.

To the fullest extent permitted by law, under no circumstances shall ICL or its Representatives be liable for any direct, indirect, incidental, special or consequential damages that result from use of or inability to use the mix of a foliar fertilizer and a plant protection product.

Please check the legal restrictions that apply to your country regarding the use of the products noted in the list.

Nutrivant® Sugar beet quick start

Nutrivant Sugar beet quick start with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Alert Solo 250 EW	5 kg/200 l water + 0,5 l/200 l water	(+)	(+)	(+)	
Antracol 70 WG	5 kg/200 l water + 2,5 kg/200 l water	(+)	(+)	(+)	
Dithane Neo Tec 75 WG	5 kg/200 l water + 3 kg/200 l water	(-)	(+)	(-)	
Duett Ultra 497 SC	5 kg/200 l water + 0,6 l/200 l water	(+)	(+)	(+)	
Eminent 125 SL	5 kg/200 l water + 0,8 l/200 l water	(+)	(+)	(+)	
Tango Star 334 SE	5 kg/200 l water + 1 l/200 l water	(+)	(+ -)	(+ -)	
Tebu 250 EW	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Topsin M 500 SC	5 kg/200 l water + 1,2 l/200 l water	(+ -)	(+)	(+ -)	
Yamato 303 SE	5 kg/200 l water + 1,5 l/200 l water	(+)	(+)	(+)	

Nutrivant® Cereal grain quality

Nutrivant Cereal grain quality with	Tested dose per hectare	Results of chemical test	Results phytotoxicity test	Overall score	
Alert Solo 250 EW	5 kg/200 l water + 0,8 l/200 l water	(+)	(+)	(+)	
Amistar 250 SC	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Artea 330 EC	5 kg/200 l water + 0,5 l/200 l water	(+)	(+)	(+)	
Bumper 250 EC	5 kg/200 l water + 0,5 l/200 l water	(+)	(+)	(+)	
Capalo 337,5 SE	5 kg/200 l water + 2 l/200 l water	(+ -)	(+)	(+ -)	
Domnic 250 EW	5 kg/200 l water + 1,25 l/200 l water	(+)	(+)	(+)	
Duett Ultra 497 SC	5 kg/200 l water + 0,6 l/200 l water	(+)	(+)	(+)	
Eminent 125 SL	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Fandango 200 EC	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Input 460 EC	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Mirage 450 EC	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Opera Max 147,5 SE	5 kg/200 l water + 2 l/200 l water	(+)	(+)	(+)	
Orius 250 EW	5 kg/200 l water + 1,25 l/200 l water	(+)	(+)	(+)	
Soligor 425 EC	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Soprano 125 SC	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Swing Top 183 SC	5 kg/200 l water + 1,5 l/200 l water	(+)	(+)	(+)	
Tango Star 334 SE	5 kg/200 l water + 1 l/200 l water	(+ -)	(+)	(+ -)	
Tebu 250 EW	5 kg/200 l water + 1 l/200 l water	(+)	(+)	(+)	
Topsin M 500 SC	5 kg/200 l water + 1,4 l/200 l water	(+)	(+)	(+)	
Unix 75 WG	5 kg/200 l water + 1 kg/200 l water	(+ -)	(+)	(+ -)	
Wirtuoz 520 EC	5 kg/200 l water + 1,25 l/200 l water	(+)	(+)	(+)	
Yamato 303 SE	5 kg/200 l water + 1,75 l/200 l water	(+)	(+)	(+)	

(+) No extra precaution measures required

(+ -) It is possible to combine both products. Take necessary precaution (dissolution time / agitate)

(-) It is not possible to combine both products

Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
flusilazol (250 g)	fungicide	Du Pont International Operations Sarl, Switzerland
propineb (70%)	fungicide	Bayer CropScience AG, Germany
mancozeb (75%)	fungicide	Dow AgroSciences Polska Sp. z o. o., Poland
thiofanaat-methyl (310 g) + epoxy conazol (187 g)	fungicide	BASF SE, Germany
tetraconazol (125 g)	insecticide	Isagro S.p.A., Italy
fenpropimorf (250 g) + epoxy conazol (84 g)	fungicide	BASF AG, Germany
tetraconazol (250 g)	fungicide	Helm AG, Germany
thiofanaat-methyl (500 g)	fungicide	Nippon Soda Company Ltd, Japan
thiofanaat-methyl (233 g) + tetraconazol (70 g)	fungicide	Summit Agro Europe Ltd., Great Britain

