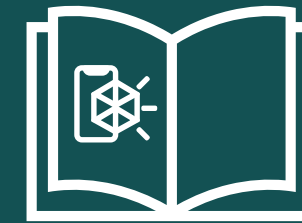


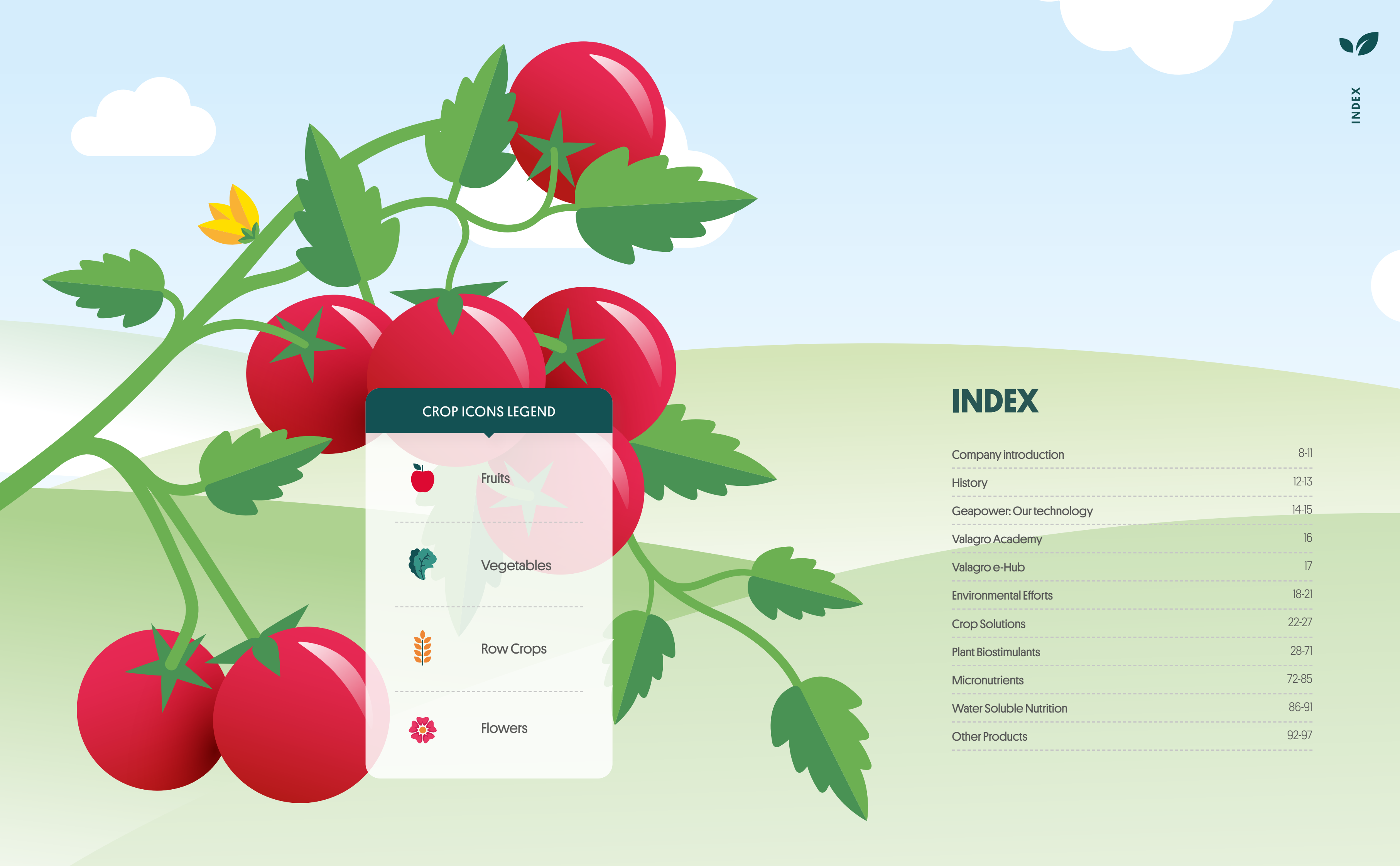
Augmented reality experience for mobile

Scan QR code with your phone



Instructions:

- 1**
Scan the QR code [page 4] with your phone
- 2**
Go to the product page [Megafol, Talete, Mc Set]
- 3**
Show your camera to the photo of the bottle of the product
- 4**
Enjoy the AR technology



CROP ICONS LEGEND



Fruits



Vegetables



Row Crops



Flowers

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TO CREATE A SUSTAINABLE FUTURE FOR PEOPLE AND NATURE.

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. That's why Valagro's core challenge is to produce more with less. At Valagro we live by the **third way mindset** pursuing excellence and applying science to agriculture to produce more and healthier food with sustainability at heart. This is our vision.

We have distinguished ourselves on the market worldwide by our ability to offer high quality and effective solutions for plant nutrition and health. We are continuing to improve our innovation: **our challenge is to become a leading player in agricultural nutrition and biologicals.**

Biologicals are a category of products for plant protection, growth, and health, containing naturally occurring molecules, organisms, or both. Taking root in a deep knowledge of physiological mechanisms and raw materials, Biologicals can be used as a complement to traditional inputs to address agricultural needs in an innovative way: with a view to ecosystem conservation, sustainable production increase, and efficient resource management.



Valagro's Culture

We **focus** on challenging what has already been done. We match **expertise** and **business acumen** with great results in the constant pursuit of **excellence**.

We work for the impossible to become reality.

For those who are curious and never stop **learning**, those who courageously bring change and **openly listen** to new ideas.

For those who can transfer their **value** to others always **respecting diversity** while leveraging inclusion.



Our vision is based on:

Environmental sustainability

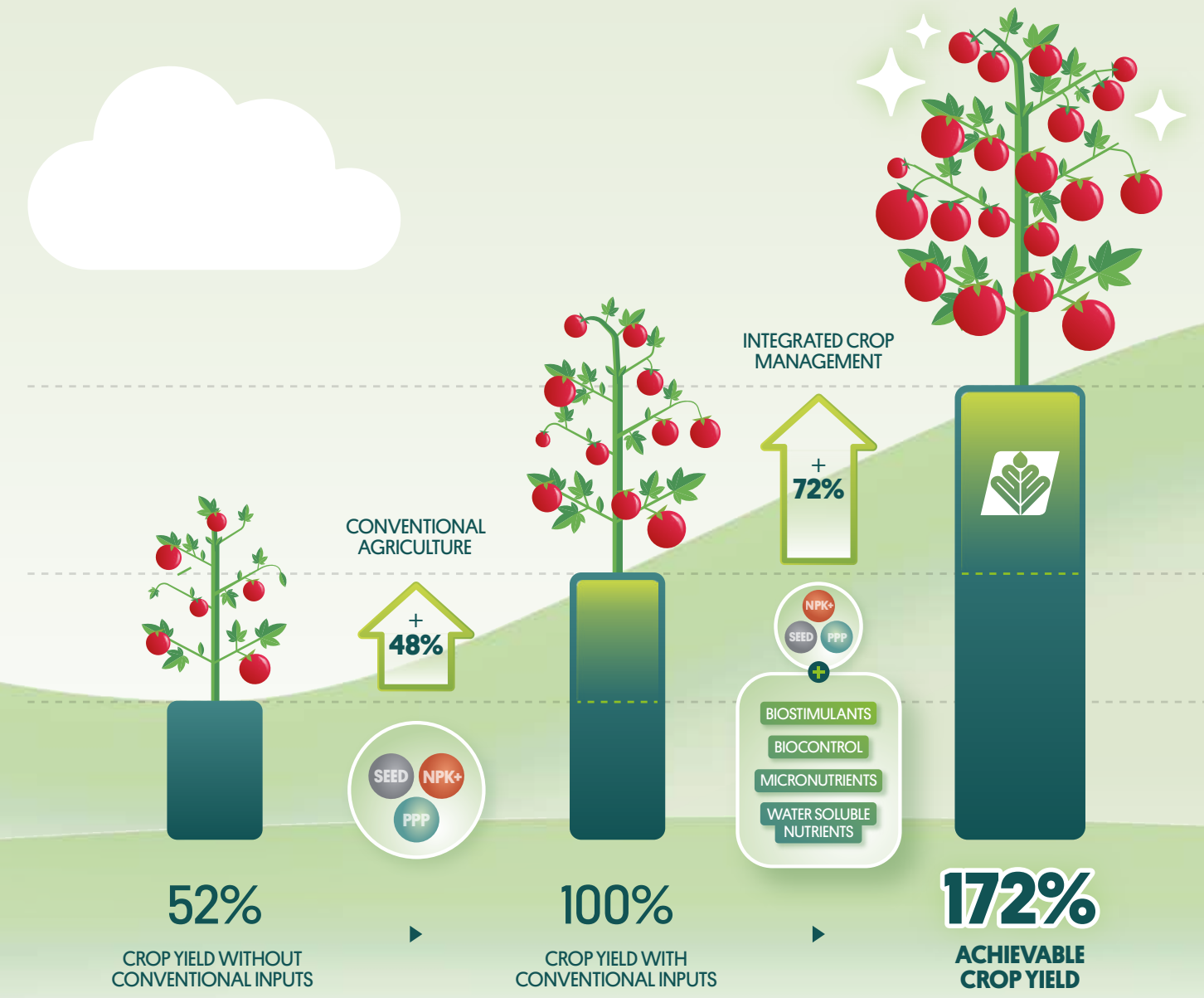
Ensure better harvests in terms of quality and quantity, using less soil, less water, fewer technical means. Overcome the challenge of providing more food for the world's needs by reducing the impact on the environment.

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.

