



*Where science serves nature*




**FARM SOLUTION CATALOGUE**



*“To photograph: it is to put on the same line  
of sight the head, the eye and the heart”*

(Henri Cartier-Bresson)

All the pictures with this symbol  have been realized by Valagro employees.

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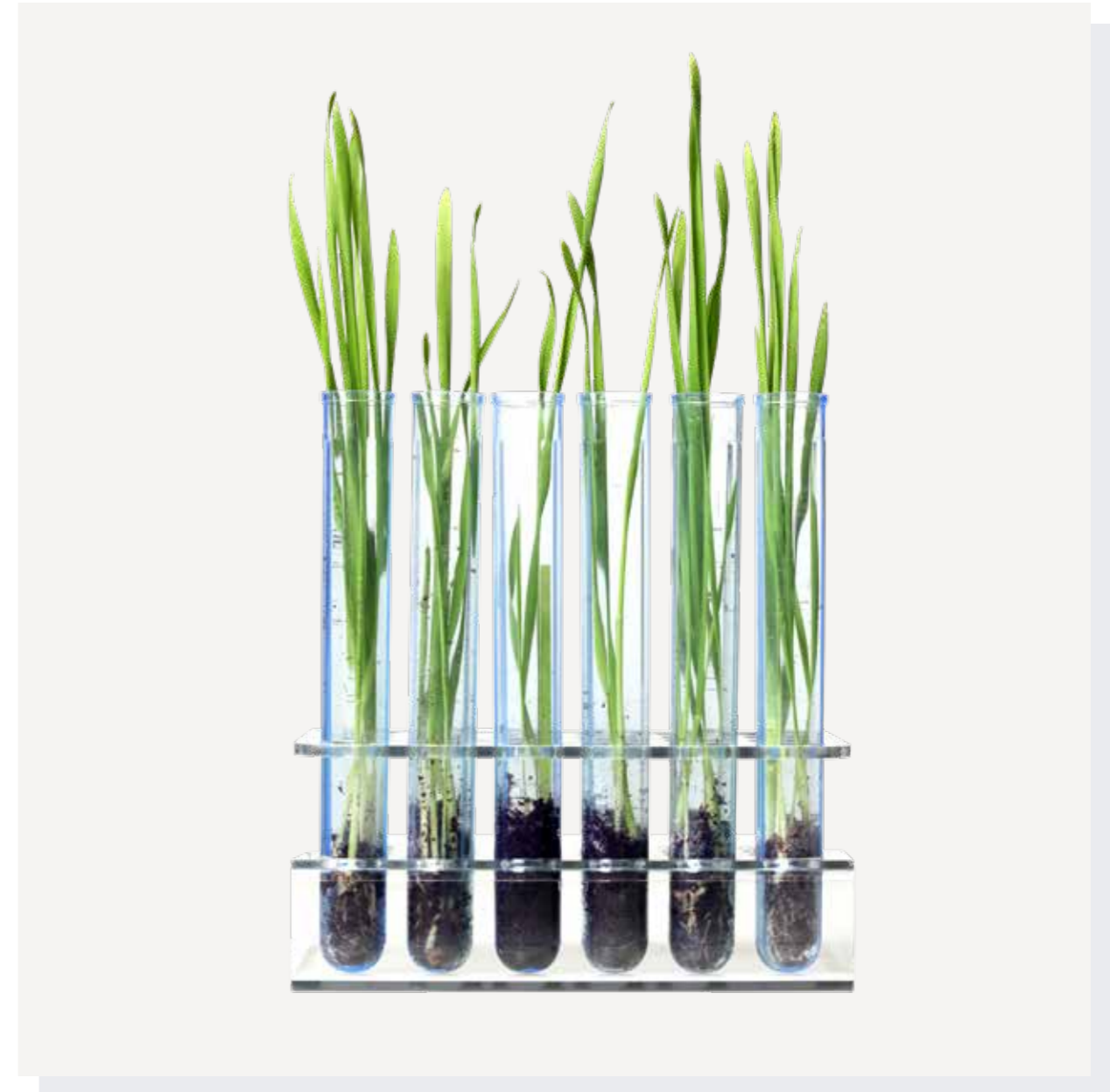
# WHERE SCIENCE SERVES NATURE

## A BROADER PERSPECTIVE

For years, Valagro has developed **innovative** and **effective solutions for plant nutrition and health** with passion, while respecting both people and the environment. The increasing demand for food and well-being for the world's population requires an effective response. Trusting in a return to nature is not a realistic alternative because it is not sufficient to meet global needs. On the other hand, relying excessively on chemistry is not a sustainable choice for the environment in the long term.

Aware of this challenge, VALAGRO believes it is possible to find a third way: to **meet the needs** of humankind using **fewer resources**, thanks to a new **conscience**, able to put science at the service of man through innovation and respect for nature.

Our challenge is to become a leading player in agricultural nutrition and biologicals - which includes biostimulants and biocontrol - by integrating and delivering advanced products and value-added tech-based services to farmers globally.







Ph. Vittorio Bellocchio / Italy

**The core challenge is to produce more with less. In the decades to come, the world's growers will need to cope with a harsher, less predictable climate and a growing scarcity of natural resources while meeting an ever increasing global demand for food.**

## Our vision is based on

### Environmental sustainability

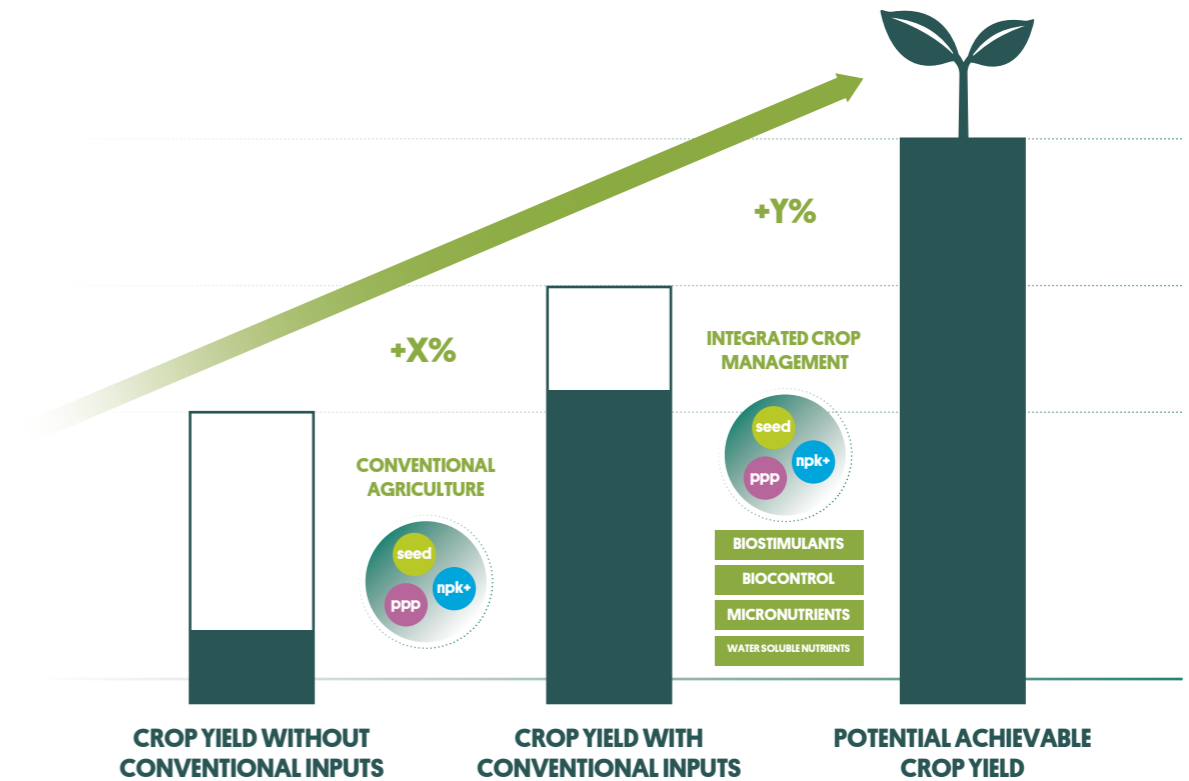
Ensure better harvests in terms of quality and quantity, using less soil, less water, fewer technical means. Overcome the challenge of providing more food for the world's needs by reducing the impact on the environment.

### Centrality of the customer

Understand the needs of our customers and help them get the most out of their crops, so that they meet the demands and expectations of the market and thus have a higher return on investment.

### Scientific innovation

Create an ever-broader and diversified range of solutions that combine efficiency and efficacy, sustainability and productivity.



# Valagro global history



- Valagro was founded in Italy by **Ottorino La Rocca & Giuseppe Natale**.
- The first biostimulant product is launched.



- Acquisition of **Pacific Growers** wholesale business lines.
- **GeaPower** is implemented to improve plant performance.



- New commercial subsidiary in **China**.



- The first commercial subsidiary is established in **Spain**.
- New commercial subsidiaries set up in **Greece, Mexico, Colombia** and **Brazil**.



- A site is purchased in **Brazil** for a new planned manufacturing facility.
- New commercial Subsidiary in **Turkey**.



- New production plant in **Brazil**.



- Acquisition of **Algea** in **Norway** and **Maxicrop** in **England**.
- New commercial subsidiary established in the **U.S.**
- Acquisition of **Samabiol** in **France**.



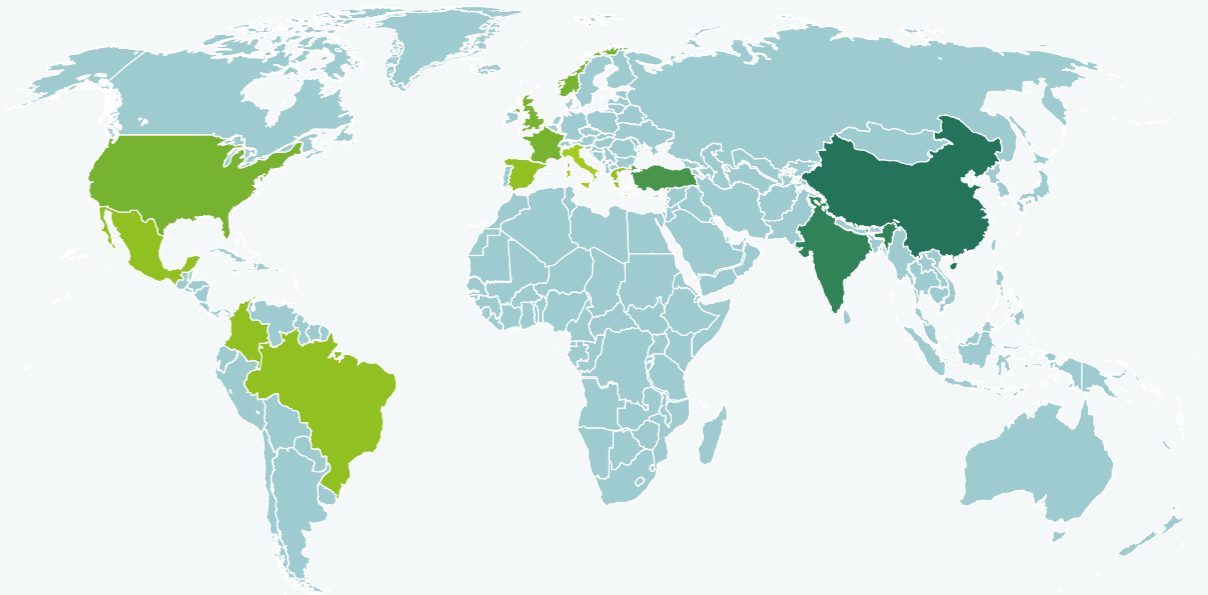
- Acquisition of the company **Sri Biotech Laboratories India**.



- Official launch of Valagro's project to Build a new plant in the **United States**.



With about 40 years of operational history, Valagro has pioneered the field of biostimulants.



**13** Subsidiaries around the world.

**8** Key manufacturing facilities.

**80+** Countries with distribution and commercial presence.

**600+** Employees around the world.



# GEAPOW TODAY FOR TOMORROW



Using science to harness the potential of nature with an eye toward environmental sustainability: this is the principle on which GeaPower is based. It is the **exclusive technology** platform developed by Valagro in order to turn potential active ingredients into high quality nutrient solutions. Thanks to GeaPower, we can offer solutions based on sustainable innovation that, by using the **most modern technologies**, borrow valuable active ingredients from nature and return them to nature itself to obtain **healthier, richer, better harvests**.

## GeaPower certifies an approach to excellence based on four fundamental concepts:



### In-depth knowledge of active ingredients and raw materials

- This enables Valagro to identify, characterize and preserve specific active ingredients that can achieve targeted physiological responses in plants.



### Proprietary extraction processes

- Customized extraction processes help maintain the correct ratio of each ingredient in complex natural mixtures.



### Advanced screening and investigation technologies

- Genomics, phenomics and other “omic” sciences allow Valagro to decipher the genetic and molecular triggers for specific physiological responses in plant systems.
- Screening of hundreds of samples per experiment.



### Proven ability to provide commercially viable solutions

- Extensive experience with field experiments.
- The commercial function and research function are closely integrated.
- This allows Valagro to fast-track product candidates with the best chance of attaining commercial viability.