Active ingredient of test product (content in liter or kg of the commercial product)	Type of Plant Protection	Producer
flusilazol (250 g)	insecticide	Du Pont International Operations Sarl, Switzerland
azoxystrobin (250 g)	fungicide	Syngenta Limited, Great Britain
propikonazol (250 g) + cyproconazole (80 g)	fungicide	Syngenta Crop Protection AG, Switzerland
propiconazole (250 g)	fungicide	Makhteshim Chemical Works Ltd, Israel
fenpropimorf (200 g) + metrafenon (75 g) + epoxy conazol (62,5 g)	fungicide	BASF SE, Germany
tebuconazole (250 g)	fungicide	Sharda Europe, Belgium
fenpropimorf (250 g) + epoxy conazol (84 g)	fungicide	BASF SE, Germany
tetraconazol (125 g)	fungicide	Isagro S.p.A., Italy
prothioconazole (100 g) + fluoksastrobina (100 g)	fungicide	Bayer SAS, France
spiroksamina (300 g) + prothioconazole (160 g)	fungicide	Bayer CropScience AG, Germany
prochloraz (450 g)	fungicide	Makhteshim Chemical Works Ltd, Israel
pyraclostrobin (85 g) + epoxy conazol (62,5 g)	fungicide	BASF SE, Germany
tebuconazole (250 g)	fungicide	Makhteshim-Agan - Industries, Israel
spiroksamina (224 g) + tebuconazole (148 g) + prothioconazole (53 g)	fungicide	Bayer CropScience AG, Germany
epoxy conazol (125 g)	fungicide	Makhteshim Agan Group, Israel
dimoxystrobina (133 g) + poksykonazol (50 g)	fungicide	BASF SE, Germany
fenpropimorf (250 g) + epoxy conazol (84 g)	fungicide	BASF AG, Germany
tebuconazole (250 g)	fungicide	Helm AG, Germany
thiofanaat-methyl (500 g)	fungicide	Nippon Soda Company Ltd , Japan
cyprodynil (75%)	fungicide	Syngenta Crop Protection AG,Switzerland
prochloraz (320 g) + tebuconazole (160 g) + proquinazid (40 g)	fungicide	Du Pont International Operations Sarl, Switzerland
thiofanaat-methyl (233 g) + tetraconazol (70 g)	fungicide	Summit Agro Europe Ltd., Great Britain

The test results above are indicative and based on tests executed by an external party. Because the formulations of products may differ and application of specified products and combinations is beyond ICL's control, ICL can not be held responsible/liable for any damage resulting from the misapplication of the above. The result of the above tested combinations does not guarantee that the same active ingredient mixed with another foliar feed will give similar performance. If you do not have experience with foliar fertilizers and a plant protection products we recommend to always perform a test spray on a small scale.

To the fullest extent permitted by law, under no circumstances shall ICL or its Representatives be liable for any direct, indirect, incidental, special or consequential damages that result from use of or inability to use the mix of a foliar fertilizer and a plant protection product.

Please check the legal restrictions that apply to your country regarding the use of the products noted in the list.

5.6 AgKnowledge Center
DILUTION TABLE FOR FERTIGATION FERTILIZERS

Dilution Table

How much fertilizer to dissolve?

- Choose the feeding strength you need for your crop in the first column (gr/liter)
- Choose your tank size: 100, 500 or 1000 liter.
- Choose the dilution ratio: 1:200, 1:100 or 1:50.
- Read the figure at the crossing of the feeding strength line and the dilution column. This is the kilograms of fertilizer to dissolve in your tank.

Example:
You want a feeding strength of 0.8 gram per liter. Your tank size is 1000 liter.
The dilution ratio is 1:100. Dissolve 80kg of fertilizer.

How much Fertilizer should you put in the tank?

	Tank size								
	100 liter			500 liter			1000 liter		
	Dilution Ratio			Dilution Ratio			Dilution Ratio		
Feeding	1:50 (2%)	1:100 (1%)	1:200 (0,5%)	1:50 (2%)	1:100 (1%)	1:200 (0,5%)	1:50 (2%)	1:100 (1%)	1:200 (0,5%)
Strength	Kg of Fertilizer			Kg of Fertilizer			Kg of Fertilizer		
0.2 gr/l	1	2	4	5	10	20	10	20	40
0.3 gr/l	1,5	3	6	7,5	15	30	15	30	60
0.4 gr/l	2	4	8	10	20	40	20	40	80
0.5 gr/l	2,5	5	10	12,5	25	50	25	50	100
0.6 gr/l	3	6	12	15	30	60	30	60	120
0.8 gr/l	4	8	16	20	40	80	40	80	160
1.0 gr/l	5	10	-	25	50	-	50	100	-
1.2 gr/l	6	12	-	30	60	-	60	120	-
1.4 gr/l	7	14	-	35	70	-	70	140	-
1.5 gr/l	7,5	15	-	37,5	75	-	75	150	-
1.6 gr/l	8	-	-	40	-	-	80	-	-
1.8 gr/l	9	-	-	45	-	-	90	-	-
2.0 gr/l	10	-	-	50	-	-	100	-	-
2.5 gr/l	12,5	-	-	62,5	-	-	125	-	-
3.0 gr/l	15	-	-	75	-	-	150	-	-

Fertilizer Storage and Handling

Fertilizer storage areas contain concentrated nutrients that must be stored and managed properly. Risks in storage areas include the release of nutrients due to broken, damaged, or leaking containers; a loss of security leading to irresponsible use; the accumulation of outdated materials giving rise to the storage of excessive quantities of fertilizer, in turn unnecessarily increasing the risk level; and the combustion of oxidizing compounds in fertilizer (e.g. nitrates) caused by a fire or other disaster. Fertilizers can cause harm if they reach the surface water or groundwater.