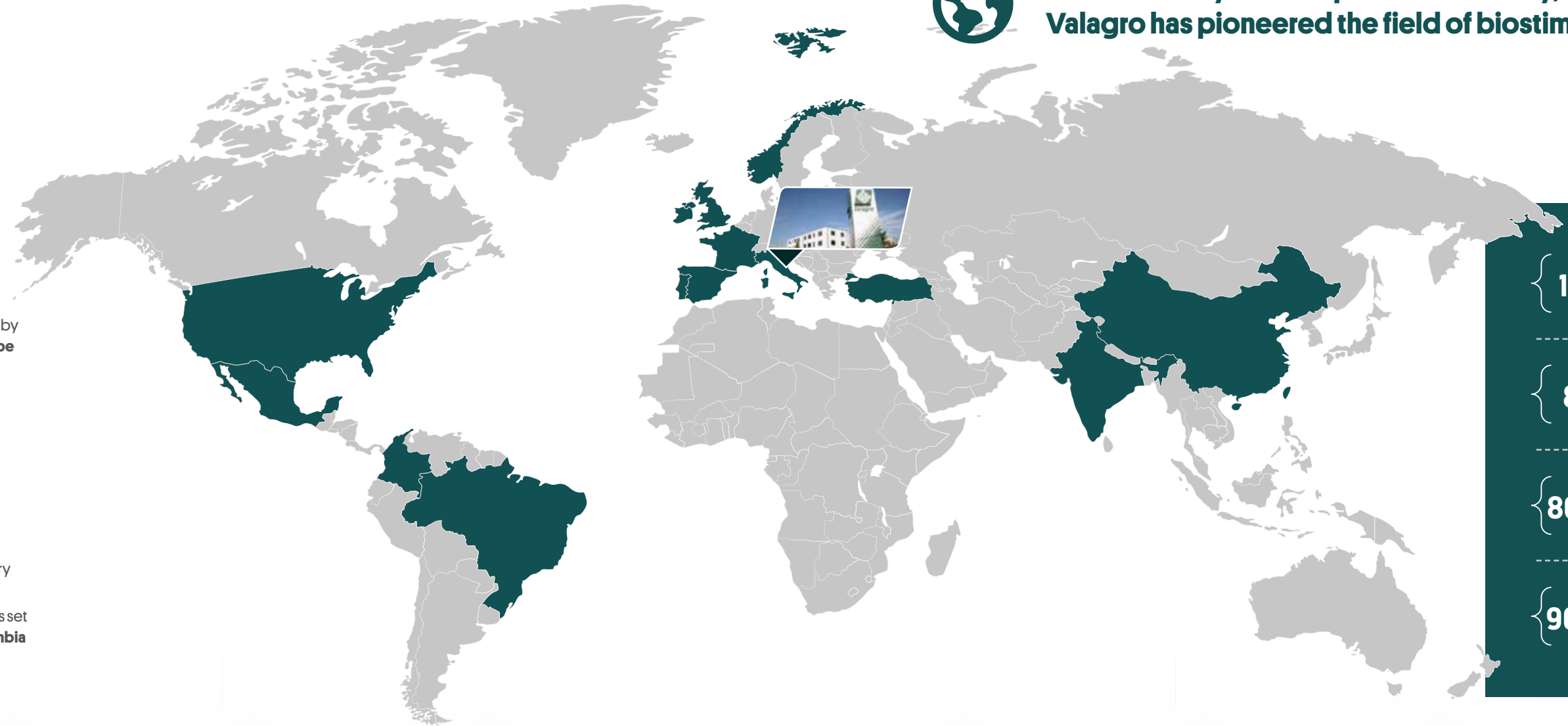




Historic expansion and growth



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



1980

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

1990

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

2000

Acquisition of **Algea** in **Norway** and **Maxicrop** in **England**.
New commercial subsidiary established in the **United States**.
Acquisition of **Samabiol** in **France**.

2012

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

2014

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

2015

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

2017

New commercial subsidiary in **China**.
New production plant in **Brazil**.

2018

Official launch of Valagro's project to build a new plant in the **United States**.
Acquisition of the company **Gabi Chemical**.

2019

Groundbreaking ceremony for the **Valagro plant in the United States**.

2020

Valagro joins **Syngenta Crop Protection**. Valagro opens its new Research Center at HQ [Atessa, Italy].

- 13** Subsidiaries around the world.
- 8** Key manufacturing facilities.
- 80+** Countries with distribution and commercial presence.
- 900+** Employees around the world (end of 2021)

Thanks to the entry in the Syngenta Group, Valagro will be able to further strengthen its commitment to the field of Biologicals [biostimulants, biocontrol and biofertilizers] and can offer farmers an even wider range of options capable of combining quality, productivity and sustainability in agriculture.





GEAPOWER 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 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.





The Valagro Academy

A NATURAL SYNERGY WITH OUR CUSTOMERS

Aware of its customers' needs, Valagro has created Valagro Academy, an innovative program designed to promote the company's expertise in the field of crop nutrition and biostimulants, showing how Valagro solutions can improve the performance of crops to the benefit of efficiency and sustainability in agriculture.

2017-2021

N°events: 3.563

N°participants: 65.096



Coordinated by the Marketing team and the Market Development Managers, Valagro Academy provides high-level assistance and training sessions for Valagro customers 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.

Valagro customers will benefit from this highly specialized knowledge based on specific needs and local experiences, and can be assisted in choosing the best solutions to be applied in the field.

Valagro®

ACADEMY



E-HUB THE BRAND NEW VALAGRO APP®

e-Hub: a world of knowledge at your service, even closer and more connected.

It is the digital path to communicate with our partners, customers, distributors and all people interested in biostimulants, fertilizers and AG world.

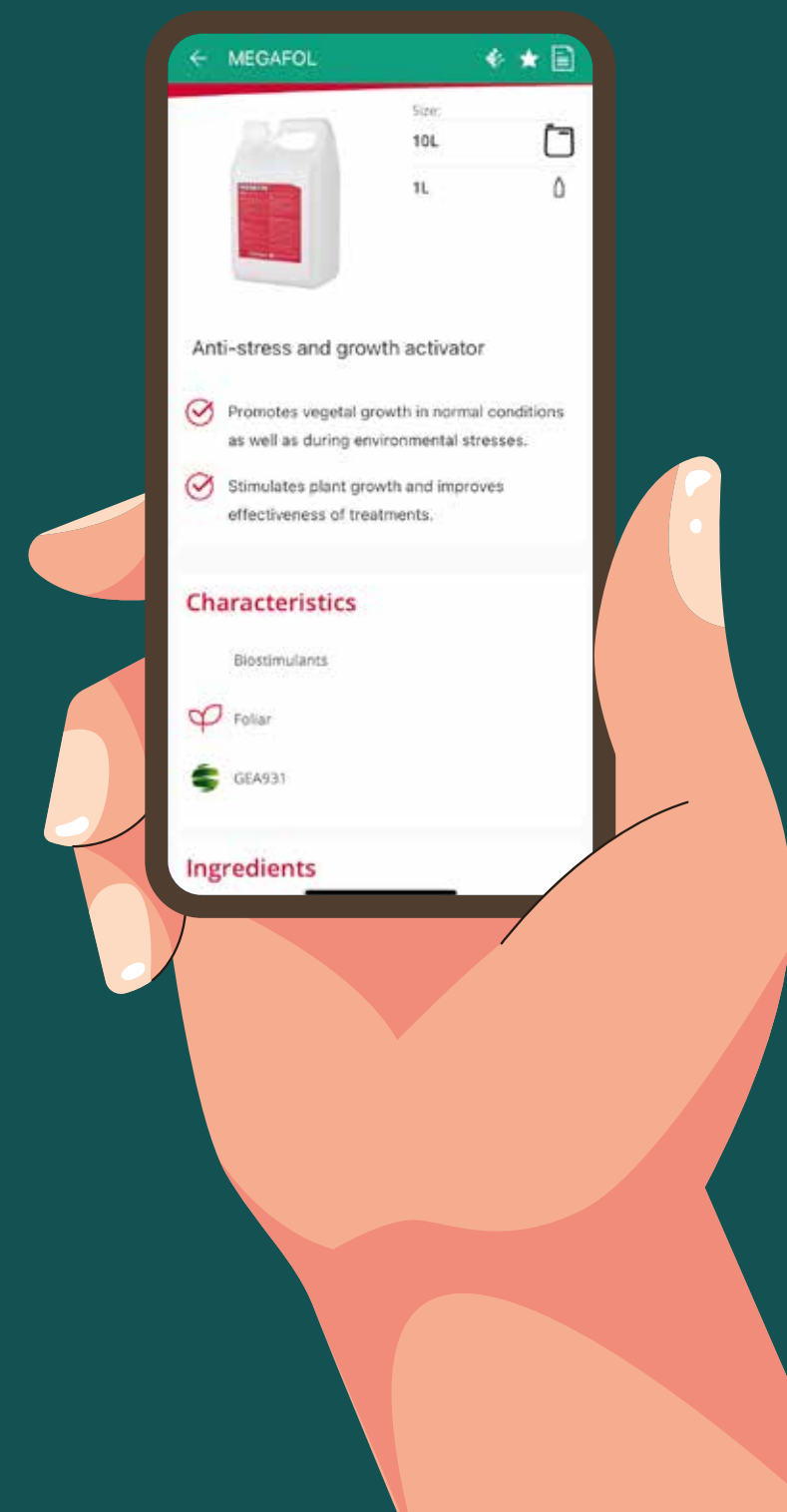


Be a part of Valagro's digital Community. Explore the brand new app e-Hub. **Join us here!**

Discover how many features you can have access to, in e-Hub:

- products, over than 3,500 solutions and technical information for your markets!
- 20 markets available: Azerbaijan, Italy, Greece, France, Spain, Morocco, USA, Mexico, Colombia, Brazil, Russia, Kazakhstan, Hungary, Ukraine, China, Australia, New Zealand, India, Portugal, Russia and Turkey.
- every year we add new markets!
- articles about agriculture written by Valagro experts and scientific publications.
- a complete set of utilities to help in your day-to-day work.
- social features to promote interaction between users.

e-Hub is user-friendly and attractive. Always with you on your laptop and mobile (iOS and Android).





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



1 From environmental protection

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

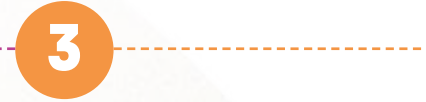
Today, there is a dedicated staff that uses its expertise for the protection of the environment and for the improvement of quality and safety, inside and outside the company boundaries.



2 To product quality

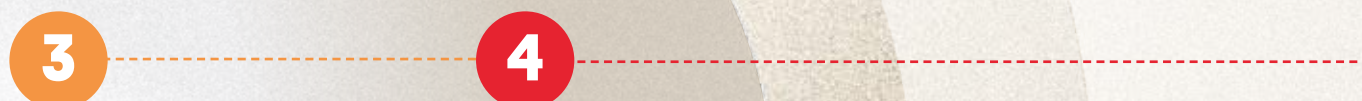
Involved since the foundation in pursuing the highest quality standards of products, in 2001 Valagro obtained ISO 9001 certification.