# A NATURAL SYNERGY WITH OUR CUSTOMERS



Alongside the distinctive offer of solutions constructed around a continuous commitment to research and development, Valagro regards customer focus as a value to be implemented to the full. As such, it has decided to expand its offer by including highly innovative and **specialized services for its Standard, Silver, Gold and Platinum customers.**

## The Valagro Academy

Valagro Academy provides training sessions that involve the sales team at each Group subsidiary in order **to share information and updates** on the world of plant nutrition and biostimulants, along with specific sessions on products, local needs and the most appropriate solutions for them. In addition to the sales team of each subsidiary, Valagro customers can benefit from this **highly specialized knowledge** through **training sessions** based on specific needs and local experiences, and can be assisted in choosing the best solutions to be applied in the field.



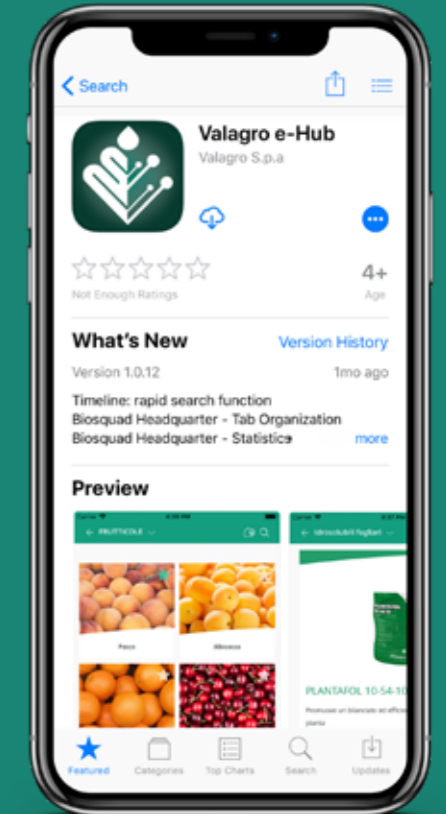
Be a part of Valagro's digital Community. Explore the brand-new app e-Hub. Join us here!

# E-HUB THE BRAND NEW APP VALAGRO®

e-Hub is the brand-new app designed by Valagro allowing the organization's innovation and knowledge into the hands of all users worldwide. The application is the digital path to communicate with our partners, customers, distributors and all people interested in biostimulants, fertilizers and AG world.

Valagro shares the best practices and support improved decision quality.

- Easy and real-time access.
- Multi-tools Platform providing different features just in 1 App.
- Direct contact with Valagro people and knowledge share.
- Always with you on your mobile, laptop and tablet.





## Valagro's path to drive up quality, sustainability and safety

### From environmental protection

1

At the end of the 1990s, Valagro began its course for total high quality, starting with the environment and ISO 14001.

Today, there is a dedicated staff that uses its expertise for the protection of the environment and for the improvement of quality and safety, inside and outside the company boundaries.

### To product quality

2

Involved since the foundation in pursuing the highest quality standards of products, in 2001 Valagro obtained ISO 9001 certification. Already structured and widely prepared for quality management, in a short time we implemented ISO 9001, predisposing the company also to the procedures for traceability.

### Health and safety

3

Worker safety has always been at the center of corporate strategies: over the years accidents have declined from an average of 8.1 from 2001-2003 to 1.3 from 2013-2015. Furthermore, the attention to safety has been improved by the continuous training of all the staff with about 4000 hours of lessons for 160 courses and 1400 people involved to date.

### Traceability

3

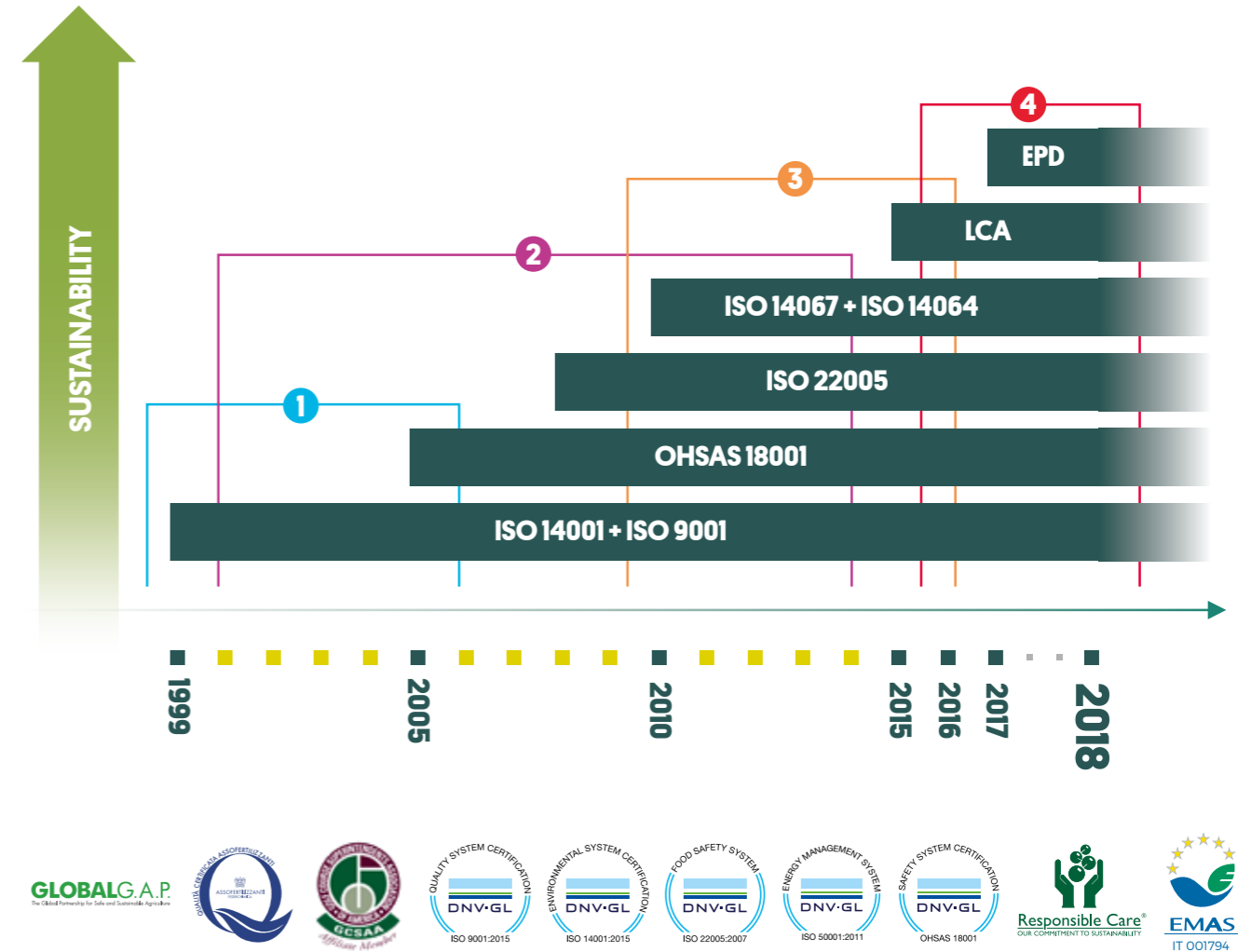
Always with a view to high, total quality, Valagro implements the tracing system to all its products. The role as a global partner in the challenges of modern agriculture has required this system to handle any difficulties in the cycle of the supply.

### Sustainability, life cycle and climate change

4

Valagro has spent increasing attention to the life cycle concept in the assessment of environmental impact of its products. Today, in the development of new production lines, we consider not only environmental impacts generated in company boundaries, but also, those deriving from raw materials and by the usage of our products on field. After completing the study of the Carbon Footprint for all its products, in 2014-15 Valagro obtained ISO 14067 certification for 4 products and in 2015 obtained ISO 14064 (Corporate Carbon Footprint)

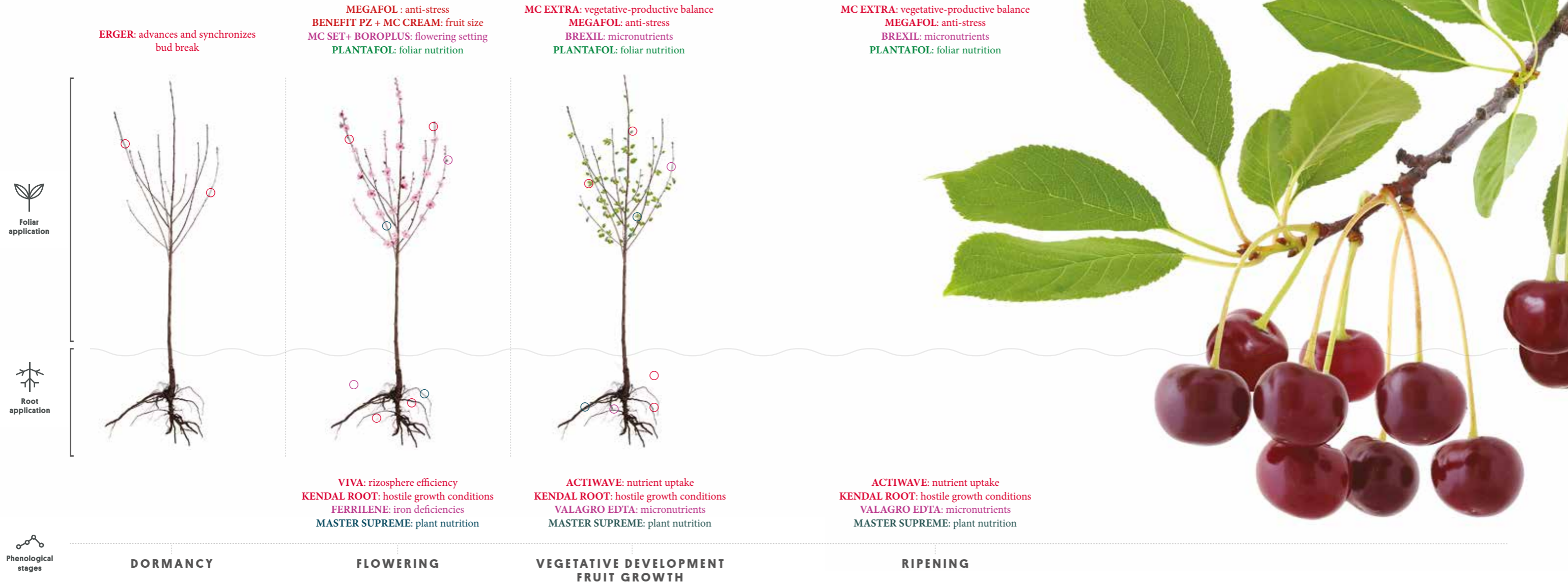
certification for emission from his headquarters. Today the company is engaged in the analysis of the life cycle of all its productions (Life Cycle Assessment) to arrive in the coming years to the EPD certification (Environmental Product Declaration) that defines and communicates to external stakeholders all the environmental performances of its products linked to the problem of climate change (CFP) and to environmental issues (reduction of the ozone layer, eutrophication of water, acid rain ... etc).



# ROW CROP SOLUTIONS

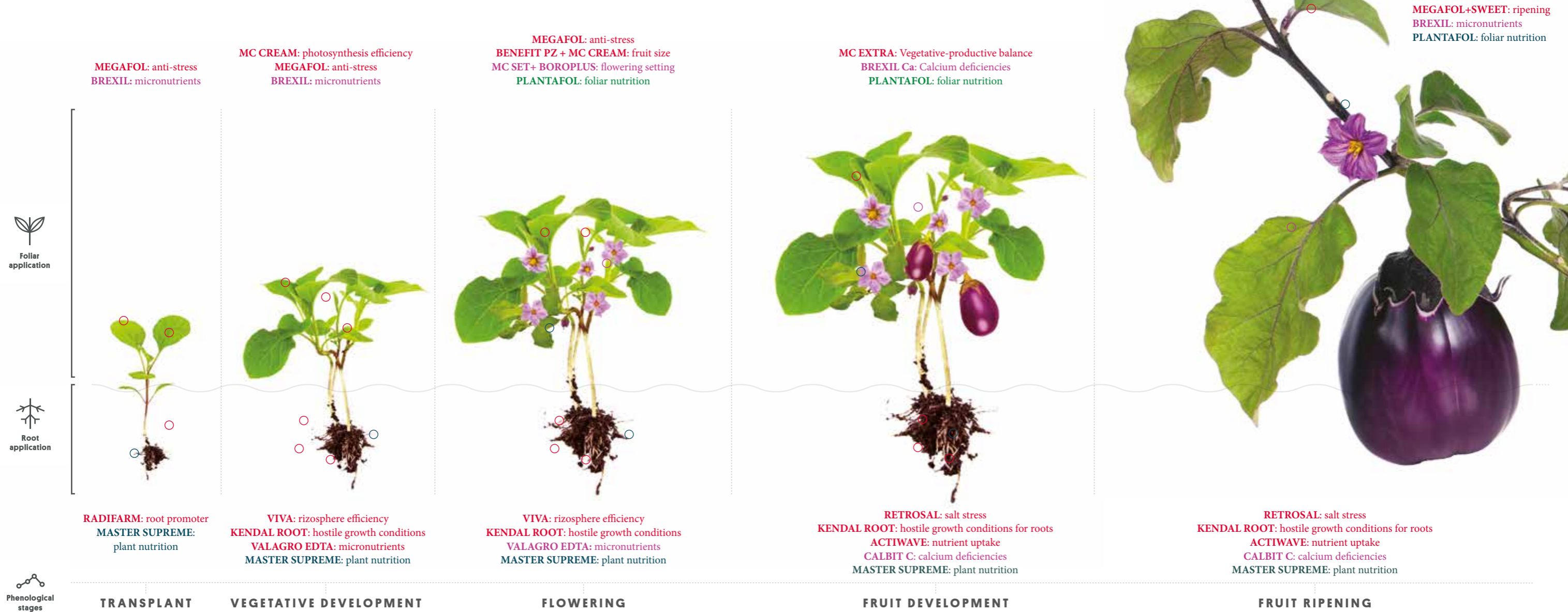


# ORCHARD SOLUTIONS





# VEGETABLE SOLUTIONS







# PLANT BIOSTIMULANTS

Our exclusive line of biostimulants gives farmers a line of products with active ingredients of purely natural origin, which stimulate the main physiological processes of the plant while promoting their growth and productivity.