Checklist: Fertilizer storage

1. Use a building or area dedicated to fertilizer storage. This should therefore be separate from offices, surface water, neighbouring dwellings, and bodies of water; separate from pesticides; and protected from extreme heat and flooding. The storage area should have an impermeable floor with secondary containment, away from plant material and high traffic areas.

2. Keep the building or storage area locked and clearly labelled as a fertilizer storage area. Labels on the windows and doors of the building provide firefighters with information about fertilizers and other products present during an emergency response to a fire or a spill. Fire extinguishers should be present and immediately accessible, as well as emergency contact information.

3. Use pallets to keep large drums or bags off the floor. Shelves for smaller containers should have a lip to keep the containers from sliding off easily. Steel shelves are easier to clean than wood if a spill occurs.

4. When storing acids, the areas should have impermeable flooring with all surfaces draining to a neutralization pit, to deal with any spills that may occur. Adequate personal protection equipment should be available.

5. Adequate spill clean-up materials for liquids (e.g. absorbent materials) and solids (e.g. shovel, dustpan, broom, and buckets) should be available within the general area.

6. There should be no food, drink, tobacco products, or livestock feed present in storage areas containing general greenhouse supplies.

7. If you plan to store large bulk tanks, provide a containment area large enough to confine 125% of the contents of the largest bulk container. Extra care needs to be taken with concentrated stock solutions. Secondary containment should be used.

8. Fertilizer bags and boxes should be opened with a utility knife (Stanley knife) or scissors; open containers should be resealed and returned to storage where they should be kept in a dry place.

9. Fertilizers should be stored in their original containers unless damaged; labels should be visible and legible; food or beverage containers should never be used for storage.

10. Inventory should be actively updated as chemicals are added or removed from storage; materials should be dated when purchased and removed when outdated based on the latest advice from environmental protection authorities.

11. There should be active mechanical temperature control and no direct sources of heat (sunny windows, steam pipes, furnaces, etc.). Adequate ventilation must be ensured.

12. Never store fertilizers inside a well house or a facility containing an abandoned well.

13. Provide adequate road access for deliveries and use.

Section 6
Breakdown tables

Foliar fertilizers

Agroleaf® Liquid

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Agroleaf Liquid	7-7-7+0.14 Zn+0.11 Mn	Total+	3134				7	7	7	
Agroleaf Liquid	0-0-10+4.7 Mn+1.3 Zn	Man Z+	3133						10	
Agroleaf Liquid	0-0-9+3.7 Zn+2.3 Mn	Zinc M+	3130						9	
Agroleaf Liquid	4-16-4+4Mo+0.1 B	MolyComplex	3132	4		3,6	0,4	16	4	
Agroleaf Liquid	10%B	B-10	3131							

Agroleaf® Power

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Agroleaf Power	20-20-20+TE	Total	2096	20	4,3	2,2	13,5	20	20	
Agroleaf Power	31-11-11+TE	High N	2095	31	1,0		30,0	11	11	
Agroleaf Power	12-52-5+TE	High P	2094	12		8,7	3,3	52	5	
Agroleaf Power	15-10-31+TE	High K	2097	15	9,0	1,7	4,3	10	31	
Agroleaf Power	11-5-19+9CaO+2.5MgO+TE	Calcium	2098	11	11,0			5	19	9,0
Agroleaf Power	10-5-10+16MgO+32SO3+TE	Magnesium	2099	10	2,0		8,0	5	10	

** EDTA chelated* *** DTPA chelated* **** Measured in soft water (comparable to rainwater)*

	MgO	SO_3	B	Cu	Fe	Mn	Mo	Zn	pH at 1 g/l	Density (20°C)	EC at 1g/l (mS/cm)
						0,11*		0,140*	6,2	1,20	0,14
						4,70*		1,300*	7,5	1,34	0,27
						2,30*		3,700*	7,5	1,34	0,26
			0,10				4,000		6,0	1,28	0,40
			10,00						7,0	1,33	0,19

	MgO	SO_3	B	Cu	Fe	Mn	Mo	Zn	EC at 1g/l (mS/cm)	Max. solubility (kg/100 l)
		0,8	0,03	0,070*	0,14**	0,07*	0,001	0,070*	0,8	2,5
		0,8	0,03	0,070*	0,14**	0,07*	0,001	0,070*	0,5	2,5
		0,8	0,03	0,070*	0,14**	0,07*	0,001	0,070*	0,7	2,5
		0,8	0,03	0,070*	0,14**	0,07*	0,001	0,070*	1,0	2,5
	2,5		0,04	0,030*	0,25**	0,13*	0,020	0,030*	1,2	2,5
	16,0	32,0	0,25	0,070*	0,14**	0,25*	0,001	0,070*	1,1	2,5

Overview is subject to formulation changes and misprints.