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.



3 Health and safety

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.



3 Traceability

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.

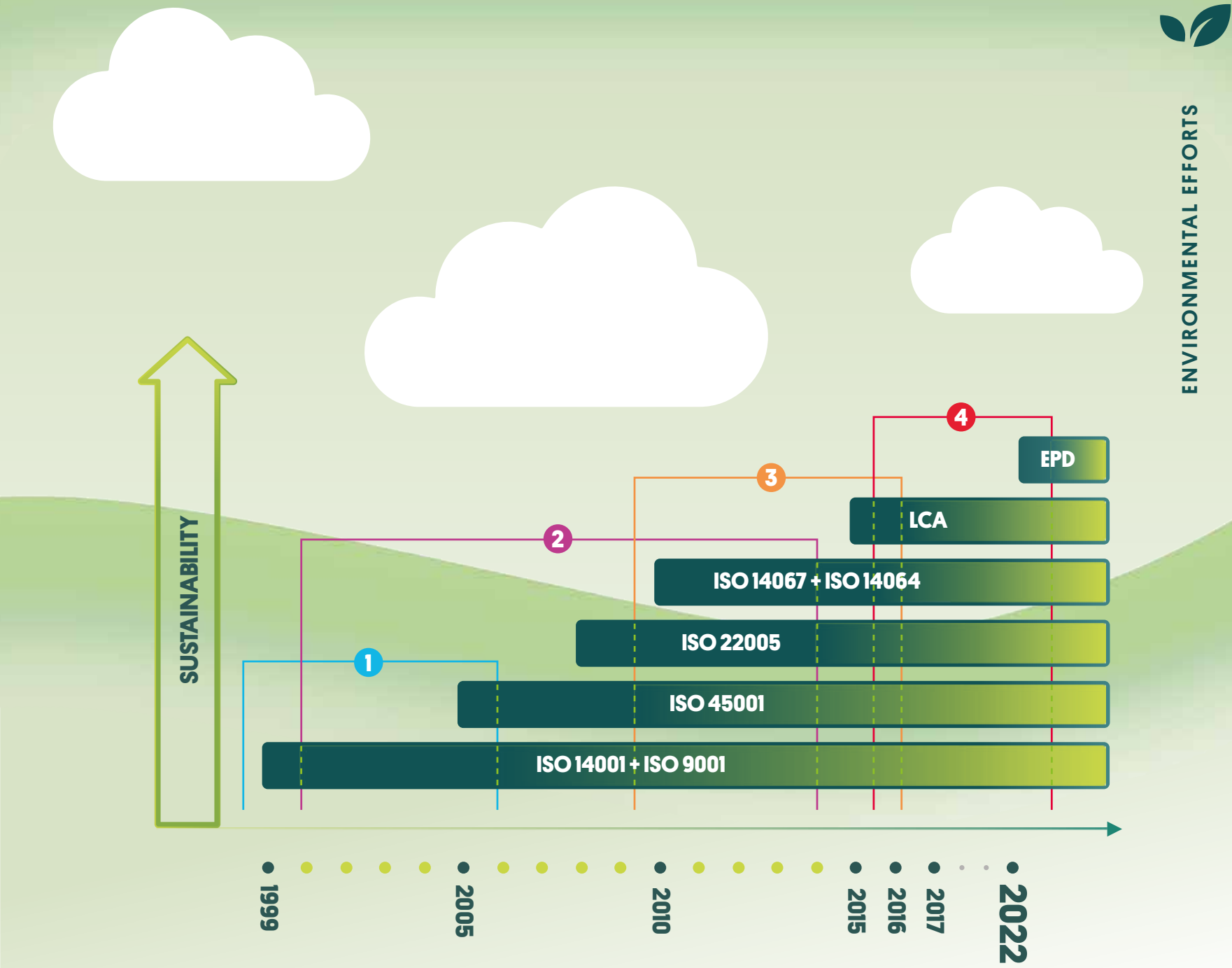


4 Sustainability, life cycle and climate change

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 Declarations]. In May 2022 the company certifies its process and in October 2022 publishes on the Environdec website the first EPD declaration of the products.





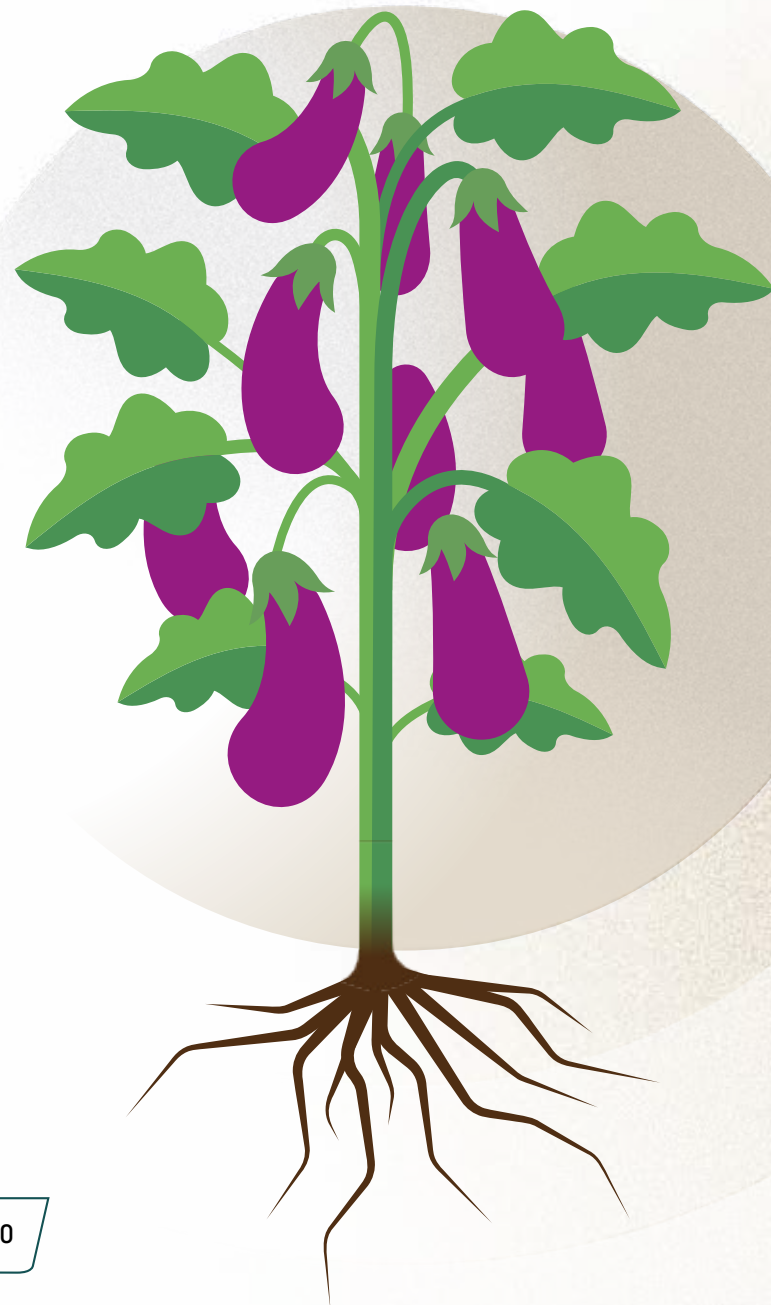
To create a sustainable future for people and nature

THE CORRECT FERTILIZERS USE

For 40 years, Valagro has been helping farmers get the best out of their production by optimizing the use of resources and production inputs with one goal: **to create a sustainable future for people and nature.**

It is an act of responsibility towards the wider community we operate in, and with which we hope to cultivate a culture that is ever more respectful of the environment and attentive to the community's needs.

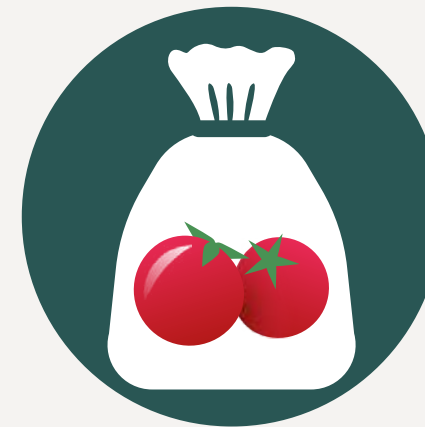
We recommend the correct use of our products in the field through the best management practices.



RIGHT PLACE



RIGHT RATE



RIGHT SOURCE



RIGHT TIME

Source: 4R Nutrient Stewardship (<http://www.nutrientstewardship.org/>) provides a framework to achieve cropping system goals, such as increased production, increased farmer profitability, enhanced environmental protection and improved sustainability.