Improved tolerance  
to abiotic stress **1**

Improved nutrient  
use efficiency **2**

**3** Increased crop  
quality

# ACTIWAVE

## increases the absorption of nutrients

Increases the plant's ability to absorb the nutritive elements in the soil. Optimizes mineral fertilization.

ACTIWAVE is extraordinarily unique and innovative for enhancing the absorption of nutrients in the soil and optimizes their use in the plant. The exclusive formula is protected by a European patent application.

### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Root application

ACTIWAVE FERTIGATION

ACTIWAVE G TOP DRESSING

CROP	PERIOD OF APPLICATION	DOSE
<p><b>ALL</b> all crops</p>	Applications during the crop cycle in presence of a well-developed root system	15-25 L/ha
<p>fruit crops</p>	1-2 applications from vegetative growth to fruit development	75-120 kg/ha
<p>vegetables</p>	2-3 applications from vegetative growth every 10-15 days	50-100 kg/ha
<p>row crops</p>	1-2 applications	75-120 kg/ha



## ACTIWAVE: phenomic evidence

Phenomic tests with ACTIWAVE were performed at Valagro @PHENOlab Research Center by using the Lemnatec Scanalyzer 3D digital measurement station.

TARGET: to evaluate the improvement in the digital biomass and root uptake in limiting growth conditions like the presence of hard water, after treating plants with ACTIWAVE, compared to untreated test.

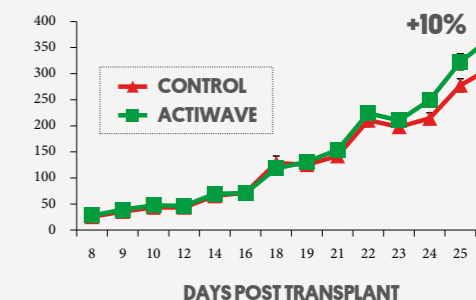
CROP: Tomato *cv.* Ikram;

TRIAL CONDITIONS: cylinders for phenomic analysis;

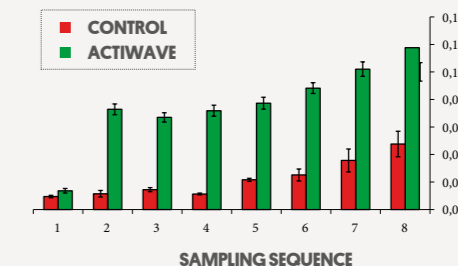
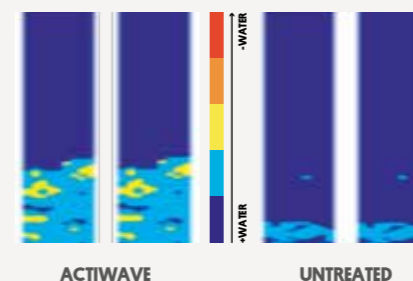
APPLICATIONS: 12 and 22 days post transplant.

### RESULTS

1. RGB (Red-Green-Blue): Digital Biomass



2. NIR (Near Infrared): Water Uptake Index



Plants treated with Actiwave have shown an increment in the digital biomass (+10%) compared to the untreated test. NIR results highlight an improved root uptake in the plants treated with Actiwave, as suggested by the decrease of water level in the cylinders, with reference to the water colour scale.





# BENEFIT PZ

## increases and standardizes fruit size

Increases and standardizes fruit size into larger size classes without altering the consistency and shelf life of fruits.

BENEFIT PZ is a natural product developed for increased weight and greater uniformity of fruits. If applied from the start of flowering, stimulates cell division and distension therefore increases the number and dimension of cells in each individual fruit.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP



fruit crops



vegetables (cucumber, zucchini, aubergine, tomato, pepper)



melon, watermelon

#### PERIOD OF APPLICATION

2-3 treatments every 5-7 days from first flowerings

applications starting from first flowering every 7-10 days, repeat on subsequent flowering

weekly treatments starting from first flowerings

#### DOSE

3-4 L/ha

3-4 L/ha

3-4 L/ha





# ERGER

## advances and synchronizes bud break

Advances and synchronizes bud break, achieving early and uniform ripening of fruits.

In areas where the necessary chilling requirements are not satisfied, for example due to a mild winter season, the application of ERGER allows the plant to start the metabolic processes that lead to the interruption of dormancy by advancing and synchronizing bud break.

ERGER must be associated with ACTIV ERGER to support the enhanced plant enzymatic activity.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Wood application

#### CROP



cherries



table grapes

#### PERIOD OF APPLICATION

apply 45 days ( $\pm 5$ ) before bud break. Wet the branches uniformly (10-15 hl of solution is recommended per hectare depending on the size of the plants). Note: mix 8 L of ACTIV ERGER with ERGER per hl of final solution. [final solution = 6 L of ERGER + 8 L of ACTIV ERGER + 86 L of WATER].

apply 60 days ( $\pm 5$ ) before bud break. Consider the anticipation of bud break due to possible covering. Wet the branches uniformly (4-6 hl of solution is recommended per hectare depending on the equipment used). Note: mix 16 L of ACTIV ERGER with ERGER per hl of final solution. [final solution = 6 L of ERGER + 16 L of ACTIV ERGER + 78 L of WATER].

#### DOSE

5-6 L/ha

6-7 L/ha

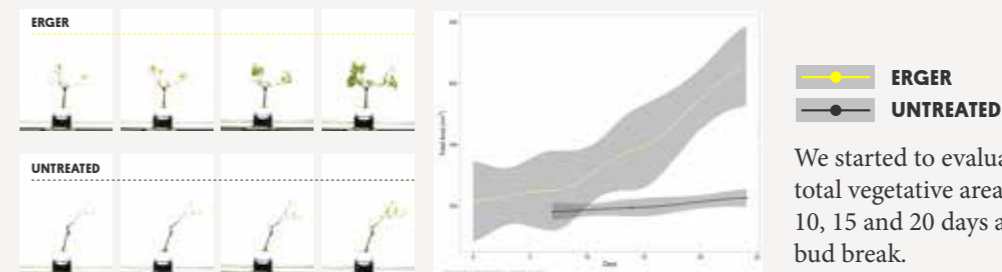
## ERGER: phenomics highlights the advance and synchronization of bud break

Phenomic tests with ERGER were performed at Valagro @PHENOlabor Research Center by using the Lemnatec Scanalyzer 3D digital measurement station.

CROP: table grape. VARIETY: victoria.

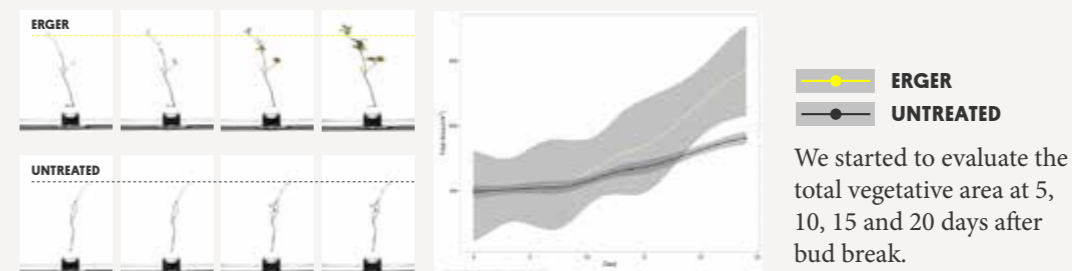
### RESULTS

TREATMENT	TIMING
ERGER 6% + ACTIV ERGER 16%	60 DAYS ( $\pm 5$ ) BEFORE BUD BREAK.
UNTREATED	



CROP: kiwi fruit\* VARIETY: hayward.

TREATMENT	TIMING
ERGER 6% + ACTIV ERGER 9%	50 DAYS ( $\pm 5$ ) BEFORE BUD BREAK.
UNTREATED	



\*the application of Erger on kiwi fruit is allowed only in Italy, Australia and New Zealand.





# KENDAL

## nourishes and strengthens the plant naturally

Helps plants to remain vigorous in hostile growth conditions. Allows a better yield in terms of quantity and quality.

KENDAL allows the entire plant system to be supported in the face of stress factors, promoting antioxidant function within the plant's cells.



### SIZE CHART

### DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION	DOSE	RECOMMANDATIONS
Foliar application	vegetables, fruit crops, flowers	applications every 7-10 days	1,5/3 L/ha	Copper based formulations can be applied on olives, grapes, potatoes and artichokes. In other crops, perform tests on selected varieties before extending the treatment. The product has an acid reaction. It is therefore recommended not to associate it with compounds with a strong alkaline reaction.
Fertigation	fruit crops and vegetables	applications every 7-10 days	7,5/10 L/ha	
Localised application	fruit crops and vegetables	apply approximately 10 L/plant of nutrient solution	3.5-4 L/ha	
	flowers	apply approximately 100-200 mL/plant of nutrient solution	300-400 ml/hl	Physical properties: refer to Safety Data Sheet



# KENDAL TE

## nourishes and strengthens the plant naturally

Helps plants to remain vigorous in hostile growth conditions. Enriched with Copper, Manganese and Zinc, it enables a greater yield and higher quality.

KENDAL TE is made up of a pool of biomolecules which helps plants to maintain their vigour in hostile growth conditions. The presence of Cu, Mn, Zn helps to meet the requirement of micronutrients.



### SIZE CHART

### DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION	DOSE	RECOMMANDATIONS
Foliar application	fruit crops	applications every 7-10 days	3-3.5 L/ha	Do not use KENDAL TE on species/varieties at risk of rust. Do not exceed 200 ml/hl in greenhouses. Always perform preliminary phytotoxicity tests.
	vegetables	applications every 7-10 days	2-3 L/ha	









# KENDAL ROOT

nourishes and strengthens the plant naturally

Ensures a correct development of root system in every hostile growth condition.

KENDAL ROOT works directly on the damaged root system, promoting a rapid vegetative restarting, an increased physical resistance of the roots and stimulating the growth of new ones.



## SIZE CHART



## DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION
Fertigation	all crops	5-20 L/ha depending on the severity of root damage and frequency of application*
Overhead application**	vegetables, row crops	5-20 L/ha depending on the severity of root damage and frequency of application*

\* 5 L/ha for limited root damage or for applications every 7 days; 20 L/ha in case of high root damage or for applications every 20 days.

\*\* Use an adequate volume of water to wash the leaf system so that the product reaches the soil and the roots

## KENDAL ROOT: gets to the root of the problem!

In recent years we focused our attention on «Soil Solutions». We have been travelling around the world to stimulate and share knowledge about the importance of Biostimulants applied for soil application, supporting farmers in learning the importance of preserving soil and boost production through the application of these nutritional specialties.

Transplant stress overcoming, root uptaking, rhizosphere efficacy improvement, vegetative productive balance are some of the topics discussed.

A special focus has been done on **KENDAL ROOT**, a specific biostimulant that works directly on the **root system**, ensuring **correct development** and **production enhancement** in **every hostile growth condition** (mechanical damages, thermal root shock, difficult soil conditions, presence of soil borne diseases).







Ph. Chad Lessard / U.S.A.





# MC CREAM

increases **photosynthetic activity** and production

Based on *Ascophyllum nodosum* extracts.

MC CREAM is a cream formulation with a high concentration of active phytoingredients extracted from the algae *Ascophyllum nodosum*, combined and processed to stimulate the plant growth by increasing the metabolic and photosynthetic activity.



**SIZE CHART**



**DIRECTION FOR USE**

APPLICATION METHOD



Foliar application

CROP



orchards

PERIOD OF APPLICATION

2-3 applications during flowering until fruit set

DOSE

2-4 L/ha



horticulture

2-3 applications from flowering

2-4 L/ha



strawberry

2-3 applications at 7-10 days interval from flowering

2-3 L/ha



potato

1-2 applications at tuber formation

2-3 L/ha



ornamentals

2-3 applications during early stages of development

200 ml / 100 L

# MC EXTRA

improves **vegetative-productive balance**

Based on *Ascophyllum nodosum* extracts.

MC EXTRA is a readily and totally soluble concentrate in microflakes formulation based on active biomolecules extracted from the algae *Ascophyllum nodosum*. The biologically active ingredients ensure a quantitative increase in production while maintaining optimal, balanced production.



