



**Agroleaf[®]
Power**

**Agroleaf[®]
Special**

**Agroleaf[®]
Liquid**



Precision Nutrition

with Foliar Fertilizers

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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.

Foliar fertilizer technology is a unique, dynamic, and effective form of crop nutrition. ICL Specialty 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.



M-77 Technology

M-77 is an exclusive package of compounds that have a defined purpose. This package includes ingredients that enhance the delivery of the spray solution, speedy uptake and effectiveness of the nutrients. Included within M-77 is our innovative, patented plant booster that takes plant nutrition one step further and results in healthier and more productive crops.

The M-77 formula contains

- Compounds extending the effectiveness of the chelates supplied by the foliar spray
- Vitamins that improve the metabolic activity of the plant tissues absorbing the spray
- Functional elements that improve the utilization of the nutrients
- Stress-reducing compounds that enhance the plant's tolerance 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 bio-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. ICL uses unique patented technologies like M-77 and Fertivant to increase efficiency of the foliar application.

Agroleaf[®] Power



A unique water-soluble foliar fertilizer

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

It boasts outstanding purity (zero chlorides) and a high nutrient content. 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.

Benefits of Agroleaf Power

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



"I have been using ICL Specialty Fertilizers full portfolio of products including Agroleaf, Agromaster, and Solinure for some years now. What drew me to this partnership is not only the excellent products but the full support in form of recommendations and the follow up field visits by their agronomist"

Mr. Aleksandar Stambolija
OSR, cabagge and pepper grower
Donji Miholjac, Croatia

Agroleaf[®] Special

The premium fertilizer that boosts crop productivity



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.

Benefits of Agroleaf Special

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



X3-Active Technology

X3-Active is a specific, selected biostimulant 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.



Agroleaf[®] Liquid

The high quality liquid foliar fertilizer

ICL launches a new portfolio of innovative, liquid fertilizers: Agroleaf Liquid. With this new portfolio we provide growers the benefits of liquid fertilizers: ease of use, easy to dilute and easy to store.

The ICL perception of solving farmers' challenges revolves around three key focus area:

Innovation

ICL is the recognized standard for product innovation and performance. Innovation areas include controlled release technologies, water soluble fertilizers and liquid fertilizers.

Best ingredients

What you give is what you get! ICL only accepts the best ingredients to provide consistent and trouble-free products for optimal plant growth.

Reliability

ICL's production methods are verified by three different "ISO" certifications. All products are REACH registered. Bag after bag, can after can, year in year out, you can rely on our quality.



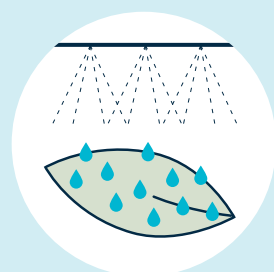


F3 SurfActive technology for improved nutrient availability

Growing plants and crops without stress is the objective of each farmer. However, in our daily work we know that many factors can create stress situations. With normal nutrition via the roots a plant will get the majority of the required nutrients, but in cases when the root system is not functioning optimally or nutrition via the soil is malfunctioning, foliar feeding is a solution.

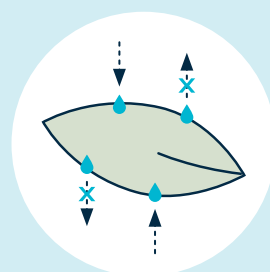
Agroleaf Liquid range contains F3 SurfActive, an unique ICL technology that increases the efficiency of each foliar application. F3 SurfActive technology consists of an innovative blend of non-ionic surfactants created to improve nutrient availability and the efficiency of the spray solution.

What you can expect from the F3 SurfActive technology



Better spreading

F3 technology lowers the droplet surface tension and spreads nutrients optimally over the leaves. This results in a greater covered area for nutrient uptake.



Better adhesiveness

Better water droplet adhesion to the leaf surface reduces runoff and bounce-off, and increases nutrient availability, especially on waxy leaves.



Better retention

F3 technology enables the formation of small nutrient deposits on the leaf surface that are reactivated by rewetting (e.g. by high air humidity). This avoids droplet evaporation and provides prolonged nutrition for improved foliar applications.