ROW CROP SOLUTIONS

PHENOLOGICAL STAGES

SOWING









EMERGENCE


4-8 LEAVES

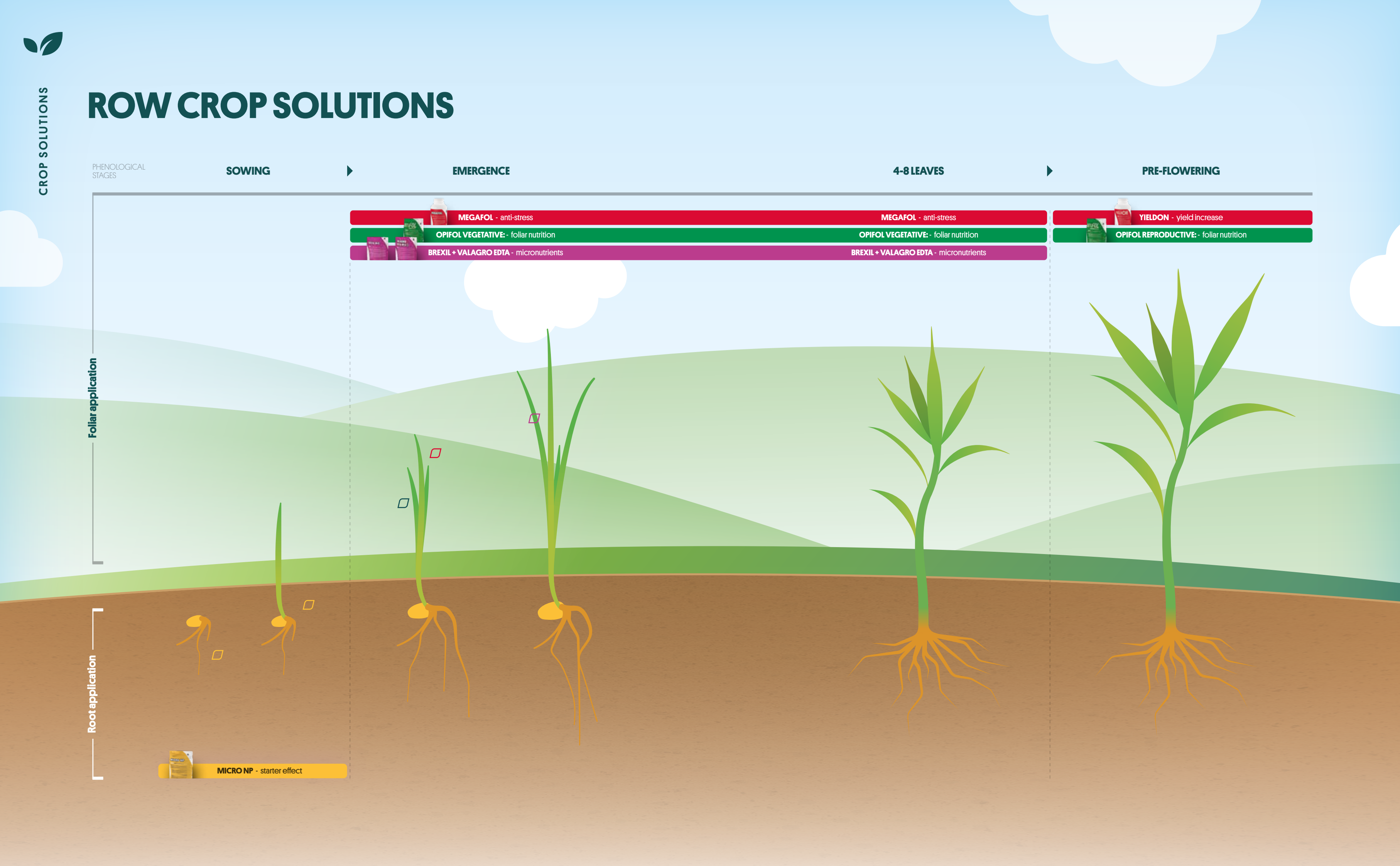
PRE-FLOWERING

Foliar application

Root application

 MEGAFOL - anti-stress	 MEGAFOL - anti-stress	 YIELDON - yield increase
 OPIFOL VEGETATIVE - foliar nutrition	 OPIFOL VEGETATIVE - foliar nutrition	 OPIFOL REPRODUCTIVE - foliar nutrition
 BRIXIL + VALAGRO EDTA - micronutrients	 BRIXIL + VALAGRO EDTA - micronutrients	

 **MICRO NP** - starter effect





ORCHARD SOLUTIONS

PHENOLOGICAL STAGES


DORMANCY

FLOWERING

VEGETATIVE DEVELOPMENT
FRUIT GROWTH

RIPENING

ERGER - advances and synchronizes bud break




MC CREAM + BENEFIT PZ - fruit size



MC SET + BOROPLUS - flowering setting



MC EXTRA - vegetative-productive balance



MEGAFOL - anti-stress



BREXIL - micronutrients

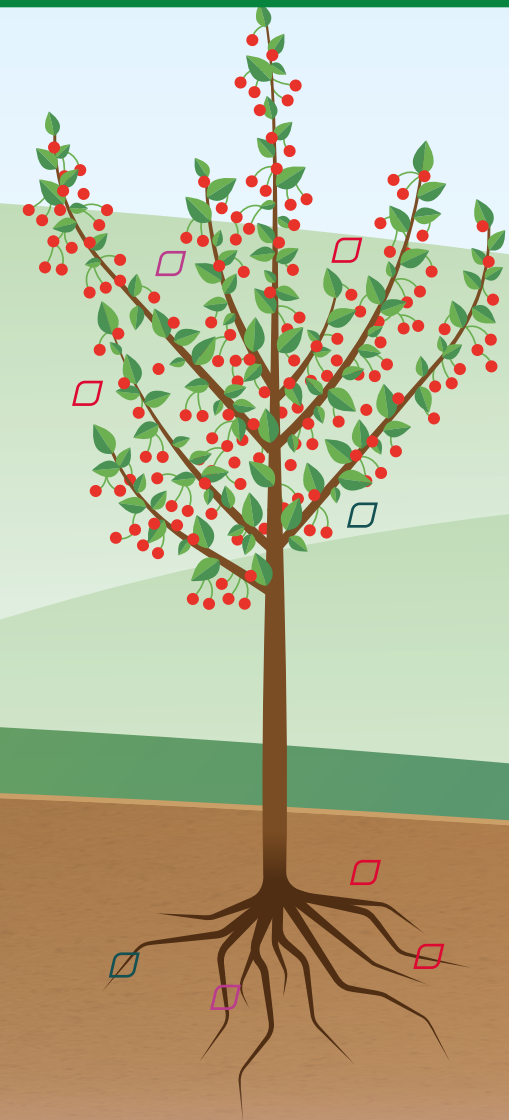
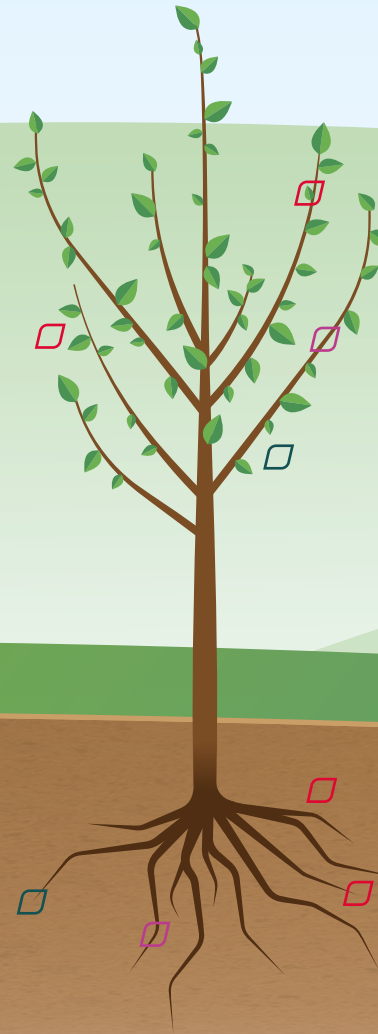
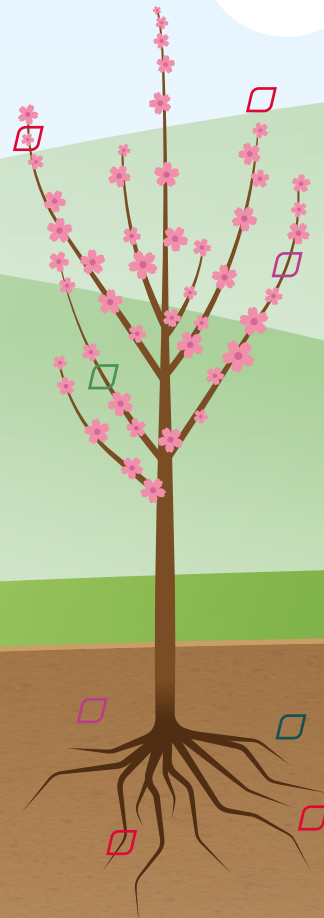
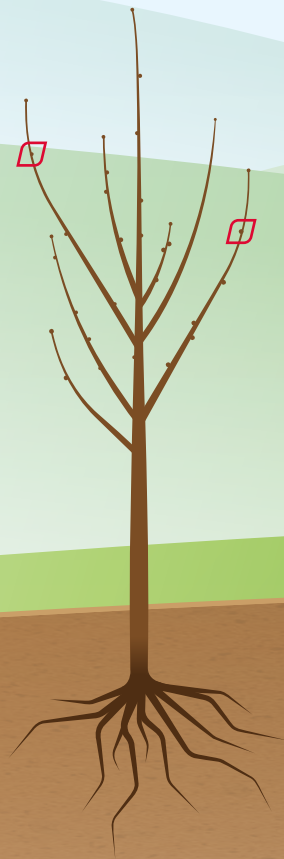


PLANTAFOL - foliar nutrition




Foliar application

Root application



VIVA - rizosphere fertility



TALETE - increase crop water productivity




KENDAL ROOT - plant nutrition



FERRILENE - iron deficiencies



ACTIWAVE - nutrient uptake



KENDAL ROOT - plant nutrition



VALAGRO EDTA - micronutrients



MASTER SUPREME - plant nutrition





VEGETABLE SOLUTIONS

PHENOLOGICAL STAGES

TRANSPLANT

VEGETATIVE DEVELOPMENT

FLOWERING

FRUIT DEVELOPMENT

FRUIT RIPENING

Foliar application

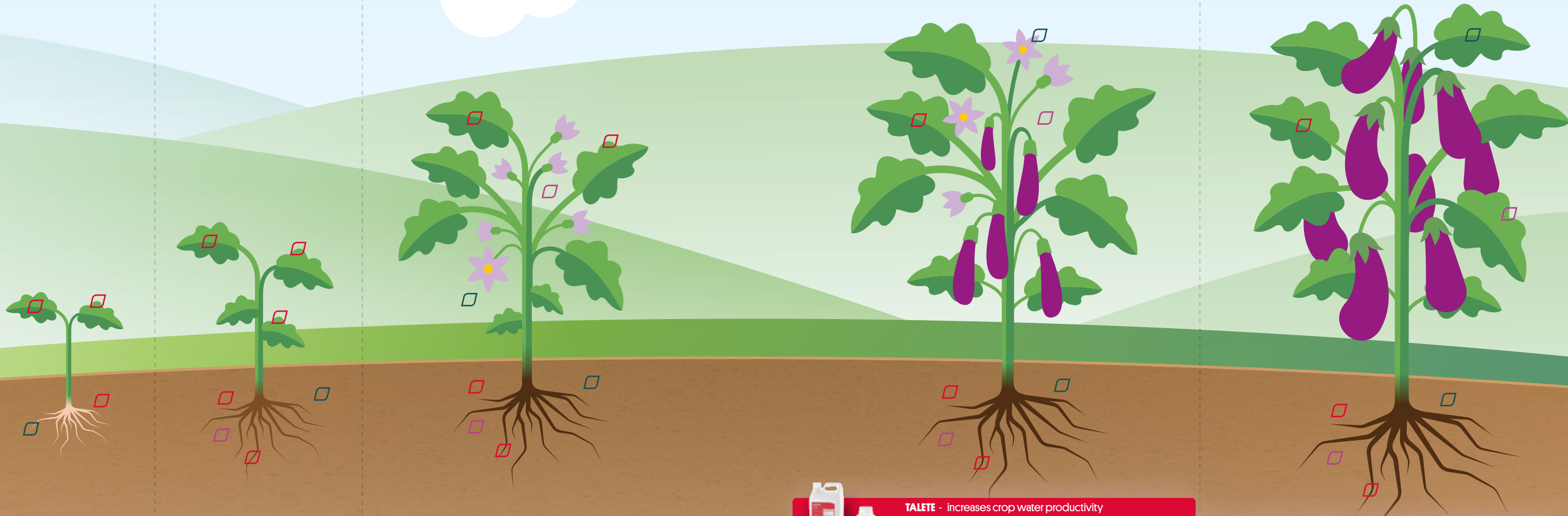
Root application

Foliar application products:

- TRANSPLANT:** BREXIL - micronutrients
- VEGETATIVE DEVELOPMENT:** MEGAFOL - anti-stress; MC CREAM - photosynthesis efficiency
- FLOWERING:** MC SET + BOROPLUS - flowering setting; MC CREAM + BENEFIT PZ - fruit size
- FRUIT DEVELOPMENT:** BREXIL Ca - Calcium deficiencies; MC EXTRA - Vegetative-productive balance
- FRUIT RIPENING:** BREXIL - micronutrients; MEGAFOL+SWEET - ripening
- PLANTAFOL - foliar nutrition** (applied across all stages)

Root application products:

- TRANSPLANT:** (No specific products listed)
- VEGETATIVE DEVELOPMENT:** VIVA - rizosphere efficiency; KENDAL ROOT - plant nutrition; VALAGRO EDTA - micronutrients
- FLOWERING:** (No specific products listed)
- FRUIT DEVELOPMENT:** TALETE - increases crop water productivity
- FRUIT RIPENING:** ACTIWAVE - nutrient uptake; RETROSAL - salt stress; KENDAL ROOT - plant nutrition; CALBIT C - calcium deficiencies; MASTER SUPREME - plant nutrition





PLANT BIOSTIMULANTS

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

- 1** Improved tolerance to abiotic stress
- 2** Improved nutrient use efficiency
- 3** Increased crop quality



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





increases the absorption of nutrients

ACTIWAVE

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

ACTIWAVE is extraordinarily unique and innovative biostimulant 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.



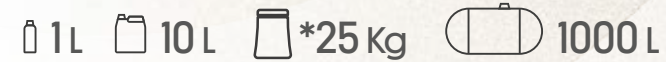
Fertigation



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
ALL Activave	15-25 L/ha	Applications during the crop cycle in presence of a well-developed root system
 *Activave G	75-120 kg/ha	1-2 applications from vegetative growth to fruit development
 *Activave G	75-120 kg/ha	1-2 applications
 *Activave G	50-100 kg/ha	2-3 applications from vegetative growth every 10-15 days

SIZE CHART



ACTIWAVE: Phenomic approach

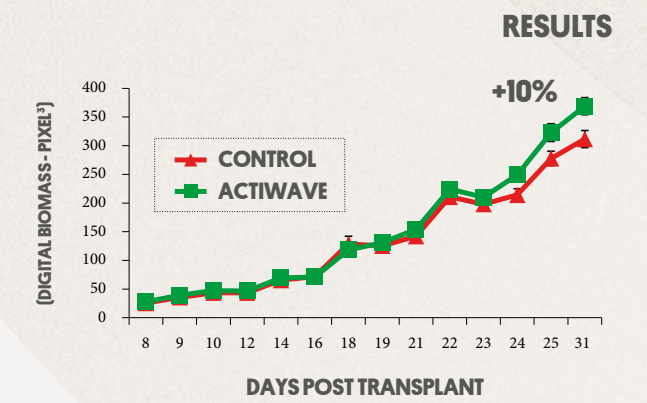
Phenomic tests with ACTIWAVE were performed at Valagro @PHENOlab Research Center by using the Lemnatec Scanalyzer 3D digital measurement station. TARGET: to evaluate the improvement in the digital biomass and root uptake in limiting growth conditions like the presence of hard water, after treating plants with ACTIWAVE, compared to untreated test.

CROP: Tomato cv. Ikram;

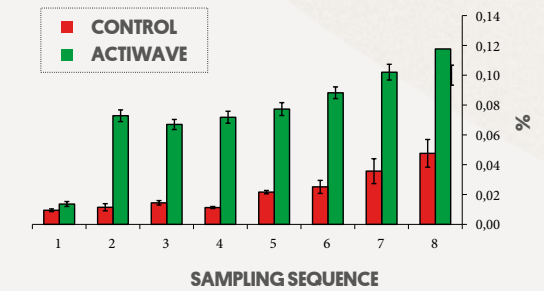
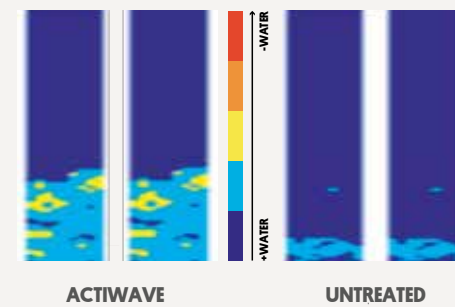
TRIAL CONDITIONS: cylinders for phenomic analysis;

APPLICATIONS: 12 and 22 days post transplant.

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.



increases and standardizes fruit size

BENEFIT PZ

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, increasing the number and dimension of cells in each individual fruit. BENEFIT PZ shows synergetic effects in combination with MC CREAM with a double effect on cell division and expansion.

Foliar application



Directions for use

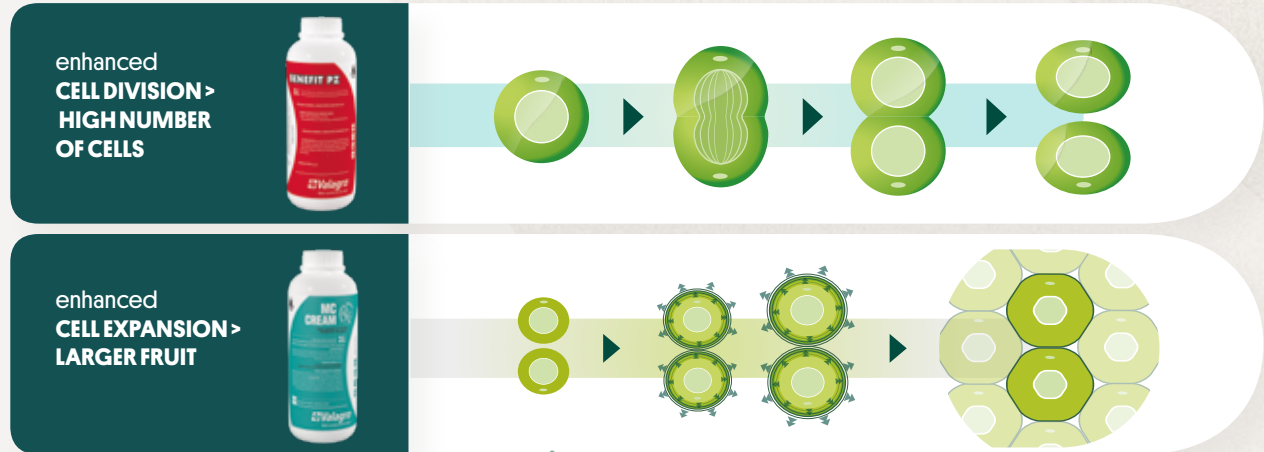
CROP	DOSE	PERIOD OF APPLICATION
	3-4 L/ha	2-3 treatments every 5-7 days from first flowerings
	3-4 L/ha	weekly treatments starting from first flowerings
	3-4 L/ha	applications starting from first flowering every 7-10 days, repeat on subsequent flowering

SIZE CHART

1L 10L

BENEFIT PZ + MC CREAM: a stimulating SYNERGY

The capability of MC CREAM to stimulate cell expansion is a versatile aspect that completely fits with the function of the use of BENEFIT PZ. One of the characteristics of BENEFIT PZ is the capability to increase cell division stimulating cytokinesis, thus inducing an increase in the number of cells produced in each unit of time. Consequently, in the treated fruits we find a higher number of cells, which after the successive cell distension process produces larger fruits. This represents an effective solution for fruit enlargement in a totally natural way.



FRUIT ENLARGEMENT	FRUITS/PLANT (N)	
	UNTREATED	MC CREAM + BENEFIT
FRUITS/PLANT (N)	3,5	3,5
AVG FRUIT WEIGHT (kg)	3,26	3,45 ^{+7.1%}
BRIX*	13,5	13,7 ^{+0.2}
HARVEST TIME INDEX (days)	5,2	5,3 ^{+0.1}
YIELD (ton/ha)	50,7	53,9 ^{+3.2}
YIELD INCREASE (%)		+6.3%

VALAGRO FIELD DEVELOPMENT TRIAL	APPLICATION	FOLIAR
DESIGN	RCBD	
REPLICATIONS	6	
DOSAGE (l/ha)	BENEFIT PZ: 3 lt + MC CREAM: 2 lt	
NR APPLICATIONS	3	
TIMING OF FIRST APPLICATION (BBCH)	61	
INTERVAL BETWEEN APPLICATIONS (days)	7	



advances and synchronizes bud break

ERGER

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.

Wood application



Directions for use

CROP

DOSE

PERIOD OF APPLICATION



5-6 L/hl

apply 45 days [± 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]



6-7 L/hl

apply 60 days [± 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]

INFORMATIONS

The directions for use above are general. Target crops, varieties, application timing and rate vary by area so refer to the label with reference to crops that can be treated and the relevant application rate & timing.