**SIZE CHART**



**DIRECTION FOR USE**

APPLICATION METHOD



Foliar application

CROP



orchards

PERIOD OF APPLICATION

2-3 applications during flowering until fruit set

DOSE

0,5-1 kg/ha



horticulture

2-3 applications during early stages of development

0,5-1 kg/ha



strawberry

2 applications at vegetative development

0,5-1 kg/ha



ornamentals

2-3 applications during early stages of development

0,5-1 kg/ha

# MC SET

## stimulates flowering and fruit setting

Based on *Ascophyllum nodosum* extracts.

MC SET is a formulation based on active phytoingredients extracted from the algae *Ascophyllum nodosum*.

The complex of biomolecules within the product is enriched with a mineral fraction of Boron and Zinc which gives the product a considerable capacity to stimulate the flowering and fruit setting processes.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP



#### PERIOD OF APPLICATION

Flowering: 2 applications at 5-7 days interval

Pre-flowering

Pre-flowering: 2 applications at 7-10 days interval

#### DOSE

1-2 L/ha 150-200 ml/ha

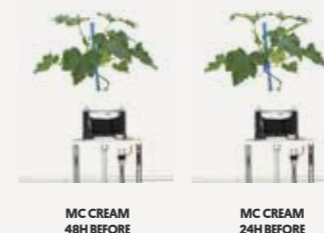
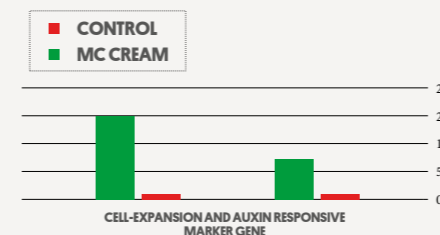
1-2 L/ha 150-200 ml/ha

1-2 L/ha 150-200 ml/ha

## MC LINE: a biological characterization

The adoption of **innovative investigation techniques** (“omic” sciences) provides a quick and reliable **biological characterization** of the effect of active compounds.

The aim is to understand how substances interact with crop physiology. Here is a focus on MC Cream, where our omic analyses demonstrated that the product **enhances photosynthetic activity and growth**, and how it does it.



### Genomics

MC CREAM induced the expression of specific genes involved in photosynthesis and growth by: **20 fold** of a light-responsive marker gene linked to response to high light intensity, and **7 fold** of another marker gene involved in cell-expansion-proliferation and response to auxin stimulus.

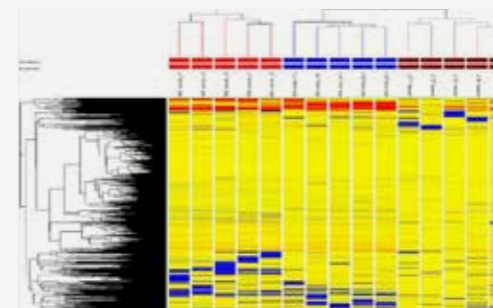
### Phenomics

Treatments with MC CREAM 24h or 48h before inducing stress from high light intensity **protect the photosystems** and consequently preserve gas exchange, normal transpiration and growth.

### Metabolomics

MC CREAM treated plants are healthier in connection with stress situations. In fact, it has been observed:

- **Decrease in stress-related compounds** (terpenes, terpenoid alkaloids, inulin, glucosinolates, flavonoids, homocysteine ad homoserine, as well as phytoalexins).
- **Increased porphyrin**, suggesting that photosynthetic capacity was improved.
- **Increase in methionine biosynthetic intermediates**, likely connected to improved assimilation of nutrients or chlorophyll and membrane synthesis, cell division, synthesis of cell wall.



# MEGAFOL

## anti-stress and growth activator

Promotes vegetative growth in normal conditions as well as during environmental stresses. Stimulates plant growth and improves effectiveness of treatments.

MEGAFOL is a natural biostimulant that contains a complex of selected vegetal extracts derived from special plants. MEGAFOL, applied regularly, promotes plant growth; when applied in case of abiotic stresses, its synergistic action of different active ingredients, allows the plants to quickly overcome the stress. MEGAFOL is also a carrier of products in foliar applications.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP

- fruit crops
- vegetables
- row crops

#### PERIOD OF APPLICATION

pre-flowering, post-setting, fruit development and in all cases of plant growth stop

in open field and greenhouses after transplant every 10-15 days

1-2 applications during growth cycle in case of abiotic stresses

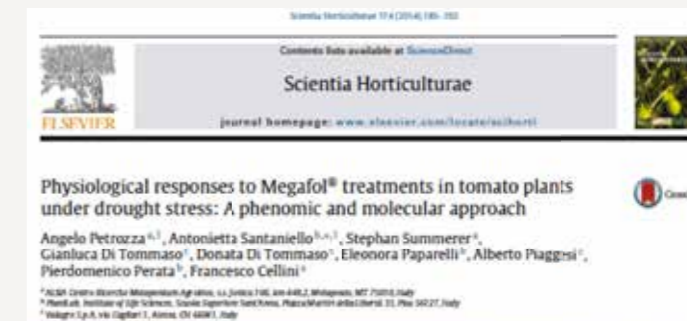
#### DOSE

- 2-3 L/ha
- 2-3 L/ha
- 2-3 L/ha
- 150 ml/hl
- 250 ml/hl



## MEGAFOL: focus about anti-stress activity

Physiological responses to MEGAFOL treatments in tomato plants under drought stress: a phenomic and molecular approach.



The results showed that drought-stressed plants treated with MEGAFOL were healthier in terms of the biomass produced and chlorophyll fluorescence, thus highlighting the higher tolerance to stress of the treated plants.

The effects of MEGAFOL were also studied at a molecular level by analysing the induction of genes typically involved in drought stress responses. Our results demonstrate the efficacy of MEGAFOL to reduce drought-stress related damage in tomato plants.

Stress induction

**MEGAFOL**  
1 application at 3 ml/l



Untreated



**Experiment performed on tomato plants (cv. "IKRAM") brought to the wilting point.**



# RADIFARM

## root promoter reduces transplant stress

Ensures full attachment of transplanted or replanted plants.  
Reduces the time to overcome post transplant stress.

RADIFARM was developed for applications during the transplant phase and/or in the early stages of development of various crops. It promotes the formation of rich and advanced root systems by extending the existing roots and issuing new absorbent roots.



### SIZE CHART

### DIRECTION FOR USE

#### APPLICATION METHOD



Fertigation

#### CROP



vegetables with fertigation system



vegetables without fertigation system



fruit crops



ornamental and potted plants

#### PERIOD OF APPLICATION

At transplant and after 7 days

At transplant and after 7 days

At transplant, after 7 days or at the beginning of vegetative restarting

2-3 treatments every 7 days after transplant

#### DOSE

150 - 200 L/ha

150 - 200 L/ha

5 L/ha

1.5-2 L/m<sup>3</sup> of water



## RADIFARM: microphenotyping test

Bioassay GUS on *Arabidopsis thaliana*. Using the GUS reporter method on Arabidopsis plants, we provided evidence that RADIFARM biomolecules modulate the concentration and localization of auxins which could account for the enhanced lateral root formation.



RADIFARM



UNREATED

Plant roots treated with RADIFARM (left picture) show moderate to intense blue coloration compared to untreated control (right). Blue color and its intensity identify the auxin signaling activation; higher perception of auxin signalling results in a more intense coloration. The blue distribution can be seen in tissues where signaling is activated.



# RETROSAL

## improves nutrient availability under salinity stress

Promotes and controls plant growth in saline soils.

RETROSAL improves plant growth on saline soils. The enriched formulation of RETROSAL, thanks to the innovative geapower technology (GEA216), is the right solution to keep plants growing vigorously and to ensure high quality and yields under high salinity soil conditions by restoring plant health and improving water retention.



### RETROSAL: how does it work in salt conditions

Accumulation of salts in soil is one of the most important worldwide problem that induces crop losses. Soil salinization, arising from either natural or human-induced causes, led to an increase in concentration of dissolved salts in the soil profile to a level that impairs food production, environmental health and socio-economic wellbeing (Ondrasek et al., 2009; Rengasamy, 2006).

The application of RETROSAL under salinity stress activates genes/pathways involved in osmotic adjustment and synthesis of compatible solutes to tolerate salinity stress condition and confer protective properties. In addition, it induces the biosynthesis of compatible osmolytes that can afford protection of cells against a variety of salinity stress, induces the biosynthesis of physical protective barriers that reduce accumulation of toxic compound, and finally improves energy pathways to support plant growth under salinity conditions.

#### SIZE CHART



#### DIRECTION FOR USE

##### APPLICATION METHOD



Fertigation

##### CROP

ALL all crops

ALL all crops

##### PERIOD OF APPLICATION

clay soils - during all crop cycle

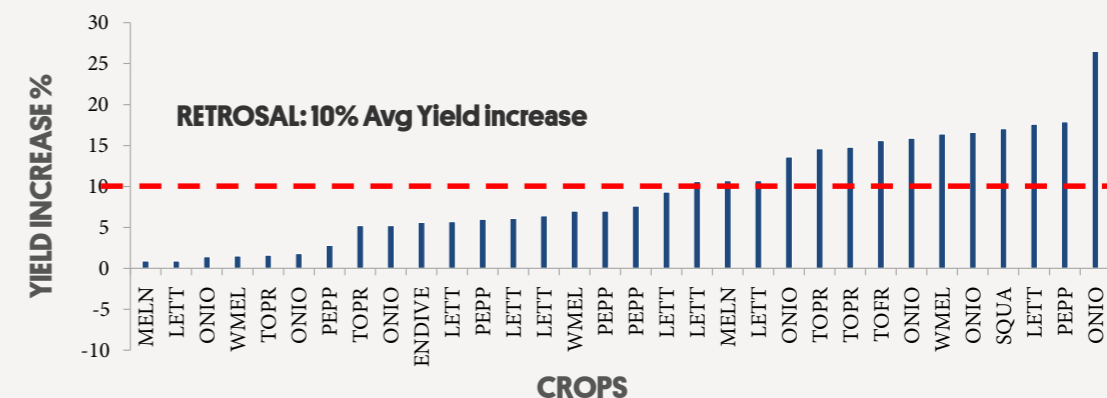
sandy soils - during all crop cycle

##### DOSE

20-25 L/ha

10-15 L/ha

#### RETROSAL 20 L/ha - % yield vs UTC



RETROSAL worldwide trials on vegetables under salinity stress condition.

# SWEET

## ripening promoter

Increases sugar concentration.

SWEET, is a biostimulant that promotes the sugar production and it accelerates the biochemical processes of ripening. To improve the effect of SWEET is recommended to use it mixed with MEGAFOL to take advantage of synergies between the two products.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD

#### CROP

#### PERIOD OF APPLICATION

#### DOSE



citrus

at the end of fruit enlargement  
at the beginning of fruit ripening

3-4  
L/ha



apple, pear, peach, apricot,  
cherry, plum, nectarine

pre-veraison; veraison

2.5-3  
L/ha



wine grape, table grape

pre-veraison; veraison

2.5-3  
L/ha



tomato, pepper, aubergine

pre-veraison application every 10-15 days

1.5-2.5  
L/ha



melon, watermelon

from fruit development every 10-15 days

2-2.5  
L/ha



strawberry

from whitening of fruits every 8-10 days

2.5-3  
L/ha



sugarbeet

2 treatments during root growth

2.5  
L/ha



Foliar  
application







PLANT BIOSTIMULANTS

# TALETE

## increases crop water productivity

Increases the economical and biophysical gain per unit of water used in crop production.

Sustainable production through a correct and careful water management. A highly topical issue of major importance which blends into the unique and new revolutionary TALETE. Biomolecules carefully extracted from vegetal raw materials and processed according to GeaPower technology, work directly on plant physiology, helping crops to increase water productivity both in condition of standard water availability and permanent or temporary water scarcity.

### SIZE CHART







# VITASEVE

## stimulates cambium activity

Plant sap circulation optimization and improved lignification.