Agroleaf® Special

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Agroleaf Special	12% Manganese EDTA	Mn	2088							
Agroleaf Special	14% Zinc EDTA	Zn	2089							

Nutrivant®

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Nutrivant	0-20-40+TE	Fruit Tree preparation	2205					20	40	
Nutrivant	0-39-26+2MgO+TE	Fruit Flower Booster	2204					39	26	
Nutrivant	12-5-27+8CaO+TE	Fruit Sugar Booster	2238	12	11,9			5	27	8,0
Nutrivant	20-10-15+TE	Cereal Growth	2247	20	3,5	7,4	9,1	10	15	
Nutrivant	3-13-23+2MgO+TE	Oil Crops Quick Starter	2241	3		1,5	1,5	13	23	
Nutrivant	3-28-18+2MgO+3B+1Mn	Sugar Beet Quick Start	2242	3		1,1	1,9	28	18	
Nutrivant	4-37-24+2MgO+TE	Potato Quick Start	2239	4		1,1	2,9	37	24	
Nutrivant	5-34-5+4MgO+3.4Zn+1.0Mn	Corn Quick Start	2202	5		5,0		34	5	
Nutrivant	6-23-35+TE	Cereal Grain Quality	2240	6	6,0			23	35	
Nutrivant	8-16-39+TE	Booster	2207	8	8,0			16	39	

** EDTA chelated* *** DTPA chelated* **** Measured in soft water (comparable to rainwater)*

	MgO	SO_3	B	Cu	Fe	Mn	Mo	Zn	EC at 1g/l (mS/cm)	pH at 1 g/l	Max. solubility (kg/100 l)
						12,00*			0,4	6,4	0,5
								14,000*	0,4	6,5	0,5

	MgO	SO_3	B	Cu	Fe	Mn	Mo	Zn	EC at 1g/l (mS/cm)	pH at 10 g/l	Max. solubility (kg/100 l)
		24,5	0,10	0,002*	0,02*	0,20*	0,001	0,200*	1,3	3,3	19
	2,0	4,2	1,80			0,20*		0,200*	0,8	4,3	35
			0,10		0,10*	0,10*		0,100*	1,2	3,2	
		18,3	0,05	0,005*	0,08*	0,04*	0,005	0,020*	1,2	3,9	54
	2,0	22,8	3,50			0,50*	0,001	0,050*	1,0	3,3	40
	2,0	9,2	3,00			1,00*			0,8	3,4	44
	2,0	7,9	0,50			0,20*		0,200*	0,9	3,4	37
	4,0	14,0				1,00*		3,400*	1,0	3,1	49
		2,5	0,10	0,200*	0,05*	0,20*	0,002	0,200*	1,1	4,7	
				0,005*	0,08*	0,04*	0,005	0,020*	1,2	5,3	42

As Nutrivant contains a special adjuvant to improve performance, ICL recommends to NOT add extra adjuvant. ICL advises to test in advance each tank mixed with agrochemicals on a small scale before spraying large areas.

Overview is subject to formulation changes and misprints.

Fertigation fertilizers

Agrolution® Liquid

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Agrolution Liquid	Cu-Fe-Mn-Mo-Zn	ME-5	3152							
Agrolution Liquid	B-Cu-Fe-Mn-Mo-Zn	ME-6	3151							

Agrolution® pHLow

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Agrolution pHLow	10-10-40+TE	114	2193	10	10,0			10	40	
Agrolution pHLow	10-50-10+TE	151	2192	10		4,7	5,3	50		
Agrolution pHLow	15-13-25+Te	335	2194	15	7,4	2,4	5,2	13	25	
Agrolution pHLow	15-30-15+Te	242	2198	15	6,0	5,7	3,3	30	15	
Agrolution pHLow	22-10-7+2MgO+TE	531	2195	22	8,4	10,0	3,6	10	7	
Agrolution pHLow	20-20-20+TE	222	2197	20	4,9	1,8	13,3	20	20	