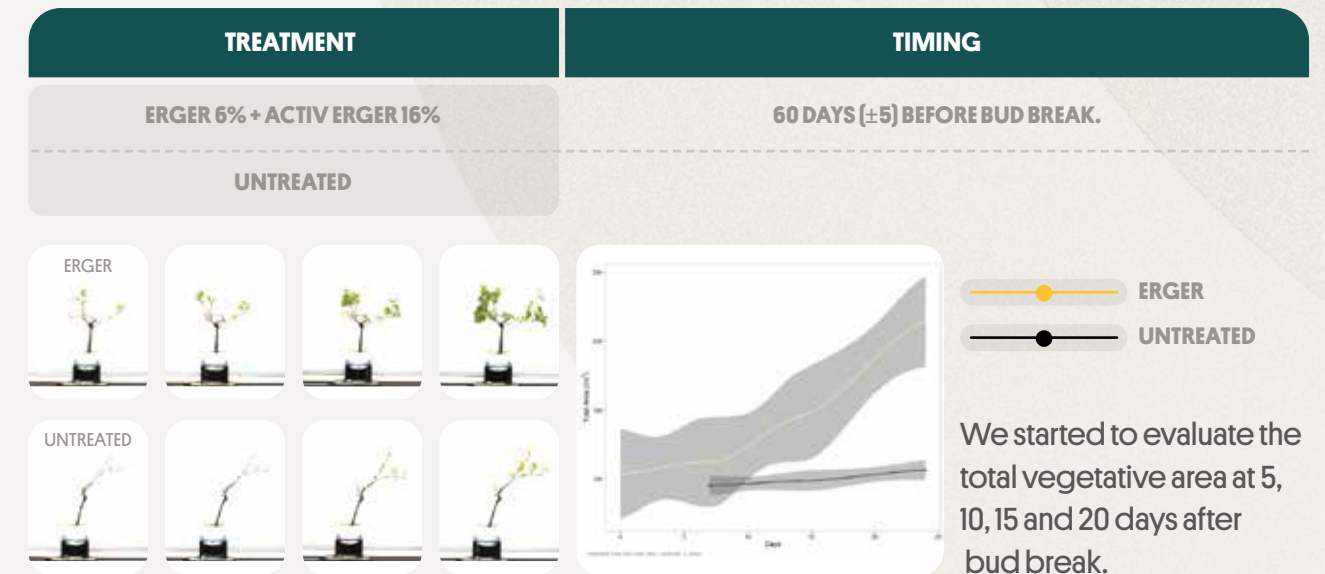
SIZE CHART

20 L

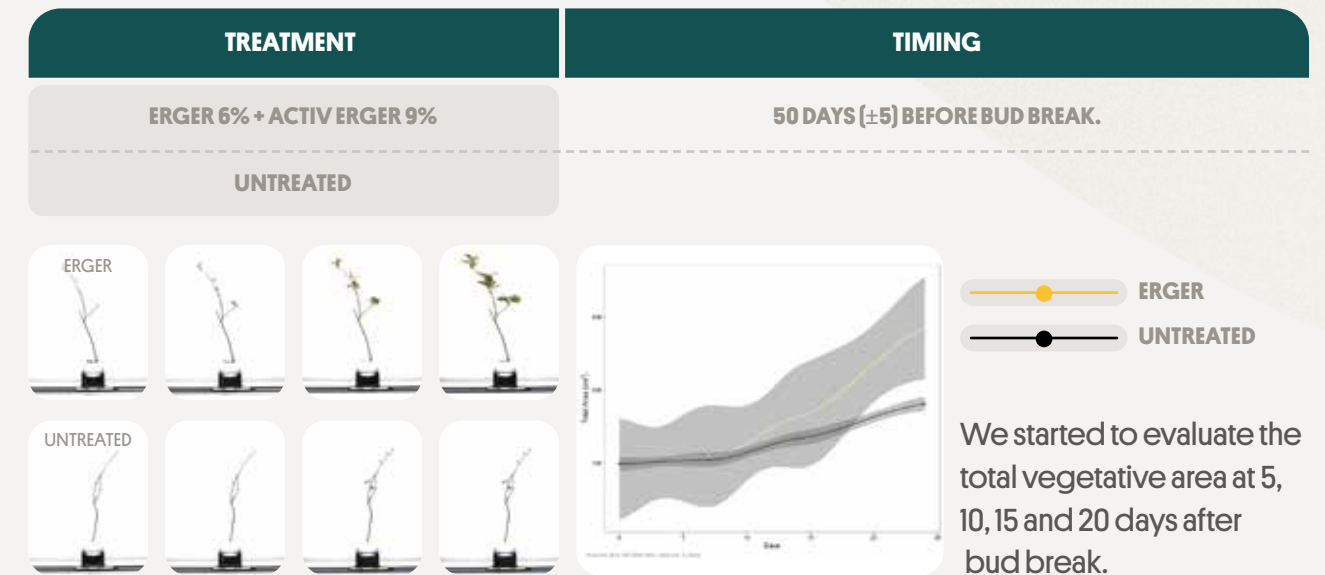
ERGER: phenomics highlights the advance and synchronization of bud break

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



CROP: Kiwi fruit* VARIETY: Hayward



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



nourishes and strengthens the plant naturally

KENDAL ROOT

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

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



Fertigation
** Overhead application



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
ALL	5-20 L/ha	depending on the severity of root damage and frequency of application*
ALL	5-20 L/ha	depending on the severity of root damage and frequency of application*

**Overhead application

INFORMATIONS

* 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.

SIZE CHART

1L 10L



KENDAL ROOT: gets to the root of the problem!

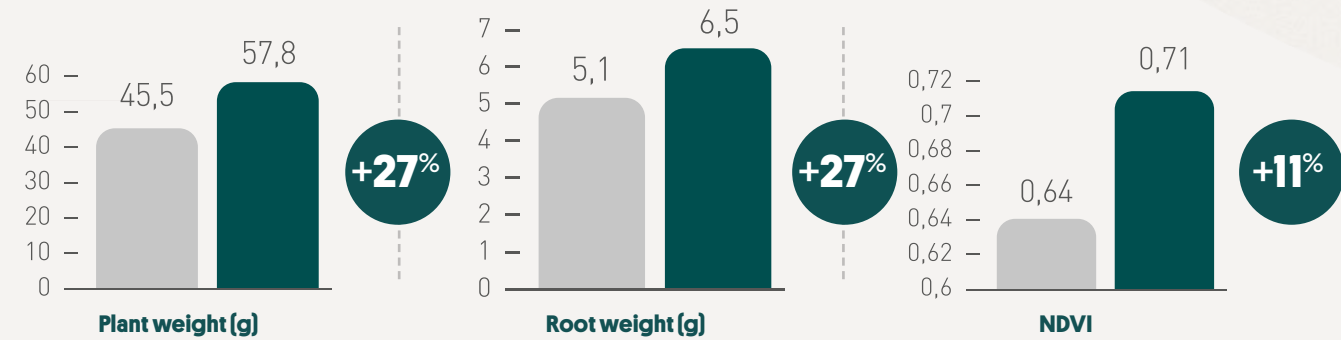
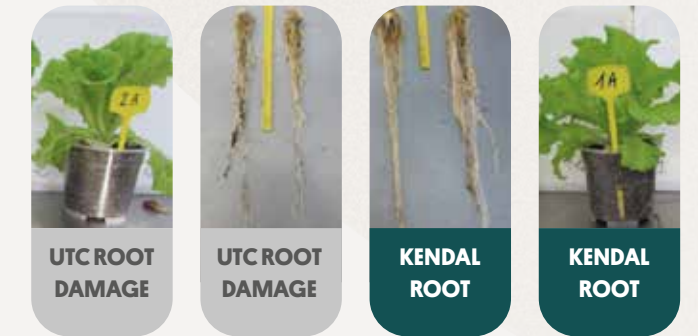
KENDAL ROOT, works directly on the root system, ensuring correct development and production enhancement in every hostile growth conditions (mechanical damages, thermal root shock, difficult soil conditions, presence of soil-borne diseases).

GENOMIC APPROACH

Gene Function	Fold Change
Regulation of root meristem growth	8
Root hair elongation	6
gravitropism, response to auxion, root development, somatic embryogenesis	15
cold acclimation, response to abscisic acid, response to water deprivation	38
Response to wounding	12
heat shock promoter (transcriptional activator)	22
Response to heat shock	6

KENDAL ROOT: induced root damage

Country: Italy
 Crops: Lettuce (Lactuca sativa L.)
 Cultivation environment: Glasshouse
 Dosage 10 L/ha
 Number of application: 3 (1 before and 2 after root damage)
 Treatment 1: UTC+ROOT DAMAGE
 Treatment 2: KENDAL ROOT + ROOT DAMAGE
 Root damage has been induced by cutting plant root system 15 days after transplant.





nourishes and strengthens the plant naturally



Foliar application
Fertigation

KENDAL

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 hostile conditions, promoting antioxidant function within the plant's cells.

Directions for use

CROP	DOSE	PERIOD OF APPLICATION
Foliar application	1,5-3 l/ha	applications every 7-10 days
Fertigation	7,5-10 l/ha	applications every 7-10 days
Localized applicatio	3,5-4 l/ha	apply approximately 10 L/plant of nutrient solution
Localized application	300-400 ml/ha	apply approximately 100-200 mL/plant of nutrient solution

RECOMMENDATIONS

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. Physical properties: refer to Safety Data Sheet

SIZE CHART



KENDAL TE

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

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

Directions for use

PERIOD OF APPLICATION	DOSE	CROP
applications every 7-10 days	3-3,5 l/ha	
applications every 7-10 days	2-3 l/ha	

RECOMMENDATIONS

Do not use KENDAL TE on species/varieties at risk of rust. Do not exceed 200 ml/ha in greenhouses. Always perform preliminary phytotoxicity tests.

SIZE CHART



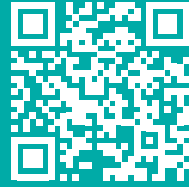
nourishes and strengthens the plant naturally

Foliar application





The way to produce effective solutions



Focus on



Ascohyllum nodosum represents a precious source of active ingredients for several formulations.

- HARVESTING AREA
- HARVESTING TIMING
- EXTRACTION METHODS
- FORMULATION

HARVESTING AREA

Algae harvests *Ascohyllum nodosum* in the arctic environment (extreme light conditions, waves and cold icy waters, tides, winds, salinity and dessication, grazing pressure) where the extreme and stressful conditions influence the chemical composition of the seaweed, forcing it to evolve chemical means as a response to each kind of challenge given by nature.