VITASEVE is a biostimulant, coming from exclusive GeaPower technology (GEA 841), which can stimulate cambium activity. Used consistently for each crop cycle, VITASEVE promotes the production of new wood and optimizes sap circulation in vines and tree crops. VITASEVE is used for foliar application mixed with other products.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP



grape



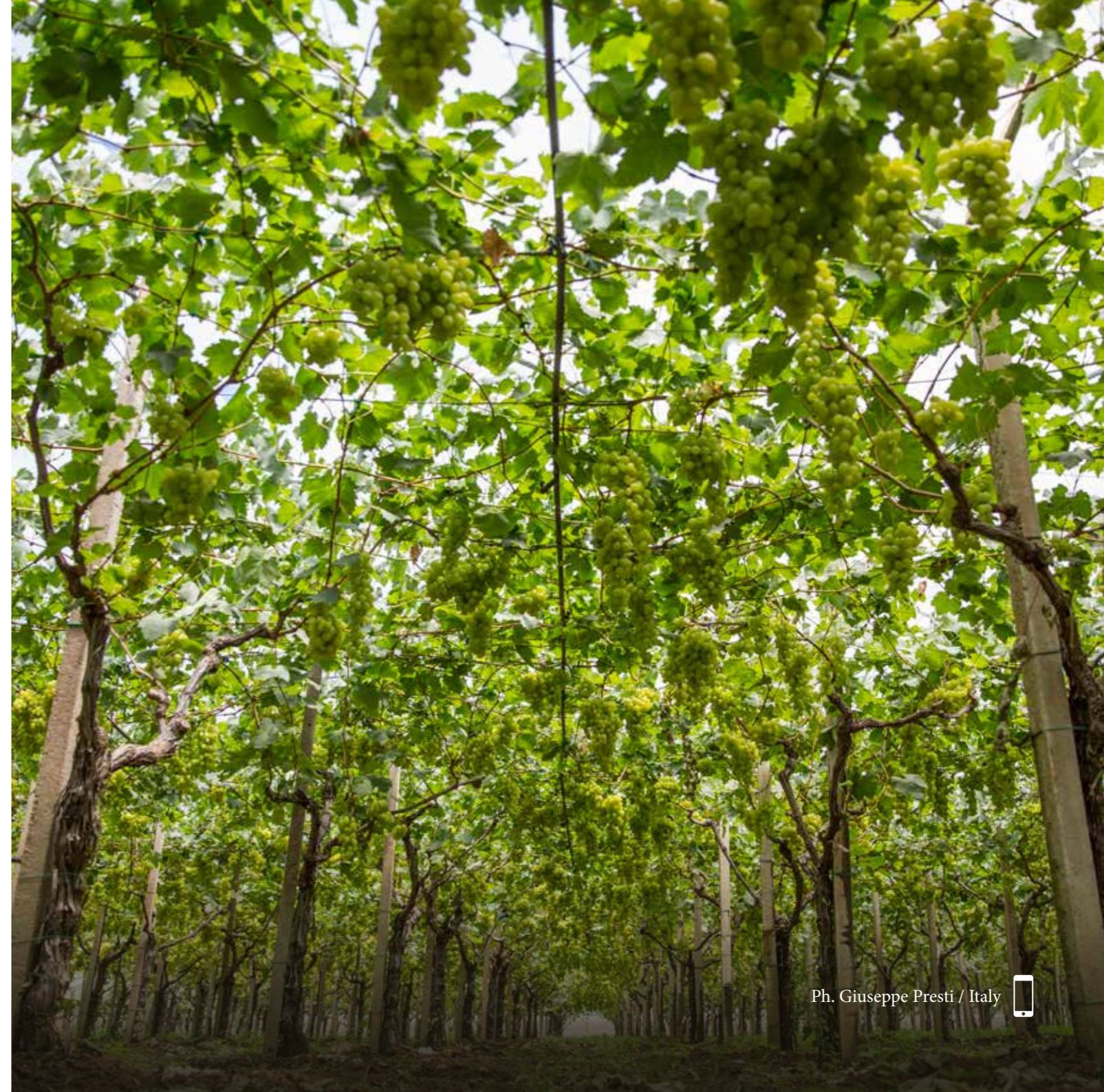
fruit crops

#### PERIOD OF APPLICATION

2 applications, the first one during vegetative development, the second one in pre-harvest.

during post-setting.

#### DOSE







# VIVA

## improves the rhizosphere efficiency and the vegetative productive balance

Rhizosphere improver. It increases yield.

VIVA revitalizes and improves the structure and biochemical activity of the rhizosphere, promoting plant growth and ensuring the correct balance between the vegetative and productive part of the plant.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Fertigation

#### CROP

#### PERIOD OF APPLICATION

#### DOSE

	fruit crops	from vegetative regrowth until post-fruit setting with 2-3 applications	20-30 L/ha
	strawberry	post-transplant applications, plant regrowth and post-fruit setting	2-3 L/1000 m <sup>2</sup>
	vegetables (tomato, courgette, melon, aubergine, capsicum, cucumber)	post-transplant applications, vegetative growth and post-fruit setting each 10-15 days	2-3 L/1000 m <sup>2</sup>
	flower crops	from post-transplant up to end of crop cycle each 15-20 days	2-4 L/1000m <sup>2</sup>
	row crops	localized during sowing	10-20 L/ha



## VIVA: microphenotyping test. A phenotyping platform for chemical biology.

The **microphenotyping** is a novel technique that allows detailed phenotyping of whole *Arabidopsis thaliana* seedlings to evaluate **plant response to phytoactive compounds**. This system is based in a novel seedling growth device called “Phytostrips”, that assembled with standard 96-well plates, making possible to conduct detailed studies of **changes in plant development**, especially in **root morphology** and **root system architecture**.

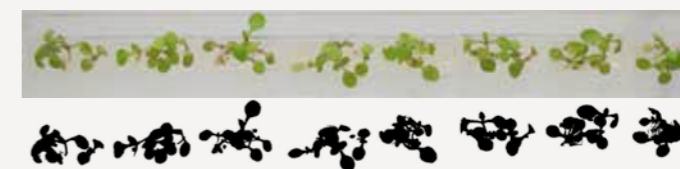
Phytostrips are filled with nutrient gel and seeds are sown on the surface. After seed germination, treatments are applied by adding the test compounds to the liquid nutrient medium that diffuse through the gel to be absorbed by the growing roots. Root growth can be followed by imaging through the transparent walls of phytostrips and shoot development by imaging from above. (Burrell *et al.* 2017)

### VIVA : effect on biomass and projected leaf area

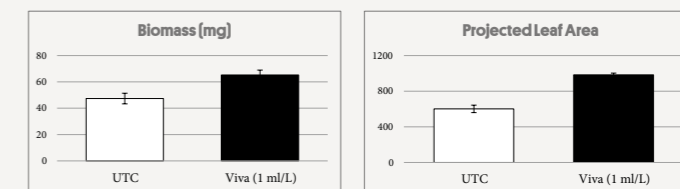
Untreated



VIVA (1ml/L)



VIVA specifically induce an **increase in biomass and projected leaf area** respectively of **38%** and **64%**, as highlighted in the above pictures and diagrams.





# YIELDON

highest crop productivity,  
highest return for farmers

Valagro switches “ON” row crops profitability.

The most innovative technologies such as Genomics, Phenomics and Next Generation Sequencing are concentrated in the revolutionary YieldON: a biostimulant able to increase row crops productivity and return for farmers. More than 65% of the composition on a dry base, is characterized by a selection of extracts from three distinct families of plants and seaweeds enriched with trace elements Mn, Zn and Mo.



SIZE CHART 20 lt 1000 lt

## DIRECTION FOR USE

### APPLICATION METHOD



Foliar application

CROP	PERIOD OF APPLICATION	DOSE
wheat	1 application at flag leaf growth stage	2 L/ha
soybean	2 applications: the 1st at Vn/R1 growth stage, the 2nd at R3/R5 growth stage	1-2 L/ha
corn	1 application At V4-V6 growth stage	2 L/ha
rice	2 applications: the 1st at the beginning of booting, the 2nd at heading growth stage	1-2 L/ha
cotton, oil seed rape (canola)	2 applications. The first mixed with pesticide/herbicide treatment, the 2 <sup>o</sup> at the beginning of flowering	1-2 L/ha

## YIELDON: the innovation way to get it

We carried out an integrated “omics & field-trials” approach to characterize the physiological effect of YieldON.

### GENOMICS



### PHENOMICS



### NEXT GENERATION SEQUENCING



### EXPERIMENTAL FIELD TRIALS



High efficiency phenotyping analysis: plant growth dynamics of soybean plants untreated and treated with YieldON



Several experimental trials demonstrate the effectiveness of the product in the field.

### Brasilian case study

EXPERIMENTAL CENTERS	CROPS	PRODUCTIVITY INCREASED BY YIELDON VS STANDARD
RIO VERDE UNIVERSITY	SOYBEAN (VAR. 7338)	258 KG/HA
EXPERIMENTAL STATION	SOYBEAN (VAR. 7338)	480 KG/HA
EXPERIMENTAL STATION	SOYBEAN (VAR. IPRO)	276 KG/HA
RIO VERDE UNIVERSITY	CORN (VAR. 3646 PIONEER)	1404 KG/HA
CERES EXPERIMENTAL STATION	CORN (VAR. RB 9110 RPO)	448,8 KG/HA
CERES EXPERIMENTAL STATION	COTTON (VAR.FIBERMAX 980 GLT)	444 KG/HA

AVERAGE YIELD INCREASE BY 13%

+ 9 sacs/ha\* avg



\* in Brazil the yield is evaluated in sacs per hectare

Calculate with ROI calculator tool present in our Valagro Website [www.valagro.com/en/yieldon/](http://www.valagro.com/en/yieldon/) the Return On Investment you can get thanks to YieldON



# MICRONUTRIENTS

Valagro developed specific formulation based on micronutrients able to supply nutrients very fast and with low environmental impact. Micronutrients promote an healthy and strong plant growth.

Complete plant nutrition **1**

Prevent or cure micronutrient deficiencies **2**

Improve crop quality **3**



# BREXIL LINE

## cure and prevention of micronutrient deficiencies

Mixable with the most common pesticides, BREXIL is a line of micronutrients complexed with LSA (Ammonium Lignin Sulphonate) effective to prevent or cure micronutrient deficiency. BREXIL has an high complexing capacity and good affinity with the vegetal tissues. BREXIL guarantees a faster and safer absorption and translocation of micronutrients through the leaf surface.



### SIZE CHART



### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP



fruit crops



vegetables



row crops



ornamentals

#### PERIOD OF APPLICATION

2-3 applications

2-3 applications

1-2 applications

2-3 applications

#### DOSE

2-4 kg/ha

1-3 kg/ha

1-3 kg/ha

100-300 g/hl

## LSA: the benefits of the BREXIL LINE

The use of micronutrients based products made up of salts or chelates with synthetic agents can cause problems of limited penetration, leaching and reduced selectivity.

The fast and complete water solubility of BREXIL's microgranular formulation and the complexing action of LSA on metals, guarantee a faster and safer absorption of micronutrients through the leaf surface without leaving residues compared with product based on salts or chelates.

### Benchmark MICRONUTRIENTS based products

Product Type	Penetration	Leaching	Phytotoxicity	Mixability
SALTS [ZnSO <sub>4</sub> . CaCl <sub>2</sub> ]	Medium leaf penetration	Easily leached	Risk of phytotoxicity	
SALT + EDTA (physical edta mixture)	It is not a true chelate	High risk of phytotoxicity	Difficulty mixing with pesticides	
SALT + EDTA (edta chemical reaction)	It is a true chelate	Medium leaf penetration efficiency	Risk of phytotoxicity	
SALT + AMINO ACIDS (physical mixture)	It is only a mixture. It is not a chelated based products			
SALT + LSA (controlled chemical reaction)	Excellent penetration	Fast absorption	No risk of phytotoxicity	Mixable with the most common pesticides

### Focus on LSA

LSA (Ammonium Lignin Sulphonate) is a complexing agent derived from lignin. Lignin in wood is mainly composed of combination of three basic elements (alcohols, also called monolignols that can be considered like "bricks"). Because lignin can differ according trees considered, the quality of extracted LSA is influenced by the properties of lignin. The ratio between the three elements in the lignin molecule is important in influencing LSA quality in complexing capacity and the release of micronutrients within the tissues.

Valagro's technology selects the most appropriate plant species and the most innovative extraction methods in order to obtain a lignin with an optimised ratio of the three elements (monolignols). This translates into a high complexing capacity of micronutrients and the natural selectivity and facility of penetration within the plant tissues which are a feature of the products in the BREXIL line.



# BOROPLUS

## cure and prevention of boron deficiencies

Effective in the prevention of Boron deficiency. BOROPLUS can be mixed with the more common foliar applied products. BOROPLUS contains boron complexed with ethanolamine and the liquid formulation allow perfect uniformity of distribution of the product, for fertigation or foliar application. BOROPLUS improves flowering and fruit setting optimizing the yield

### SIZE CHART



### DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION	DOSE
Foliar application	fruit crops	2 applications at flowering end fruit setting	1-2 L/ha
	vegetables	application at flowering and fruit setting	1-2 L/ha
	row crops	during crop cycle	1-2 L/ha
	ornamentals	2-3 applications	100-200 ml/ha
Fertigation	fruit crops	during crop cycle	4-6 L/ha per application
	ALL Vegetables & flowers	during crop cycle	3-5 L/ha per application

# CALBIT C

## cure and prevention calcium deficiencies

CALBIT C promotes rapid translocation of calcium in fruits and flowers. Mixable with the most common pesticides CALBIT C contains calcium complexed with LSA, specific for the prevention and treatment of deficiencies on fruits and leaves. CALBIT C increases fruit firmness and, consequently, longer shelf life. CALBIT C can be used for fertigation as well as for foliar application.

### SIZE CHART



### DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION	DOSE
Foliar application	fruit crops	application every 7-10 days from flowering to fruit harvest	2-3 L/ha
	vegetables	application every 7-10 days from flowering to fruit harvest	2-3 L/ha
	ornamentals & leafy vegetables	2-3 applications	250-350 ml/ha
	ALL all crop	during crop cycle	10-30 L/ha per application
Fertigation			

# FERRILENE LINE

## cure and prevention of iron deficiencies


FERRILENE is a complete range of Iron chelated products able to supply iron, for all crops, with high agronomic efficiency in all types of soils. FERRILENE line contains iron chelated with EDDHSA and/or EDDHA, in soluble microgranules, that are produced directly in Valagro plant according the highest qualitative standard of production.