Agrolution® Special

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Agrolution Special	13-5-28+2CaO+2.5MgO+TE	316	2168	13	11,0		2,0	5	28	2,0
Agrolution Special	14-7-14+14CaO+TE	313	2159	14	11,6	0,6	2,2	7	14	14,0
Agrolution Special	14-8-22+5CaO+2MgO+TE	324	2189	14	10,6	0,2	3,2	8	22	5,0
Agrolution Special	23-10-23+TE	212	2169	23	5,2		17,8	10	23	
Agrolution Special	7-14-35+3.5MgO+TE	125	2179	7	5,9		1,1	14	35	
Agrolution Special	12-6-29+7CaO+TE	214	2167	12	12,0			6	29	7,0

** EDTA chelated* *** DTPA chelated* **** Measured in soft water (comparable to rainwater)*

	MgO	SO_3	B	Cu	Fe	Mn	Mo	Zn	pH at 1 g/l	Density (20^0C)	EC at 1g/l (mS/cm)
				0,150*	3,65*	1,70*	0,140	0,340*	7,5	1,34	0,28
			0,33	0,140*	3,60*	1,60*	0,090	0,300*	7,5	1,34	0,26

	MgO	SO_3	B	Cu	Fe	Mn	Mo	Zn	HCO_3 reduction mg/g WSF***	EC at 1g/l (mS/cm)	pH at 1 g/l	Max. solubility (kg/100 l)
			0,01	0,010*	0,16*	0,06*	0,006	0,010*	45	1,4	3,1	20
		1,8	0,01	0,010*	0,16*	0,06*	0,006	0,010*	118	1,0	3,0	20
		7,8	0,01	0,010*	0,16*	0,06*	0,006	0,010*	123	1,6	2,9	20
		6,1	0,01	0,010*	0,16*	0,06*	0,006	0,010*	74	1,3	2,9	20
	2,0	14,6	0,01	0,010*	0,16*	0,06*	0,006	0,010*	71	1,6	2,8	20
			0,01	0,010*	0,16*	0,06*	0,006	0,010*	47	0,9	3,1	20

	MgO	SO_3	B	Cu	Fe	Mn	Mo	Zn	HCO_3 reduction mg/g WSF***	EC at 1g/l (mS/cm)	pH at 1 g/l	Max. solubility (kg/100 l)
	2,5		0,01	0,010*	0,16**	0,08*	0,006	0,040*	44	1,3	3,3	13,3
			0,01	0,010*	0,16**	0,08*	0,006	0,040*	50	1,3	3,1	23,7
	2,0		0,01	0,010*	0,16**	0,08*	0,006	0,040*	70	1,4	3	23,7
			0,01	0,010*	0,16**	0,08*	0,006	0,040*	16	0,8	3,8	23,7
	3,5	14,0	0,01	0,010*	0,16**	0,08*	0,006	0,040*	34	1,3	3,4	17,1
			0,01	0,010*	0,16**	0,08*	0,006	0,040*	27	1,3	3,5	23,7

Ask your local ICL sales adviser for availability of above items in your area.

Solinure® GT

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Solinure GT	10-5-39+2MgO+TE	Solinure GT 1	2919	10	9,0	1,0		5	39	
Solinure GT	7-19-38+2MgO+TE	Solinure GT 2	2922	7	7,0			19	38	
Solinure GT	12-5-35+2MgO+TE	Solinure GT 3	2923	12	8,1	2,1	1,8	5	35	
Solinure GT	14-6-23+2MgO+TE	Solinure GT 4	2918	14	6,1	7,9		6	23	
Solinure GT	20-20-20+TE	Solinure GT 5	2911	20	5,9	3,8	10,3	20	20	
Solinure GT	15-15-15+TE	Solinure GT 6	2916	15	3,4	11,6		15	15	
Solinure GT	18-11-11+2MgO+TE	Solinure GT 7	2910	18	3,3	11,3	3,4	11	11	
Solinure GT	23-10-10+5.6MgO+TE	Solinure GT 8	2921	23	1,0	1,2	20,8	10	10	
Solinure GT	11-35-11+2MgO+TE	Solinure GT 9	2920	11	2,1	8,9		35	11	

Solinure® FX

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Solinure FX	10-10-40	Solinure FX	2948	10		1,3	8,7	10	40	
Solinure FX	20-20-20	Solinure FX 10	2951	20		2,1	17,9	20	20	
Solinure FX	18-8-29	Solinure FX 11	2950	18		0,7	17,3	8	29	
Solinure FX	13-40-13	Solinure FX 12	2949	13		6,9	6,1	40	13	
Solinure FX	16-32-16	Solinure FX 13	2944	16		4,3	11,7	32	16	
Solinure FX	24-13-13	Solinure FX 14	2943	24		5,4	18,6	13	13	
Solinure FX	17-8-27+3CaO	Solinure FX 15	2945	17	1,6		15,3	8	27	3,0
Solinure FX	16-8-25+4MgO	Solinure FX 16	2946	16			16,0	8	25	
Solinure FX	15-5-30	Solinure FX 17	2958	15		4,9	10,1	5	30	
Solinure FX	18-9-18	Solinure FX 18	2947	18		8,5	9,5	9	18	