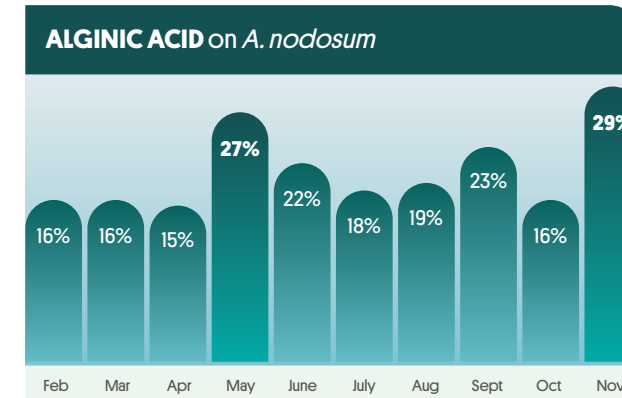


IN RED AREA
where is presents
Aschopyllum nodosum

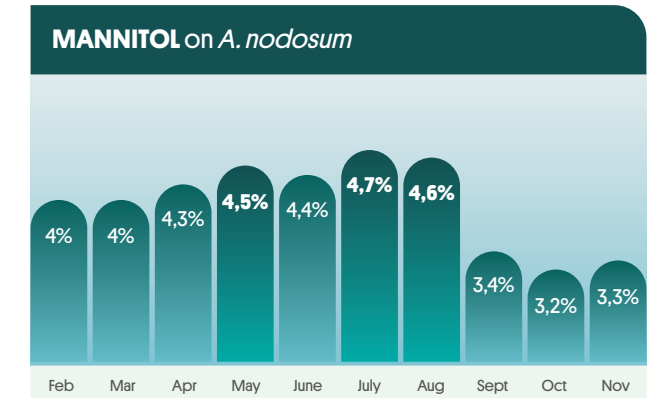
IN GREEN AREA
where Algae harvests

HARVESTING TIMING

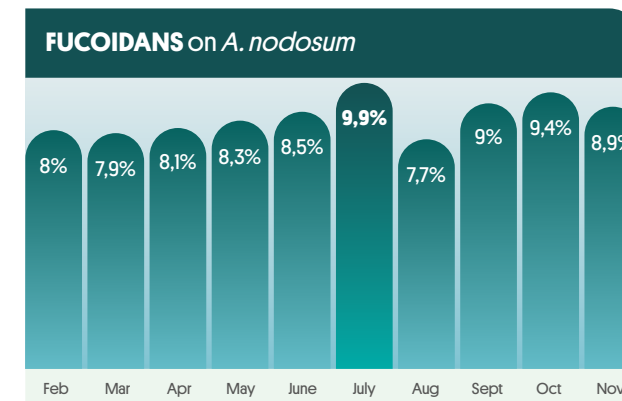
Thanks to the chemical characterization of *Ascohyllum nodosum* made through the investigative strategies of Geapower we know that the concentration of the active ingredients changes throughout the year. This feature of *Ascohyllum nodosum* influence both some extraction methods and the final product.



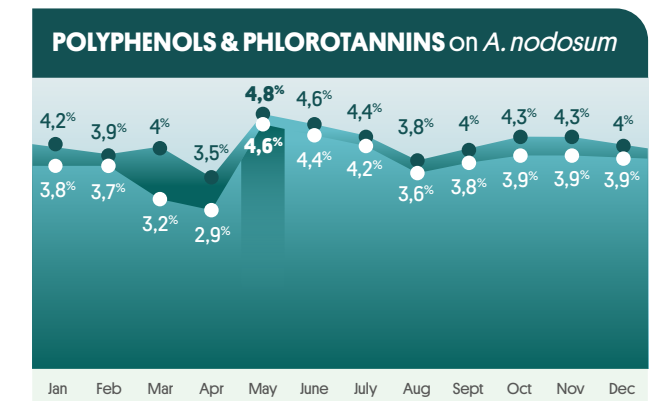
Fluctuations in % of Alginic acid depends by age of the thallus harvested and season.



Mannitol is higher in summer months, due to increasing need of protection from dessication.



Fucoidans content is associated with the season of harvest and local condition.



The concentration of Polyphenols and Phlorotannins is influenced by light irradiance and by the age of the thallus.

EXTRACTION METHODS

Valagro uses different methods of extraction, depending on the final solution needed

ALKALINE EXTRACTION + MICROGRANULATION

Based on a chemical proprietary extraction process, it is possible to separate and concentrate the needed active ingredients for a specific formula. The microgranulation process guarantees fast and total solubility of all actives.

FILTERED SEAWEED CREAM

Physical proprietary extraction process based on the micronization of the seaweed to increase the surface of exchange between the seaweed and the solution. The Phyto-active ingredients become high bioavailable. This method allows the preservation of all the natural seaweed characteristics.

ALKALINE LIQUID EXTRACTION

With this method, based on the alkaline chemical proprietary extraction process, all the active ingredients of the seaweed remain in liquid form. In this way is possible to obtain a versatile semi-finished product for specific formulations with other actives.

MILD-ALKALINE + MICROGRANULATION

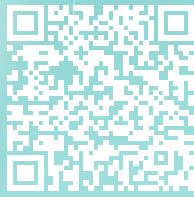
Based on a chemical proprietary extraction process, with this method is possible to preserve specific active ingredients needed for target solutions required in some markets.



FOCUS ON MC LINE



FOCUS ON MC LINE







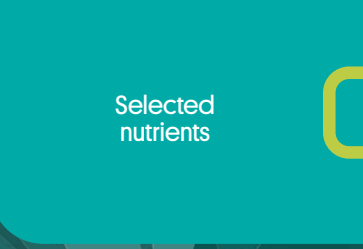

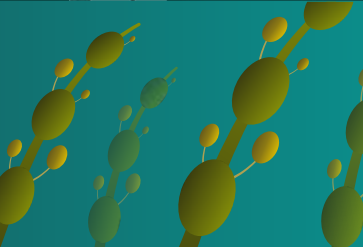


Listen to podcasts



FORMULATION

The Geapower® approach is based on optimized extraction processes and combined with other powerful ingredients in a final formulation that allow us to use the different *Ascophyllum nodosum* extracts in creating specific solutions. **The final goal is to develop synergies among plant extracts, other actives (like micronutrients, carbohydrates, etc...) and seaweed extracts to have formulations that act on specific physiological processes of the plant.**

			VEGETATIVE PRODUCTIVE BALANCE	PHOTO-SYNTHETIC ACTIVITY	ENVIRONMENTAL CONDITIONS	FLOWERING AND FRUIT SET	YIELD	QUALITY
Ascophyllum nodosum BLEND 1	 ALKALINE LIQUID EXTRACTION	 Plant Extract	 Selected nutrients			✓	✓	✓
Ascophyllum nodosum BLEND 2	 ALKALINE EXTRACTION + MICRO-GRANULATION	 Other natural actives		✓	✓		✓	✓
Ascophyllum nodosum BLEND 3	 FILTERED SEAWEED	 Selected nutrients		✓	✓		✓	✓
Ascophyllum nodosum BLEND 4	 MILD-ALKALINE EXTRACTION + MICRO-GRANULATION	 Plant Extract		✓	✓		✓	✓



increases photosynthetic activity and production

MC CREAM

helps plants to utilize light energy more efficiently, increasing photosynthetic activity.

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.

Foliar application



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	2-4 L/ha	2-3 applications during flowering until fruit set
	2-4 L/ha	2-3 applications from flowering
	2-3 L/ha	2-3 applications at 7-10 days interval from flowering
	2-3 L/ha	1-2 applications at tuber formation
	200 mL / 100 L	2-3 applications during early stages of development

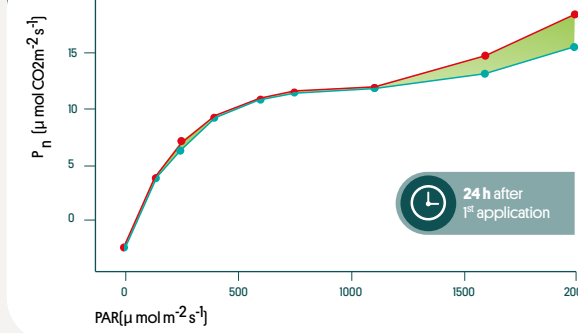
SIZE CHART

1 L 10 L 200 L

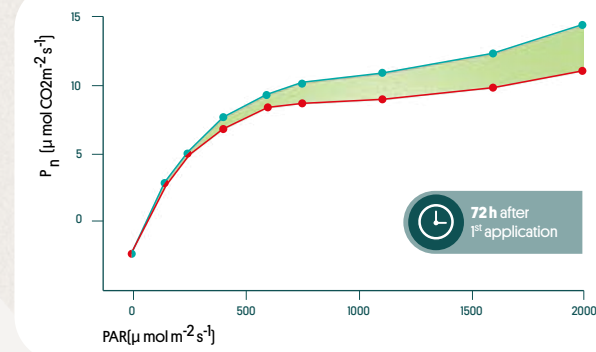
LIGHT CURVE RESPONSE: on tomato plants growth in optimal light conditions

This experiment showed the light response of tomato plant leaves to different Photosynthetically Active Radiation [PAR] with and without the application of MC CREAM leaves grown in optimal light conditions (800-1000 PAR).

RESULTS AFTER 1st APPLICATION OF MC CREAM

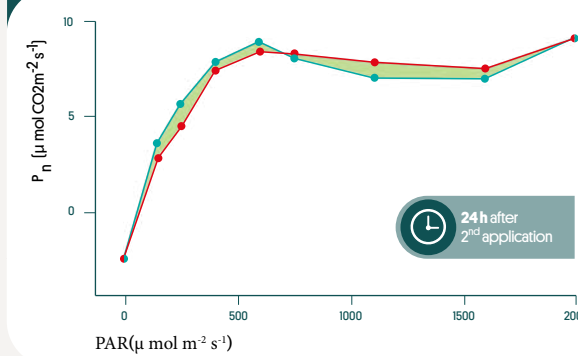


EXPERIMENT PERFORMED IN OPTIMAL LIGHT CONDITION

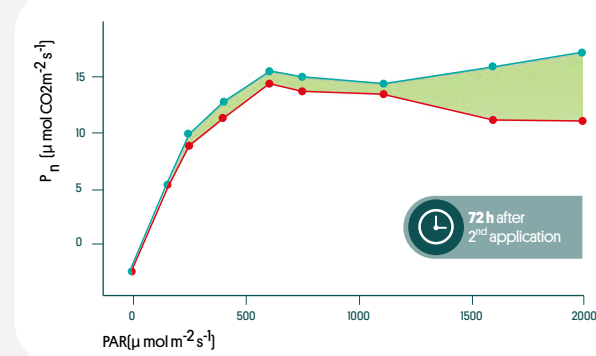


This means that MC CREAM optimizes photosynthetic activity both in normal conditions and with light stress (1500 – 2000 PAR in case of tomato).