### SIZE CHART



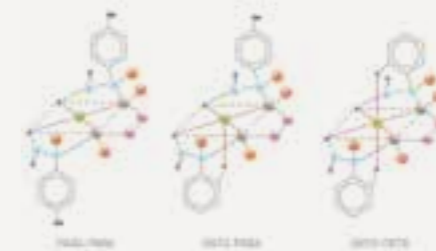
### DIRECTION FOR USE

APPLICATION METHOD	pomaceus kg/ha	drupaceus kg/ha	strawberry kg/ha	citrus kg/ha	table grape kg/ha	kiwi fruit kg/ha	vegetables and row crops kg/ha	flower crops kg/ha	potted plants g/pianta
 Fertigation	<b>FERRILENE 4.8</b>	10-30	10-30	5-15	10-30	10-30	5-15	5-15	0.5-2
	<b>FERRILENE TRIUM</b>	10-30	10-30	5-15	10-30	10-30	5-15	5-15	0.5-2
	<b>FERRILENE</b>	10-30	10-30	5-15	10-30	10-30	5-15	5-15	0.5-2

## FERRILENE LINE: our Iron chelate products. A solution for every crop in every soil conditions

### Iron chelating agents

EDDHA is a chelating molecule that forms a number of coordination bonds with iron between 4 (para-para isomer) and 6 (ortho-ortho isomer).



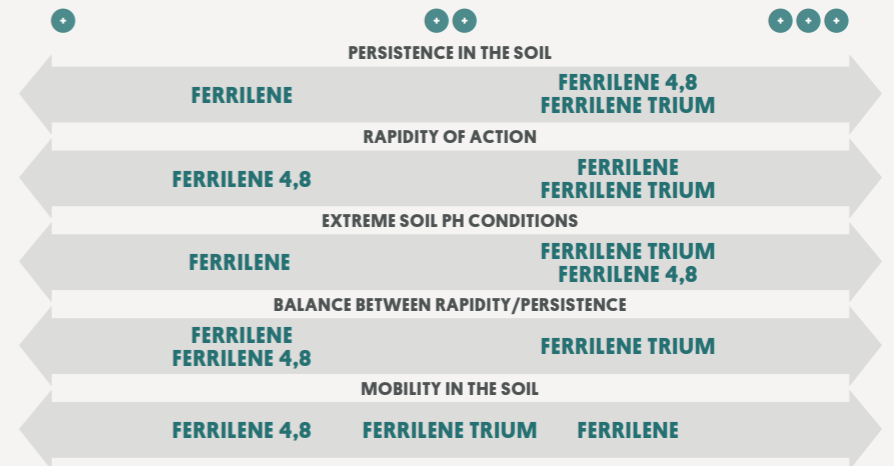
EDDHSA differs from the EDDHA molecule for the presence of the sulphonic group in the para-carbon position.



### Iron chelates stability

Iron availability in the soil is not depending only by the pH. Other factors influence the potential efficacy of Fe chelates to correct chlorosis on crops in alkaline and calcareous soils. These factors are related to the type chelating agent and environmental conditions. So, according to the soil / crop / variety / crop management, is important to define the right product to use.

### Iron chelates effectiveness





# GLIMO

## more energy for your plants

GLIMO is a new generation of nutritional product. The innovative formulation developed by Valagro is powered by the Geapower technology (GEA075). GLIMO is a mixture of fully chelated micronutrients combined with a bio-nutritional active ingredients. The synergic action between micronutrients and these specific active ingredients in the formulation, allows the plant to grow better.



5 kg









### SIZE CHART

### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

CROP	PERIOD OF APPLICATION	DOSE
 soybean	Post-emergence (2 to 6 trifoliolate leaves) Glyphosate application	 0,5-1 kg/ha (½ to 1 lb/acre) repeated as necessary
 corn	Post-emergence - Glyphosate application (V2 to v6)	 0,5-1 kg/ha (½ to 1 lb/acre) repeated as necessary
 cotton	Pin head square to early bloom	 0,5-1 kg/ha (½ to 1 lb/acre) repeated as necessary
 OTHER other crops	During vegetative growth	 0,5-1 kg/ha (½ to 1 lb/acre) repeated as necessary





# HIDROMIX S

## cure and prevention of micronutrients deficiencies

HIDROMIX S is a mixture of chelated trace elements expressly designed for use in soilless or open field crops. The trace elements are present according specific ratios between micronutrient in order to fulfill the needs of consumption of the main vegetables crops.



SIZE CHART



DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION	DOSE
Foliar application	grapes, kiwifruit, citrus, pome fruit	applications every 15-20 days starting from the first appearance of deficiency symptoms	80-100 g/hl
	stone fruit, vegetables (tomato, capsicum, melon and watermelon)	applications every 15-20 days starting from the first appearance of deficiency symptoms	50-80 g/hl
Fertigation	ALL all crops	preventive treatments	3-6 kg/ha
	ALL all crops	curative treatments	10-30 kg/ha
Hydroponic soilless crop	vegetable and flower crops	during all crop cycle	20-50 g/m <sup>3</sup> of water

# VALAGRO EDTA

## cure and prevention micronutrients deficiencies

VALAGRO EDTA is a complete range of single or blend trace elements chelated with EDTA. The presence of trace elements in chelated form and the soluble microgranule formulas make VALAGRO® EDTA specific products for the prevention and the cure of micronutrient deficiencies. VALAGRO EDTA can be used with foliar application or fertigation.



SIZE CHART



DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION	DOSE
Foliar application	grapes, kiwifruit, citrus, pome fruit	applications every 10-15 days starting from the first appearance of micro deficiencies	80-100 g/hl
	stone fruit, vegetables (tomato, pepper, melon and watermelon)	applications every 10-15 days starting from the first appearance of micro deficiencies	50-80 g/hl
Root application	ALL all crops	preventive applications	3-6 kg/ha
	ALL all crops	curative applications	10-30 kg/ha



# MOLIBION

## cure and prevention of molybdenum deficiencies

MOLIBION is a product to supply molybdenum to all crops, improving the use of nitrogen or its fixation in legumes. Molybdenum accelerates the transformation of nitrogen in plants into organic products (amino acids and proteins) and promotes symbiotic fixation of nitrogen in legumes.



**SIZE CHART**  1 lt

### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application



Fertigation

#### CROP



fruit crops



vegetable



ornamental crops



row crops



all crops

#### DOSE

50-70 ml/100L

80-120 ml/100L

50-70 ml/100L

1-1.5 L/ha

1-2 L/ha



# WATER SOLUBLE NUTRITION

The WSN lines, specific for both fertigation and foliar application, offer a wide range of solutions, consisting of microcrystalline NPK formulations. These fertilizers are completed with microelements in chelated form and characterized of total and immediate solubility.

Guaranteed balanced crop nutrition

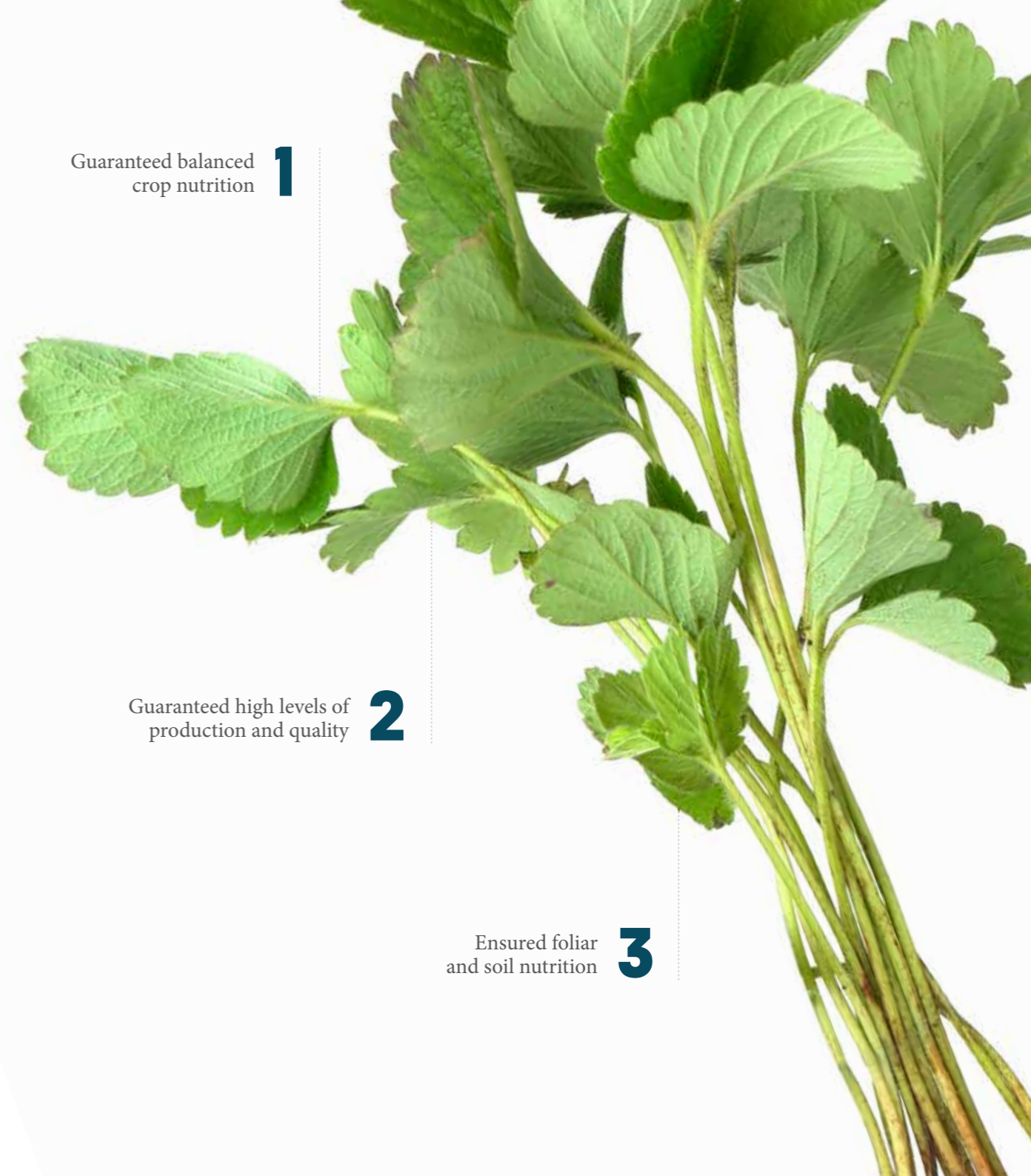
1

Guaranteed high levels of production and quality

2

Ensured foliar and soil nutrition

3





# FERTIGATION

The WSN lines, specific for fertigation application, offer a wide range of solutions for different nutritional needs and phenological phases, consisting of microcrystalline NPK formulations.

WATER SOLUBLE NUTRITION

# MASTER LINE

## nourishes and supports the plant growth

Sodium and Chlorine free. Completed with chelated trace elements (EDTA).

MASTER LINE is a complete range of water-soluble microcrystalline fertigators that are totally and immediately soluble, specific for fertigation systems. The different formulations have been designed to meet the nutritional needs of all crops, in each crop phase and for each type of soil, ensuring improved yields and quality.



### SIZE CHART

■ 10 kg ■ 25 kg

### DIRECTION FOR USE

#### APPLICATION METHOD



Fertigation

#### CROP



fruit crops



vegetable crops



flowers

#### PERIOD OF APPLICATION

During the crop cycle

During the crop cycle

During the crop cycle

#### DOSE

0.5-1.5 kg/1000 m<sup>2</sup> a day

0.5-1.5 kg/1000 m<sup>2</sup> a day

0.5-1.5 kg/1000 m<sup>2</sup> a day

# MASTER SUPREME

**guarantees a complete nutrition with a biostimulant effect**

The high quality WSN enriched with biologically active ingredients.

MASTER SUPREME is the new line of high quality water-soluble fertilizers, enriched with biologically active ingredients which guarantee both, nutritional and biostimulant effects. The innovative formulations, based on Geapower Technology (GEA582), stimulate metabolism and ensure a greater increase of quantity and quality of production.



## SIZE CHART

10 kg

## DIRECTION FOR USE

### APPLICATION METHOD



Fertigation

### CROP



fruit crops



vegetable crops



flowers

### PERIOD OF APPLICATION

During the crop cycle

During the crop cycle

During the crop cycle

### DOSE

2.5-5 kg/1000 m<sup>2</sup>

2.5-5 kg/1000 m<sup>2</sup>

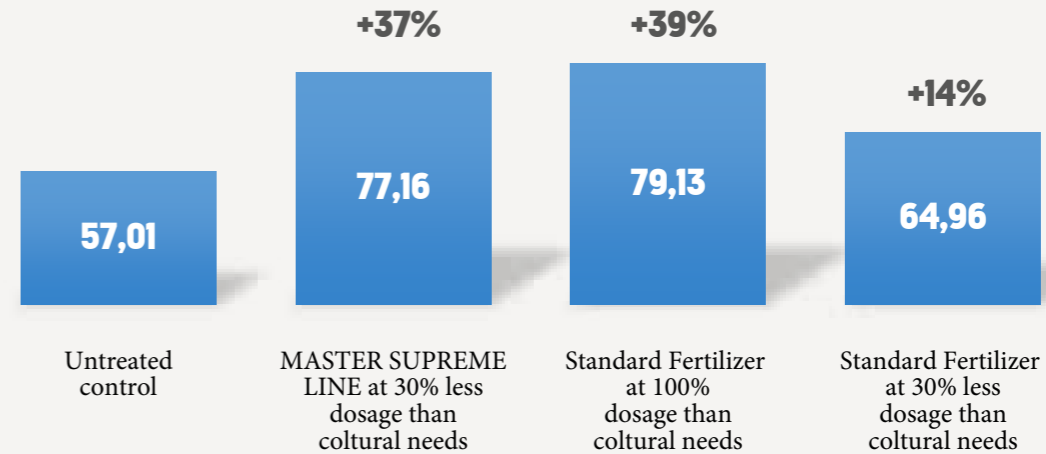
2.5-5 kg/1000 m<sup>2</sup>

## MASTER SUPREME LINE: the follow-up

MASTER SUPREME LINE thanks to the biologically active ingredients inside its formulations enhances nutrient use efficiency, ensuring higher yields with good quality.