Solinure®

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Solinure	16-10-24+2MgO+TE		2410	16	7,2	5,7	3,1	10	24	
Solinure	18-6-19+3MgO		2442	18	10,5	7,5		6	19	
Solinure	9-0-41+2MgO+TE		2928	9	8,3				41	
Solinure	19-7-20+2MgO+TE		2929	19	11,0	8,0		7	20	
Solinure	12-12-36+TE		2902	12	10,1	1,9		12	36	
Solinure	15-10-30+TE		2448	15	11,0	4,0		10	30	

Micromax®

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Micromax	Fe chelate EDDHA 6%	WS Iron	2995							
Micromax	B+Cu+Fe+Mn+Mo+Zn	WS TE-Mix	2996							

Select

Product	Formulation	Product Name	Item code	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO
Select	0-52-34	Select MKP	2851					52	34	
Select	12-61-0	Select MAP	2852	12		12,0		61		
	0-60-20	PekAcid	2856					60	20	
	0-0-61	Ferti-K	2853						61	
	0-55-18+7MgO	MagPhos	2850					55	18	
	0-0-15+13MgO	Quick-Mg	2854						15	
	0-0-0+16MgO+32SO3	Mag S	2857							

** EDTA chelated* *** DTPA chelated* **** Measured in soft water (comparable to rainwater)*

MgO	SO_3	Cl	B	Cu	Fe	Mn	Mo	Zn	HCO_3 reduction mg/g WSF***	EC at 1g/l (mS/cm)	pH at 10 g/l	Max. solubility (kg/100 l)
2,0	11,2		0,01	0,002*	0,04*	0,01*	0,002	0,002*		1,4	4,4	40
2,0	4,1		0,01	0,002*	0,04*	0,01*	0,002	0,002*		1,1	4,7	43
2,0	14,4		0,01	0,002*	0,04*	0,01*	0,002	0,002*		1,4	3,5	41
2,0	25,0		0,01	0,002*	0,04*	0,01*	0,002	0,002*		1,4	4,6	45
			0,01	0,002*	0,04*	0,01*	0,002	0,002*		0,9	4,4	52
	28,1		0,01	0,002*	0,04*	0,01*	0,002	0,002*		1,5	4,5	50
2,0	30,2		0,01	0,002*	0,04*	0,01*	0,002	0,002*		1,5	5	43
5,6	16,7		0,01	0,002*	0,04*	0,01*	0,002	0,002*		0,7	3,1	56
2,0	14,5		0,01	0,002*	0,04*	0,01*	0,002	0,002*		1,2	4,0	54

MgO	SO_3	Cl	B	Cu	Fe	Mn	Mo	Zn	HCO_3 reduction mg/g WSF***	EC at 1g/l (mS/cm)	pH at 10 g/l	Max. solubility (kg/100 l)
		29,4							13	1,4	3,1	39
		11,7							14	0,8	3,8	44
	4,6	17,5							10	1,1	2,9	39
		9							11	1,0	4,0	44
		9,5							42	1,0	3,0	50
	9,7	9,3							11	0,9	3,3	52
		18,3							16	1,2	2,7	62
4,0	8,5	15,7							11	1,1	3,0	40
	19,2	21,5							15	1,4	3,1	30
	21,5	11,7							14	1,4	3,2	40

MgO	SO_3	Cl	B	Cu	Cu EDTA	Fe	Fe EDTA	FE DTPA	Fe EDDHA	Mn	Mo	Zn	HCO_3 reduction mg/g WSF***	EC at 1g/l (mS/cm)	pH at 1 g/l	Max. solubility (kg/100 l)
2,0	14,7		0,01	0,010	0,006	0,05	0,05			0,02	0,001	0,020		N/A		
3,0	10,4		0,04	0,006	0,002	0,20	0,10		0,10	0,03	0,007	0,030		1,4		
2,0			0,01	0,020	0,020	0,04	0,04			0,01*	0,002	0,002*		1,5		41
2,0	9,3		0,02	0,015		0,08	0,05	0,03		0,02*	0,004	0,028				
	2,1		0,02	0,010	0,010	0,07	0,07			0,04*	0,004	0,025*		1,3	5,1	
1,8			0,01	0,010	0,006	0,04			0,04	0,02	0,001	0,02				

MgO	SO_3	Cl	B	Cu	Fe	Fe EDTA	FE DTPA	Fe EDDHA	Mn	Mo	Zn	EC at 1g/l (mS/cm)	pH at 1 g/l	Max. solubility (kg/100 l)
					6,00			6,00				0,7	8,6	6
			0,70	0,500*	7,80	5,40	2,40		2,60*	0,320	1,300*	0,3	4,3	10

MgO	SO_3	Cl	B	Cu	Fe	Mn	Mo	Zn	EC at 1g/l (mS/cm)	pH at 10 g/l	Max. solubility (kg/100 l)
									0,7	4,6	23
									0,9	4,5	38
									1,3	2,2	67
									2,0	7,0	33
7,0									0,8	5,0	40
13,0									0,9	6,7	68
16,0	32,0								0,8	6,6	33

N/A; Not available at time of printing

Ask your local ICL sales adviser for availability of above items in your area.