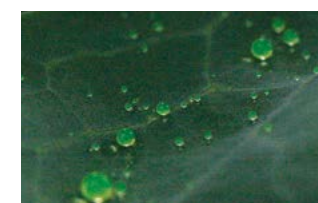


F3 SurfActive mode of action

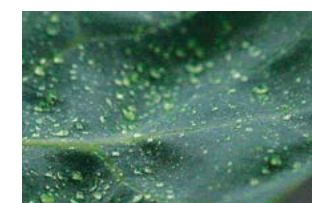
Droplets behavior on waxy leaves treated with and without F3 SurfActive technology.

Leaves treated with F3 SurfActive technology show significantly better coverage in both light conditions!

Under normal daylight conditions:

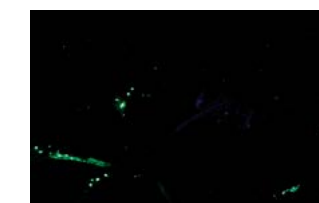


untreated



treated

Under UV light conditions:

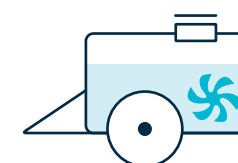


untreated

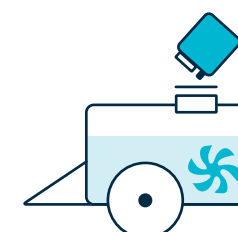


treated

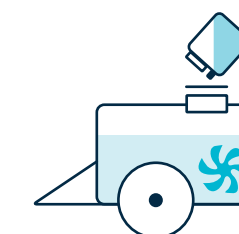
Agroleaf Liquid dosage



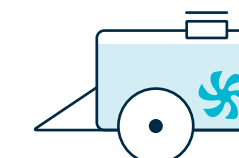
1. Fill tank to 2/3 of capacity



2. Add Agroleaf liquid



3. Add plant protection product



4. Fill tank to full capacity

Disclaimer: This product can normally be used in conjunction with most of the products commonly used for foliar application, but ICL Specialty Fertilizers recommends to perform a small-scale compatibility test prior to any foliar application. Avoid mixing the product with copper and sulphur based products!

Trial case, hops

Objective: The objective of the trial is to test the effect of the foliar fertilizers on hop yield and alpha-bitter acids contents in the case of semi-early red-bine hop variety called Saaz.

Where: Hop Research Institute Co., Ltd., Žatec, Czechia

Crop: Hops, Saaz variety

Treatments		
Timing	Grower practice	Agroleaf Power
Beginning of May	Similar NPK ratio and dosages with conventional foliar fertilizers	High N – 5kg/ha Special Zn – 0.5 kg/ha
Mid-June		High P – 5 kg/ha
Beginning of July		Magnesium – 5 kg/ha Special Zn – 0.5 kg/ha
End of July		High K – 5 kg/ha

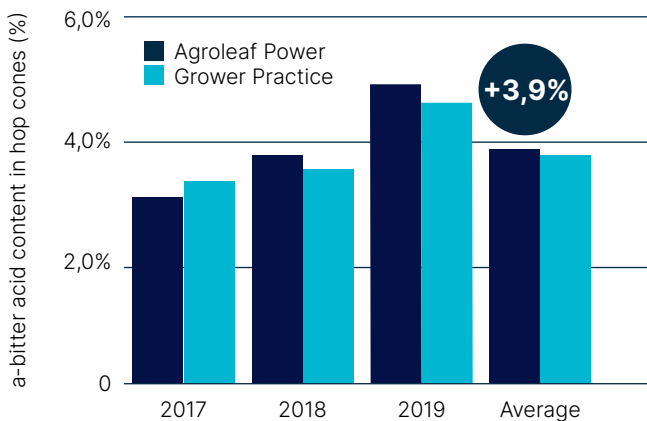
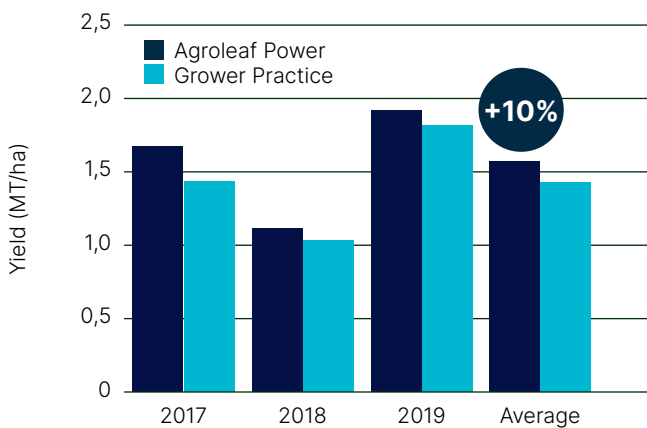
Every year, granular fertilizers were equally applied on both treatment zones: Units, kg/ha: N - 188, P₂O₅ - 145, K₂O - 181