MASTER SUPREME applications guarantee a sustainable nutrient management, with a reduced nitrogen and potassium leaching and reduced phosphorus fixation. Valagro experience confirms that MASTER SUPREME LINE is able to provide an yield increase equal to what would be obtained with a standard fertilizer but using a 30% less dosage.

### AVERAGE YIELD/PLOT (KG)



### SAMPLING SEQUENCE

The above graph shows the results, in terms of production, of the trials made in Italy on melon in 2016, with MASTER SUPREME LINE. We compared the untreated control with Master supreme at 30% less dosage than the cultural needs and with a standard fertilizer at 100 % dosage than the cultural needs.



# FOLIAR

The WSN lines, specific for foliar application, offer a wide range of solutions for different nutritional needs and phenological phases, consisting of microcrystalline NPK formulations.

WATER SOLUBLE NUTRITION

# PLANTAFOL LINE

## foliar NPK supplements with microelements chelates

Elevated purity and solubility. Enriched with trace elements chelated with EDTA. Suitable for any nutritional requirement.

PLANTAFOL LINE consists of foliar fertilizers based on high solubility and rapid and complete absorption within the leaves. All products contain trace elements chelated with EDTA and can be mixed with the most common pesticides. The PLANTAFOL LINE offers several solutions based on different levels of NPK content.



### SIZE CHART

■ 1 kg ■ 5 kg ■ 25 kg

### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP



fruit crops



vegetable crops



flowers

#### PERIOD OF APPLICATION

during the crop cycle

during the crop cycle

during the crop cycle

#### DOSE

2.5-4.0 kg/ha

2.5-3.5 kg/ha

150-250 g/hl

# OPIFOL

**ensures an higher crop yield and better grain quality**





Nourishes crops and improves the production quality and quantity.

OPIFOL is a new highly soluble foliar fertilizer line, part of a complete solution together with Yeldon, specific for row crops with rapid uptake into plant leaves. OPIFOL LINE contains a combination of macro and micronutrients to maximize crop yield and quality.



**SIZE CHART**  25 kg

**DIRECTION FOR USE**

APPLICATION METHOD	PRODUCT	CROP	PERIOD OF APPLICATION	DOSE
 Foliar application	OPIFOL VEGETATIVE	<b>ALL</b> All Industrial crops	Vegetative stage	 2.5/3.5 kg/ha
	OPIFOL REPRODUCTIVE	<b>ALL</b> All Industrial crops	Reproductive stage	 2.5/3.5 kg/ha
	OPIFOL EQUILIBRIUM	<b>ALL</b> All Industrial crops	During all crop cycle	 2.5/3.5 kg/ha

New product is coming.







## **OTHER PRODUCTS**

**A careful choice of complementary products  
and fertilisers to provide a complete and  
effective solutions for all crop needs.**



# ACTIV ERGER

## mineral activator of erger

Nitrogen fertiliser with high calcium content to be used in association with ERGER for breaking dormancy.

The use of ACTIV ERGER is necessary to support the significant metabolic stimulus of ERGER with calcium and nitrogen.



### SIZE CHART

20 lt

### DIRECTION FOR USE

#### APPLICATION METHOD



Wood application

#### CROP



cherries



table grapes

#### PERIOD OF APPLICATION

associated with ERGER

associated with ERGER

#### DOSE

8L/100L of solution

16L/100L of solution

# CONTROL DMP

## foliar uptake improver

Control DMP is an acidifying fertiliser.

The pH value achieved can easily be determined by comparing the colour of the solution with that of the colorimetric scale indicated on the label. Control DMP reduces the surface tension facilitating penetration of the solution into the plants. Control DMP acts as a dispersant and helps make compatible mixtures of more products.



### SIZE CHART

1 lt 10 lt

### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP



all crops



to acidify solutions\*



to facilitate penetration of solutions

#### DOSE

50-80 ml/hl

50-80 ml/hl to reach pH values of 6-6.5

20-30 ml/hl

\* Pour CONTROL DMP directly into the atomiser before adding other products. The dosage varies with the pH and the initial hardness of the water.



# LIOKIL

## surface-active action

LIOKIL is a foliar fertilizer for surface-active action, which increases the efficacy of treatments thanks to its acid pH.

LIOKIL can be used both in the open field and in greenhouses. LIOKIL nourishes plant by supplying nitrogen and phosphorus and also cleans the plants from organic exudates on the leaves and fruits.



### SIZE CHART

10 lt

### DIRECTION FOR USE

#### APPLICATION METHOD



Foliar application

#### CROP

ALL all crops

ALL all crops

#### PERIOD OF APPLICATION

For washing organic exudates using high volumes of water (15-20 hl). The washing effect is proportional to the dose used and shows greater efficacy at high dosages indicated.

In association with other treatments with the volumes normally used for applications.

#### DOSE

500-1000 ml/ha

350-450 ml/ha

# MICRO NP

## NP fertilizers for localized application at sowing

Promotes initial growth of seedlings, even in unfavourable environmental conditions.

MICRO NP is specially designed to provide a “STARTER” effect to crops, giving them a strong and vigorous start and improving industrial cycles of fullfield crops.



### SIZE CHART

10 kg 25 kg

### DIRECTION FOR USE

#### APPLICATION METHOD

Soil application

#### CROP

row crops (localised applications) maize, tomato and other vegetables, wheat, sunflower, sorghum, rice, oil seed rape, potato, carrot, onion

vegetables and floriculture (localised applications)

fruits (localised applications)

#### DOSE

25-40 kg/ha

25-40 kg/ha

30-40 kg/ha

# SLOWENNE

## NPK fertiliser with slow release Nitrogen

Ensures constant availability of nitrogen for the entire crop cycle. Allows the reduction of the number of applications. Does not alter the ground's level of salinity.









SLOWENNE contains nitrogen in the ammoniacal, ureic form and in the synthesised organic form (UREAFORM), featuring gradual and differentiated solubility. It ensures to crops prolonged and high availability of nitrogen also during the fruit setting and fruit growth and avoids the expensive fractionated fertilization.



### SIZE CHART

25 kg

### DIRECTION FOR USE

APPLICATION METHOD	CROP	PERIOD OF APPLICATION	DOSE
Baseline fertilisation	 orchards	in the January-April period	 600-800 kg/ha
	 horticulture	in the January-April period, depending on development	 2-3 kg per plant
	 strawberry	during soil preparation	 400-600 kg/ha
	 potato	during soil preparation	 200-300 kg/ha

# PLANT BIOSTIMULANTS

## PHYSICAL PROPERTIES

PRODUCT	pH (1% solution)	Density (g/cm <sup>3</sup> ) 20°C	Colour	Conductivity E.C. -1‰ (mS/cm) 18°C
<b>ACTIWAVE</b>	6,4	1,29	black	0,03
<b>ACTIWAVE G</b>	7,6	1,0	brown	-
<b>BENEFIT</b>	6,8	1,2	brown	0,2
<b>ERGER</b>	6,0	1,25	brown	0,526
<b>KENDAL ROOT</b>	6,1	1,2	brown	0,42
<b>KENDAL TE</b>	8,4	1,5	green	0,26
<b>MC CREAM</b>	3,9	1,08	green	0,13
<b>MC EXTRA</b>	9,2	45,0	black	0,59
<b>MC SET</b>	8,5	1,13	black	0,125
<b>MEGAFOL</b>	6,5	1,22	brown	0,3
<b>RADIFARM</b>	5,0	1,21	brown	0,28
<b>RETROSAL</b>	3,40	1,3	brown	0,43
<b>SWEET</b>	3,5	1,35	violet	0,54
<b>VITASEVE</b>	7,9	1,21	blue	0,35
<b>VIVA</b>	6,2	1,24	black	0,29
<b>YIELDON</b>	6,5	1,2	black	0,22



# PLANT BIOSTIMULANTS

## COMPOSITION (w/w %)

PRODUCT	Formulation	Total nitrogen (N)	Organic nitrogen (N)	Ureic nitrogen (N)	Nitric nitrogen (N)	Ammoniacal nitrogen (N)	Potassium oxide soluble in water (K <sub>2</sub> O)	Phosphorus pentoxide (P <sub>2</sub> O <sub>5</sub> )	Organic carbon soluble in water (C)	Calcium oxide (CaO)	Calcium Complexed with LSA	Magnesium oxide (MgO)	Betaines	Mannitol	Boron (B)	Copper (Cu)	Iron (Fe)	Molybdenum (Mo)	Manganese (Mn)	Zinc (Zn)
<b>ACTIWAVE</b>	Liquid	3,00	1,00	2,00	-	-	7,00	-	12,00	-	-	-	-	-	-	-	0,50	-	-	0,08
<b>ACTIWAVE G</b>	Granular	12,00	-	11,00	-	1,00	10,00	5,00	-	-	-	-	-	-	-	-	2,00	-	-	-
<b>BENEFIT</b>	Liquid	4,00	1,00	3,00	-	-	8,00	-	10,00	-	-	-	-	-	-	-	-	-	-	-
<b>ERGER</b>	Liquid	15,00	-	6,10	5,80	3,10	-	-	-	4,70	-	-	-	-	-	-	-	-	-	-
<b>KENDAL</b>	Liquid	3,50	0,30	3,20	-	-	15,50	-	3,00	-	-	-	-	-	-	-	-	-	-	-
<b>KENDAL ROOT</b>	Suspension	9,00	-	9,00	-	-	9,00	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>KENDAL TE</b>	Suspension	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,00	-	-	0,50	0,50
<b>MC CREAM</b>	Suspension	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,50	0,50
<b>MC EXTRA</b>	Micro-Flakes	-	1,00	-	-	-	20,00	-	20,00	-	-	-	0,20	4,00	-	-	-	-	-	-
<b>MC SET</b>	Liquid	-	-	-	-	-	-	-	-	-	-	-	-	-	0,50	-	-	-	-	1,50
<b>MEGAFOL</b>	Liquid	3,00	1,00	2,00	-	-	8,00	-	9,00	-	-	-	-	-	-	-	-	-	-	-
<b>RADIFARM</b>	Liquid	3,00	1,00	2,00	-	-	8,00	-	10,00	-	-	-	-	-	-	-	-	-	-	0,10
<b>RETROSAL</b>	Liquid	-	-	-	-	-	-	-	-	8,00	1,40	-	-	-	-	-	-	-	-	0,20
<b>SWEET</b>	Liquid	-	-	-	-	-	-	-	-	10,00	-	1,00	-	-	-	-	-	-	-	-
<b>VITASEVE</b>	Fluid Paste	-	-	-	-	-	-	-	-	-	-	5,00	-	-	2,00	-	-	0,10	0,50	0,50
<b>VIVA</b>	Liquid	3,00	1,00	2,00	-	-	8,00	-	8,00	-	-	-	-	-	-	-	0,02	-	-	-
<b>YIELDON</b>	Liquid	3,00	1,00	2,00	-	-	3,00	-	10,00	-	-	-	-	-	-	-	-	0,20	0,50	0,50

Tables follow with main declarations in labels as they are driven by regulatory requirements. So they may change according to variations in labelling rules intervening at local level; as a consequence, some declarations may be omitted here. Always refer to official labels for the concerned country