Controlled release fertilizers

Agroblen®

Brand	Formulation	Item code	Longevity	% coated N	% coated P	% coated K
Agroblen	18-5-10+4CaO+2MgO	8617	2-3	100	100	100
Agroblen	21-5-8+8MgO	8616	2-3	100	100	100
Agroblen	13-13-13+3MgO	8650	3-4	100	100	100
Agroblen	14-14-14	7604	3-4	100	100	100
Agroblen	18-5-11+4CaO+2MgO	8637	3-4	100	100	100
Agroblen	18-8-9+8MgO	8610	3-4	100	100	100
Agroblen	9-20-8+3MgO+0.1B	8674	3-4	100	100	100
Agroblen	15-8-11+4CaO+2MgO	8638	5-6	100	100	100
Agroblen	16-7-9+9MgO	8609	5-6	100	100	100
Agroblen	18-0-18+2MgO	5025	5-6	100		100
Agroblen	9-14-19+3MgO+0.5Fe	8624	5-6	100	100	100
Agroblen	11-21-9+6MgO	8635	8-9	100	100	100
Agroblen	11-8-17+18SO3+3MgO+Fe	8626	8-9	100	100	100
Agroblen	14-12-9+0.1B	8646	8-9	100	100	100
Agroblen	16-8-8+4CaO+2MgO	8639	8-9	100	100	100
Agroblen	17-9-8+4MgO	8666	8-9	100	100	100
Agroblen	24-0-7+2MgO+TE	5012	8-9	100		100
Agroblen	9-20-8+3MgO+0.1B	8676	8-9	100	100	100
Agroblen	15-9-9+3MgO	8667	12-14	100	100	100
Agroblen	9-13-18+3MgO+0.5Fe	8625	12-14	100	100	100
Agroblen	17-7-10+4MgO	8621	14-16	100	100	100
Agroblen	17-8-9+3MgO	8627	16-18	100	100	100
Agroblen	10-7-22+2MgO	8629	16-18	100	100	100

	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO	MgO	SO_3
	18	7,6	8,4	2,0	5	10	4,0	2,0	9,0
	21	4,2	4,9	11,9	5	8		8,0	10,0
	13	5,1	7,9		13	13		3,0	14,0
	14	5,4	8,6		14	14			14,0
	18	7,6	8,4	2,0	5	11	4,0	2,0	9,0
	18	3,5	5,3	9,2	8	9		8,0	13,0
	9	2,7	6,3		20	8		3,0	14,6
	15	6,6	8,4		8	11	4,0	2,0	11,0
	16	5,6	7,1	3,3	7	9		9,0	14,0
	18			18,0		18		2,0	33,0
	9	2,9	6,1		14	19		3,0	18,0
	11	3,0	8,0		21	9		6,0	11,0
	11	4,4	6,6		8	17		3,0	18,0
	14	6,1	7,9		12	9			12,0
	16	7,1	8,9		8	8	4,0	2,0	8,0
	17	7,5	9,5		9	8		4,0	12,0
	24	3,1	4,0	17,0		7		2,0	25,0
	9	2,7	6,3		20	8		3,0	15,0
	15	6,5	8,5			9		3,0	12,0
	9	3,1	5,9		13	18		3,0	18,0
	17	7,8	9,2		7	10		4,0	11,0
	17	7,6	9,4		8	9		3,0	10,0
	10	4,3	5,7		7	22		2,0	18,0

Ask your local ICL sales adviser for availability of above items in your area.