Economic evaluation	Agroleaf Power	Grower practice
Yield, MT/ha	1.57	1.43
Total cost of foliar fertilization, Euro/ha	88	35
Gross income minus cost of foliar fertilization, Euro/ha	€ 13,257	€ 12,120
Extra income/ha vs grower practice	€ 1,137	-

Reference price for hop yield = 8,500 Euro/MT

+10%

Yield and quality



Conclusion

The Agroleaf Power treatment increased hop yield by 10% on average. Other quality parameters were equal to or slightly better than grower practice. Agroleaf Power generated € 1,137 extra income compared to grower practice.

+12%

Trial case, potatoes

Objective: Compare the efficiency of Agroleaf Power foliar fertilizer to grower practice in chips potatoes.

Where: Färlöv, Sweden

Crop: Chips potato, Saturna

Treatments Both treatments received:
Liquid Pig Manure 20 Mt/ha
Concentrated fruit juice 1.9 Mt/ha
Axan 27-3 300 Kg/ha
Kalimagnesia 150 Kg/ha
Manganese Nitrate 4x1 l/ha

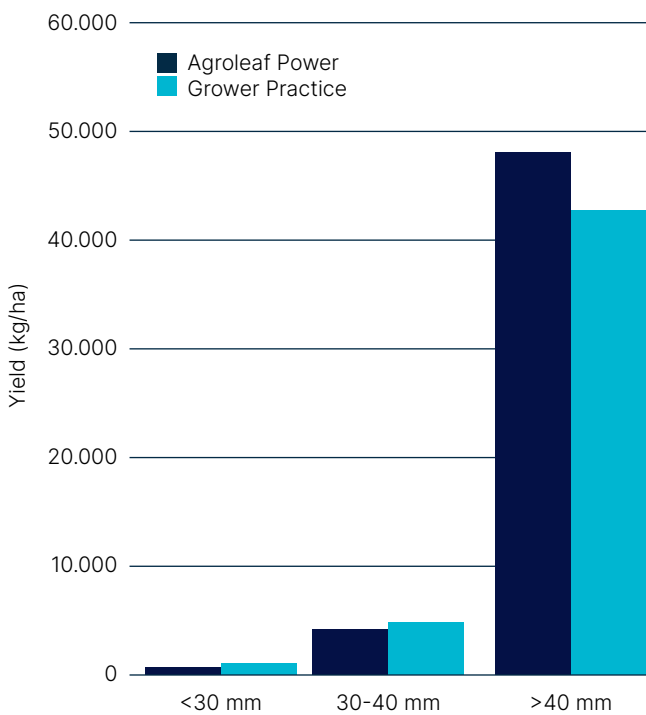
ICL treatment:
Agroleaf Power High P 4+4 Kg/ha
Agroleaf Power High K 4+4 Kg/ha

Economic evaluation	Agroleaf Power	Grower practice
Cat 1: High quality, > 40 mm (Kg/ha)	47.873	42.629
Cat 2: Medium quality, 30-40 mm (Kg/ha)	2.936	3.389
Gross income / ha	€ 7,219	€ 6,538
Extra costs of ICL treatment (vs grower practice)	77 €/ha	-
Extra income / ha (vs grower practice)	604 €/ha	

Why Agroleaf Power?

- Agroleaf Power will minimize the effects of stress caused by weather, pesticides and heavy production
- Agroleaf Power will quickly correct nutritional deficiencies

Yield distribution per size class



Conclusion

The application of Agroleaf Power increased the yield of tubers higher than 40 mm by 12%. The Agroleaf Power treatment resulted in a 9% increase of the gross income per hectare thanks to improved potato quality.