# MICRONUTRIENTS

## PHYSICAL PROPERTIES

PRODUCT	pH (1% solution)	Density (g/cm <sup>3</sup> ) 20°C	Colour	Conductivity E.C. -1‰ (mS/cm) 18°C	Solubility (g/100ml)
<b>BREXIL CA</b>	6,50	0,50	brown	0,67	25
<b>BREXIL FE</b>	3,30	0,70	brown	0,45	40
<b>BREXIL MG</b>	3,40	0,60	brown	0,53	30
<b>BREXIL MN</b>	3,30	0,60	brown	0,44	40
<b>BREXIL ZN</b>	3,50	0,60	brown	0,43	30
<b>BREXIL COMBI</b>	3,90	0,70	brown	0,58	35
<b>BREXIL DUO</b>	7,40	0,60	brown	0,50	30
<b>BREXIL NUTRE</b>	3,10	0,50	brown	0,62	30
<b>BREXIL MIX</b>	4,60	0,60	brown	0,25	30
<b>BREXIL MULTI</b>	3,20	0,70	brown	0,94	30
<b>BREXIL TOP</b>	7,00	0,60	brown	0,68	30
<b>BOROPLUS</b>	7,70	1,37	yellow	0,20	-
<b>CALBIT C</b>	8,00	1,45	brown	0,65	-
<b>FERRILENE</b>	7,50	1,62	dark red	0,68	35
<b>FERRILENE 4,8</b>	7,40	0,70	black	0,48	4
<b>FERRILENE TRIUM</b>	7,30	0,80	black	0,46	8
<b>GLIMO</b>	6,80	0,80	brown	0,41	30
<b>HIDROMIX S</b>	5,50	1,10	brown	0,30	10
<b>MOLIBION</b>	5,70	1,15	green	0,19	-
<b>VALAGRO EDTA MN</b>	5,00	0,85	beige	0,40	80
<b>VALAGRO EDTA ZN</b>	5,00	0,90	white	0,39	100
<b>VALAGRO EDTA MIX 5</b>	4,50	1,00	grey green	0,55	10
<b>VALAGRO EDTA FE</b>	4,50	1,10	yellow	0,17	90
<b>VALAGRO EDTA CA</b>	6,00	0,80	white	-	80
<b>VALAGRO EDTA CU</b>	4,50	0,90	blue	0,30	120

# MICRONUTRIENTS

COMPOSITION (w/w %)

PRODUCT	Formulation	Chelating Agent	Chelated Fraction	Potassium oxide soluble in water (K <sub>2</sub> O)	Calcium oxide (CaO)	Magnesium oxide (MgO)	Boron (B)	Copper (Cu)	Iron (Fe) (orto-orto)	Manganese (Mn)	Molybdenum (Mo)	Zinc (Zn)
<b>BREXIL CA</b>	Microgranules	LSA	100%	-	20,00	-	0,50	-	-	-	-	-
<b>BREXIL FE</b>	Microgranules	LSA	100%	-	-	-	-	-	10,00	-	-	-
<b>BREXIL MG</b>	Microgranules	LSA	100%	-	-	8,00	-	-	-	-	-	-
<b>BREXIL MN</b>	Microgranules	LSA	100%	-	-	-	-	-	-	10,00	-	-
<b>BREXIL ZN</b>	Microgranules	LSA	100%	-	-	-	-	-	-	-	-	10,00
<b>BREXIL COMBI</b>	Microgranules	LSA	100%	-	-	-	0,90	0,30	6,80	2,60	0,20	1,10
<b>BREXIL DUO</b>	Microgranules	LSA	100%	-	18,00	4,00	0,50	0,50	-	2,00	-	2,00
<b>BREXIL NUTRE</b>	Microgranules	LSA	100%	-	-	-	-	-	-	6,00	-	6,00
<b>BREXIL MIX</b>	Microgranules	LSA	100%	-	-	6,00	1,20	0,80	0,60	0,70	1,00	5,00
<b>BREXIL MULTI</b>	Microgranules	LSA	100%	-	-	8,50	0,50	-	4,00	4,00	-	1,50
<b>BREXIL TOP</b>	Microgranules	LSA	100%	-	-	-	2,00	-	-	5,00	0,50	6,00
<b>BOROPLUS</b>	Liquid	Ethanolamine	100%	-	-	-	11,00	-	-	-	-	-
<b>CALBIT C</b>	Liquid	LSA	100%	-	15,00	-	-	-	-	-	-	-
<b>FERRILENE</b>	Soluble microgranules	EDDHSa	100%	-	-	-	-	-	6 (3,8)	-	-	-
<b>FERRILENE 4,8</b>	Soluble microgranules	EDDHA	100%	-	-	-	-	-	6 (4,8)	-	-	-
<b>FERRILENE TRIUM</b>	Soluble microgranules	Fe EDDHSa; Fe EDDHA; Mn EDTA	100%	6,00	-	-	-	-	6 (4)	1,00	-	-
<b>GLIMO</b>	Microgranules	EDTA	-	-	-	-	-	-	-	10,00	-	1,00
<b>HIDROMIX S</b>	Soluble Microgranules	EDTA; Fe EDDHSa	100%	-	-	-	0,65	0,27	7,00	3,30	0,20	0,60
<b>MOLIBION</b>	Liquid	-	-	-	-	-	-	-	-	-	8,00	-
<b>VALAGRO EDTA MN</b>	Soluble Microgranules	EDTA	100%	-	-	-	-	-	-	13,00	-	-
<b>VALAGRO EDTA ZN</b>	Soluble Microgranules	EDTA	100%	-	-	-	-	-	-	-	-	15,00
<b>VALAGRO EDTA MIX 5</b>	Soluble Microgranules	EDTA	100%	-	-	5,00	0,50	1,50	4,00	4,00	0,10	1,50
<b>VALAGRO EDTA FE</b>	Powder	EDTA	100%	-	-	-	-	-	13,00	-	-	-
<b>VALAGRO EDTA CA</b>	Soluble Microgranules	EDTA	100%	-	14,00	-	-	-	-	-	-	-
<b>VALAGRO EDTA CU</b>	Soluble Microgranules	EDTA	100%	-	-	-	-	15,00	-	-	-	-



# WATER SOLUBLE NUTRITION

## PHYSICAL PROPERTIES

PRODUCT	pH (1% solution)	Colour	Conductivity E.C. - 1% (mS/cm) 18°C	Solubility (g/100ml)
<b>MASTER 13-40-13</b>	4,7	Orange	1,053	42
<b>MASTER 15-5-30+2</b>	5,10	Red	1,063	35
<b>MASTER 17-6-18</b>	5,2	Green	1,5	45
<b>MASTER 18-18-18</b>	4,3	White	0,744	20
<b>MASTER 19-19-19</b>	5,1	Green	0,91	55
<b>MASTER 19-6-6</b>	5,1	Violet	1,836	58
<b>MASTER 20-20-20</b>	5,1	Blue	0,914	55
<b>MASTER 20-5-10</b>	4	White	1,667	10
<b>MASTER 3-11-38</b>	3,4	Blue	1,28	10
<b>MASTER 3-37-37</b>	4	Red	1,756	25
<b>MASTER 6-6-43</b>	3,7	Yellow	1,29	20
<b>MASTER SUPREME BALANCED</b>	6,5	Red	0,1	10
<b>MASTER SUPREME STARTER</b>	5,9	Red	0,91	10
<b>MASTER SUPREME DEVELOPMENT</b>	5,6	Red	0,6	10
<b>MASTER SUPREME FLOWERING</b>	5,9	Red	1,13	10
<b>MASTER SUPREME RIPENING</b>	6,1	Red	1,19	10
<b>OPIFOL EQUILIBRIUM</b>	4,6	Light Green	1,26	20
<b>OPIFOL REPRODUCTIVE</b>	3,7	Light Blue	1,4	20
<b>OPIFOL VEGETATIVE</b>	4,7	Light Blue	0,45	20
<b>PLANTAFOL 0-25-50</b>	7,5	White	1,25	30
<b>PLANTAFOL 10-54-10</b>	4,5	White	0,8	30
<b>PLANTAFOL 20-20-20</b>	4,5	White	0,68	30
<b>PLANTAFOL 30-10-10</b>	4,8	White	0,62	40
<b>PLANTAFOL 5-15-45</b>	6,3	White	1,25	10

# WATER SOLUBLE NUTRITION

COMPOSITION (w/w %)

PRODUCT	Formulation	Total nitrogen (N)	Ureic nitrogen (N)	Nitric nitrogen (N)	Ammoniacal nitrogen (N)	Phosphorus pentoxide (P2O5)	Potassium oxide soluble in water (K2O)	Magnesium oxide (MgO)	Sulphuric anhydride (SO3)	Boron (B)	Copper (Cu)	Iron (Fe)	Manganese (Mn)	Molybdenum (Mo)	Zinc (Zn)
<b>MASTER 15-5-30+2</b>	Soluble Micro-crystals	15,00	3,00	8,40	3,60	5,00	30,00	2,00	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 13-40-13</b>	Soluble Micro-crystals	13,00	-	3,70	9,30	40,00	13,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 17-6-18</b>	Soluble Micro-crystals	17,00	-	5,00	12,00	6,00	18,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 20-20-20</b>	Soluble Micro-crystals	20,00	10,40	5,60	4,00	20,00	20,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 6-6-43</b>	Soluble Micro-crystals	6,00	-	6,00	-	6,00	43,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 3-37-37</b>	Soluble Micro-crystals	3,00	-	3,00	-	37,00	37,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 3-11-38</b>	Soluble Micro-crystals	3,00	-	3,00	-	11,00	38,00	4,00	25,00	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 19-6-6</b>	Soluble Micro-crystals	19,00	-	1,70	17,30	6,00	6,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 19-19-19</b>	Soluble Micro-crystals	19,00	10,00	5,00	4,00	19,00	19,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 18-18-18</b>	Soluble Micro-crystals	18,00	9,40	5,10	3,50	18,00	18,00	3,00	6,00	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER 20-5-10</b>	Soluble Micro-crystals	20,00	-	7,50	12,50	5,00	10,00	2,00	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER SUPREME FLOWERING</b>	Soluble Micro-crystals	8,00	2,80	-	4,70	24,00	24,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER SUPREME STARTER</b>	Soluble Micro-crystals	11,00	-	2,60	8,40	42,00	11,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER SUPREME RIPENING</b>	Soluble Micro-crystals	5,00	-	3,90	-	10,00	40,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER SUPREME DEVELOPMENT</b>	Soluble Micro-crystals	20,00	14,00	5,00	-	5,00	15,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>MASTER SUPREME BALANCED</b>	Soluble Micro-crystals	18,00	7,50	5,10	5,40	18,00	18,00	-	-	0,02	0,005	0,07	0,03	-	0,01
<b>OPIFOL REPRODUCTIVE</b>	Soluble Powder	3,00	-	1,00	2,00	10,00	40,00	1,00	-	-	-	-	0,50	0,10	-
<b>OPIFOL VEGETATIVE</b>	Soluble Powder	30,00	25,70	-	4,30	15,00	5,00	-	-	-	0,200	-	-	-	0,20
<b>OPIFOL EQUILIBRIUM</b>	Soluble Powder	15,00	4,50	-	10,50	15,00	15,00	-	-	-	0,005	0,07	0,03	-	0,01
<b>PLANTAFOL 20-20-20</b>	Soluble crystals	20,00	14,00	4,00	2,00	20,00	20,00	-	-	0,02	0,05	0,01	0,05	-	0,05
<b>PLANTAFOL 10-54-10</b>	Soluble crystals	10,00	2,00	-	8,00	54,00	10,00	-	-	0,02	0,05	0,01	0,05	-	0,05
<b>PLANTAFOL 30-10-10</b>	Soluble crystals	30,00	24,00	3,00	3,00	10,00	10,00	-	-	0,02	0,05	0,01	0,05	-	0,05
<b>PLANTAFOL 5-15-45</b>	Soluble crystals	5,00	-	5,00	-	15,00	45,00	-	-	0,02	0,05	0,01	0,05	-	0,05
<b>PLANTAFOL 0-25-50</b>	Soluble crystals	-	-	-	-	25,00	50,00	-	-	0,02	0,05	0,01	0,05	-	0,05

# OTHER

## COMPOSITION (w/w %)

PRODUCT	Formulation	Total nitrogen (N)	Ureic nitrogen (N)	Nitric nitrogen (N)	Ammoniacal nitrogen (N)	Nitrogen (N) from UREAFORM	Phosphorus pentoxide (P <sub>2</sub> O <sub>5</sub> )	Potassium oxide soluble in water (K <sub>2</sub> O)	Calcium oxide (CaO)	Magnesium oxide (MgO)	Sulphuric anhydride (SO <sub>3</sub> )	Zinc (Zn)
<b>MICRO NP</b>	Microgranular	4,00	-	-	4,00	-	30,0*	-	-	-	-	1,00
<b>SLOWENNE</b>	Granules	14,00	7,10	-	3,40	3,5**	7,0***	14,00	-	5,00	19,00	-
<b>ACTIV ERGER</b>	Liquid	15,00	-	9,00	6,00	-	-	-	6,50	-	-	-
<b>LIOKIL</b>	Liquid	10,00	8,50	-	1,50	-	8,00	-	-	-	-	-
<b>CONTROL DMP</b>	Liquid	3,00	3,00	-	-	-	17,00	-	-	-	-	-

\* Phosphorus soluble in neutral ammonium citrate and in water

\*\* Nitrogen (N) from urea formaldehyde that is only soluble in hot water 1.4%; Nitrogen (N) from urea formaldehyde that is soluble in cold water 1.9%

\*\*\* Phosphorus pentoxide soluble in neutral ammonium citrate and in water

## PHYSICAL PROPERTIES

PRODUCT	pH (1% solution)	Density (g/cm <sup>3</sup> ) 20°C	Colour	Conductivity E.C. -1‰ (mS/cm) 18°C
<b>MICRO NP</b>	4,1	1,0	brown	0,8
<b>SLOWENNE</b>	-	1,0-1,1	red	-
<b>ACTIV ERGER</b>	5,9	1,28	No color	0,76
<b>LIOKIL</b>	4,40	1,15	green	0,15
<b>CONTROL DMP</b>	2,15	1,16	red	0,79



A Father:  
sows with love  
nurtures with care  
harvests with pride



Ph. Antonio Nanni / Italy







*Where science serves nature*