Agromaster®

Brand	Formulation	Item code	Longevity	% coated N	% coated P	% coated K	
Agromaster	11-48-0	7641	1-2	74	74		
Agromaster	26-5-11+2MgO+16SO3+TE	4259	2-3	40	44	36	
Agromaster	18-8-16+2MgO+20SO3	4262	2-3	42			
Agromaster	15-25-10+3MgO+16SO3	4285	2-3	60			
Agromaster	21-10-15+1.7CaO+0.7MgO	5071	2-3	70		59	
Agromaster	12-5-19+4MgO+17SO3	5072	2-3	32			
Agromaster	19-5-20+4MgO+19.5SO3	5073	2-3	34			
Agromaster	12-26-9+3MgO+9SO3	5074	2-3	34			
Agromaster	16-10-16+2MgO+27SO3	5075	2-3	32			
Agromaster	25-5-10+2MgO+21SO3	5076	2-3	32			
Agromaster	15-24-10+2MgO+8SO3	5108	2-3	30			
Agromaster	25-5-10+22SO3	5109	2-3	31			
Agromaster	11-11-21+14SO3	5110	2-3	30			
Agromaster	15-7-15+3MgO+34SO3	5111	2-3	30			
Agromaster	16-10-16+2MgO+28SO3	5112	2-3	31			
Agromaster	15-5-20+3MgO+20SO3	5113	2-3	30			
Agromaster	11-11-21+3MgO+30SO3	5114	2-3	41			
Agromaster	20-5-9+3MgO+31SO3	5115	2-3	60			
Agromaster	19-5-19+3MgO+22SO3	5116	2-3	31			
Agromaster	30-8-12	5083	3-4	71			
Agromaster	17-0-8+9CaO+3MgO+28SO3	4286	4-5	81			
Agromaster	34-9-6	5084	4-5	70			
Agromaster	15-8-16+5MgO+25SO3	5003	5-6	92	81	82	
Agromaster	20-10-10+4MgO+24SO3	5004	5-6	94	51	100	
Agromaster	24-0-6+7MgO+24SO3+TE	5015	5-6	80		16	
Agromaster Mini	10-43-0	7642	1-2	74	74		
Agromaster Mini	24-5-11	5220	2-3	38			
Agromaster Start Mini	8-32-0+5MgO+9SO3+TE	5079	1-2	72	75		
Agromaster Start Mini	21-21-5+2MgO+15SO3	5077	2-3	40			

Agrocote®

Brand	Formulation	Item code	Longevity	% coated N	% coated P	% coated K	
Agrocote Max	44-0-0	7000	1-2	100			
Agrocote Max	44-0-0	7001	2-3	100			
Agrocote Max	43-0-0	7002	3-4	100			
Agrocote Max	43-0-0	7003	4-5	100			
Agrocote Max	42-0-0	7004	5-6	100			
Agrocote S	39-0-0	83039	2-3	100			
Agrocote S	38-0-0	93040	3-4	100			
Agrocote S	37-0-0	93165	5-6	100			
Agrocote	11-47-0	7640	1-2	100	100		
Agrocote	0-0-56	E93066	3-4			100	
Agrocote	0-0-43,5	93034	3-4			100	
Agrocote	0-0-55	E93055	5-6			100	

	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO	MgO	SO_3
	11		11,0		48				
	26	1,5	2,8	21,7	5	11		2,0	16,0
	18	4,4	6,0	7,6	8	16		2,0	20,0
	15		6,0	9,0	25	10		3,0	16,0
	21		4,0	17,0	10	15	1,7	0,7	17,0
	12		1,4	10,6	5	19		4,0	17,0
	19		1,4	17,6	5	20		4,0	19,5
	12		6,1	5,9	26	9		3,0	9,0
	16		6,6	9,4	10	16		2,0	27,0
	25		5,3	19,7	5	10		2,0	21,0
	15		10,6	4,6	24	10		2,0	8,0
	25		9,8	15,2	5	11			21,0
	11		7,8	3,3	11	21			14,0
	15		8,2	6,8	7	15		3,0	35,0
	16		7,4	8,6	10	16		2,0	28,0
	15		7,2	7,8	5	20		3,0	21,0
	11		6,6	4,6	11	21		3,0	30,0
	20		8,2	12,2	5	9		3,0	31,0
	19		2,0	17,0	5	19		3,0	22,0
	30		3,4	26,6	8	12			
	17			17,0		8	9,0	3,0	28,0
	34		3,6	30,4	9	6			
	15	1,3	3,1	10,6	8	16		5,0	25,0
	20		3,0	17	10	10		4,0	24,0
	24	2,8	3,2	18,0		6		7,0	24,0
	10		10,0		43				
	24		2,5	21,5	5	11			17,9
	8		7,4	0,6	32			5,0	9,0
	21		4,8	16,2	21	5		2,0	15,0

	N-total	NO_3-N	NH_4-N	Urea-N	P_2O_5	K_2O	CaO	MgO	SO_3
	44			44,0					
	44			44,0					
	43			43,0					
	43			43,0					
	42			42,0					
	39			39,0					27,0
	38			38,0					33,2
	37			37,0					40,0
	11		11,0		47				
						56			
						43,5			33,2
						55			

Ask your local ICL sales adviser for availability of above items in your area.

NOTES

ICL Specialty Fertilizers
P.O. Box 40
4190 CA Geldermalsen
The Netherlands
Tel.: +31 (0) 418 655 700
Fax: +31 (0) 418 655 795
Email: info@icl-group.com
www.icl-sf.com

Everris International B.V. (UK, Netherlands, Germany) is certified according ISO - 9001. Everris International B.V. Heerlen is also certified according ISO – 14001 and OHSAS – 18001. Everris International B.V. is a legal entity under ICL Specialty Fertilizers.

ICL Specialty Fertilizers