RESULTS AFTER 2nd APPLICATION OF MC CREAM



EXPERIMENT PERFORMED IN OPTIMAL LIGHT CONDITION



The second application of MC CREAM increased, again after 72 h, the Net Photosynthetic rate by approx. +55% vs. UTC when measured between 1600-2000 PAR level. This means that the regular application of MC CREAM favors the optimization of photosynthesis. This means that the regular application of MC CREAM favors the optimization of photosynthesis.



improves vegetative-productive balance

MC EXTRA

Supports balanced plant growth for an optimized production load well supported by an adequate vegetative development.

MC EXTRA is a readily and totally soluble concentrate in microgranules formulation based on active biomolecules extracted from the algae *Ascophyllum Nodosum*.

The biologically active ingredients ensure an optimized plant growth while maintaining optimal, balanced production.

Foliar application



Directions for use

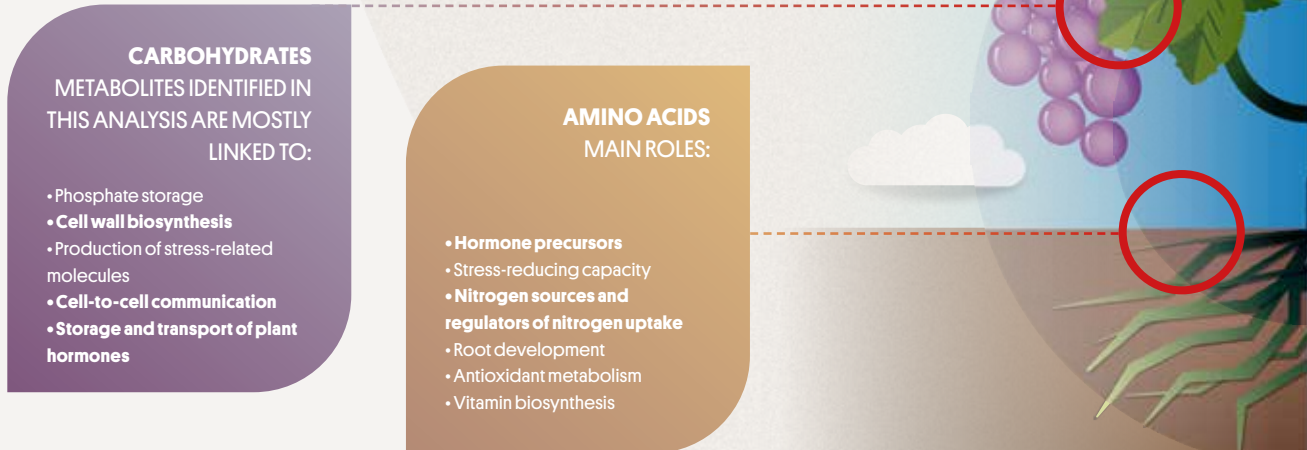
CROP	DOSE	PERIOD OF APPLICATION
	0,5-1 kg/ha	2-3 applications during flowering until fruit set
	0,5-1 kg/ha	2-3 applications during early stages of development
	0,5-1 kg/ha	2 applications at vegetative development
	0,5-1 kg/ha	2-3 applications during early stages of development

SIZE CHART



METABOLOMIC APPROACH: and MC EXTRA

The investigation at metabolome level (on soybean) showed that MC EXTRA showed a higher level [significance level =0,05] vs UTC of metabolites linked to the biosynthesis of amino acids and carbohydrates, that are linked to several actions showed in the figure below.



MC EXTRA showed the capability to stimulate the production of metabolites linked to the production of amino acids as hormone precursors and regulators of nitrogen uptake. The product is also responsible for the stimulation of the production of carbohydrates that are linked to cell wall biosynthesis, cell-to-cell communication, and storage and transport of plant hormones.

MC EXTRA showed also effective in modulating hormonal balance (auxins/cytokinins ratio).

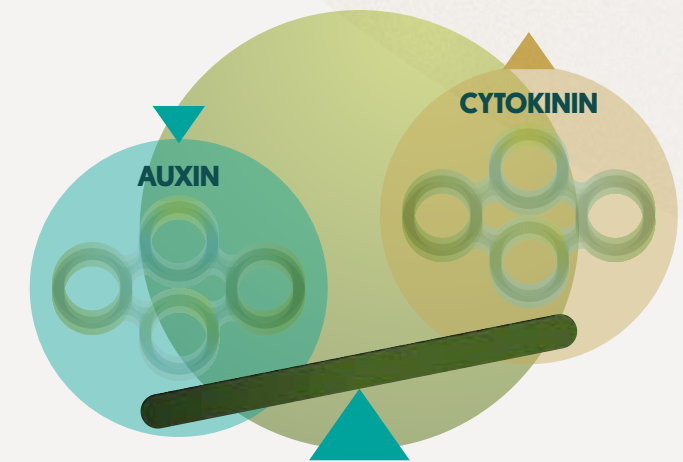
The product acts by downregulating the compounds linked to the biosynthesis of auxins:

- S-adenosyl-L-homocysteine (SAH): -3 vs Control;
- [indol-3-yl] pyruvate: -4 vs Control.

and upregulating the compounds linked to the biosynthesis of cytokinin:

- ciszeatin riboside monophosphate: +3 vs Control;
- dihydrozeatin-9-N-glucoside: +4 vs Control.

In the scientific community a regulation above 1,5 or below -1,5 is considered significant.





stimulates flowering and fruit setting

MC SET

Supports the plant in the crucial phases of flowering and fruit setting in optimal and suboptimal environmental conditions.

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

The complex of biomolecules gives the product a considerable capacity to stimulate the flowering and fruit setting processes.

Foliar application



Directions for use

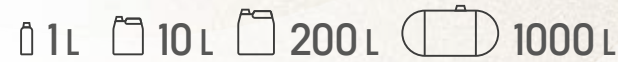
CROP	DOSE	PERIOD OF APPLICATION
ALL	2 L/ha	2 or more treatments (every 7-10 days) according to crop cycle, starting from pre-flowering
	150-200 mL/ha	



This product contains AR technology.

Follow the instructions on pg 4-5

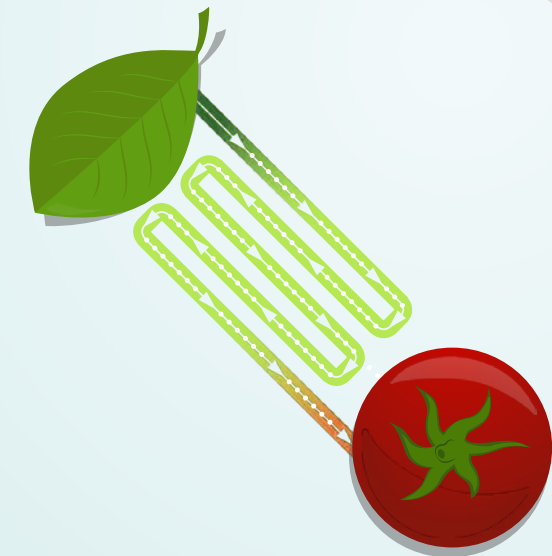
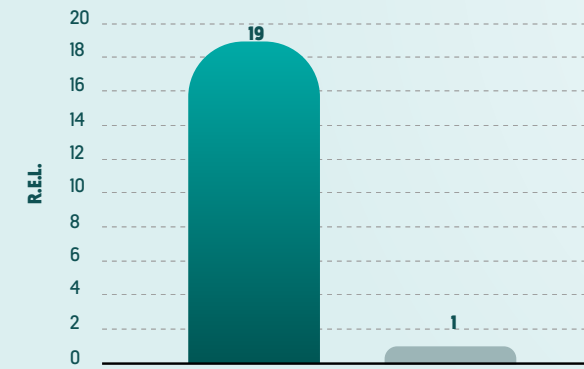
SIZE CHART



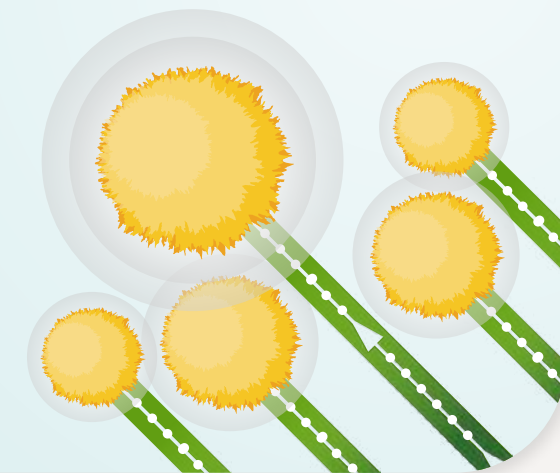
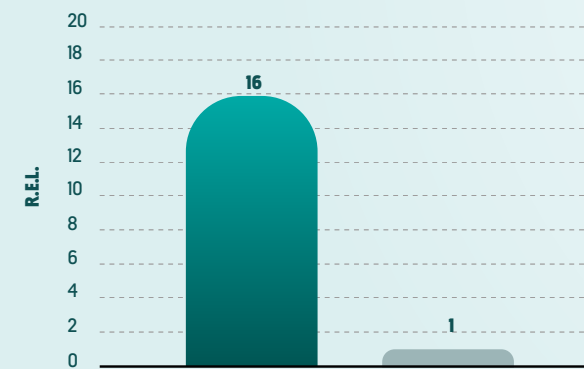
GENOMIC APPROACH ON MC SET: The effect on solute transport helps the plant to optimize the use of the energy.

MC SET increased the activation of genes involved in specific physiological functions of flowering and fruit setting [as per TAIR description – www.arabidopsis.org].

GENE MARKER FOR SOLUTE TRANSPORT



GENE MARKER FOR POLLEN DEVELOPMENT AND POLLEN TUBE GROWTH



MC SET UTC





anti-stress and growth activator

MEGAFOL

Promotes vegetative growth in normal conditions as well as during environmental stresses.

MEGAFOL 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.



Foliar application



Directions for use

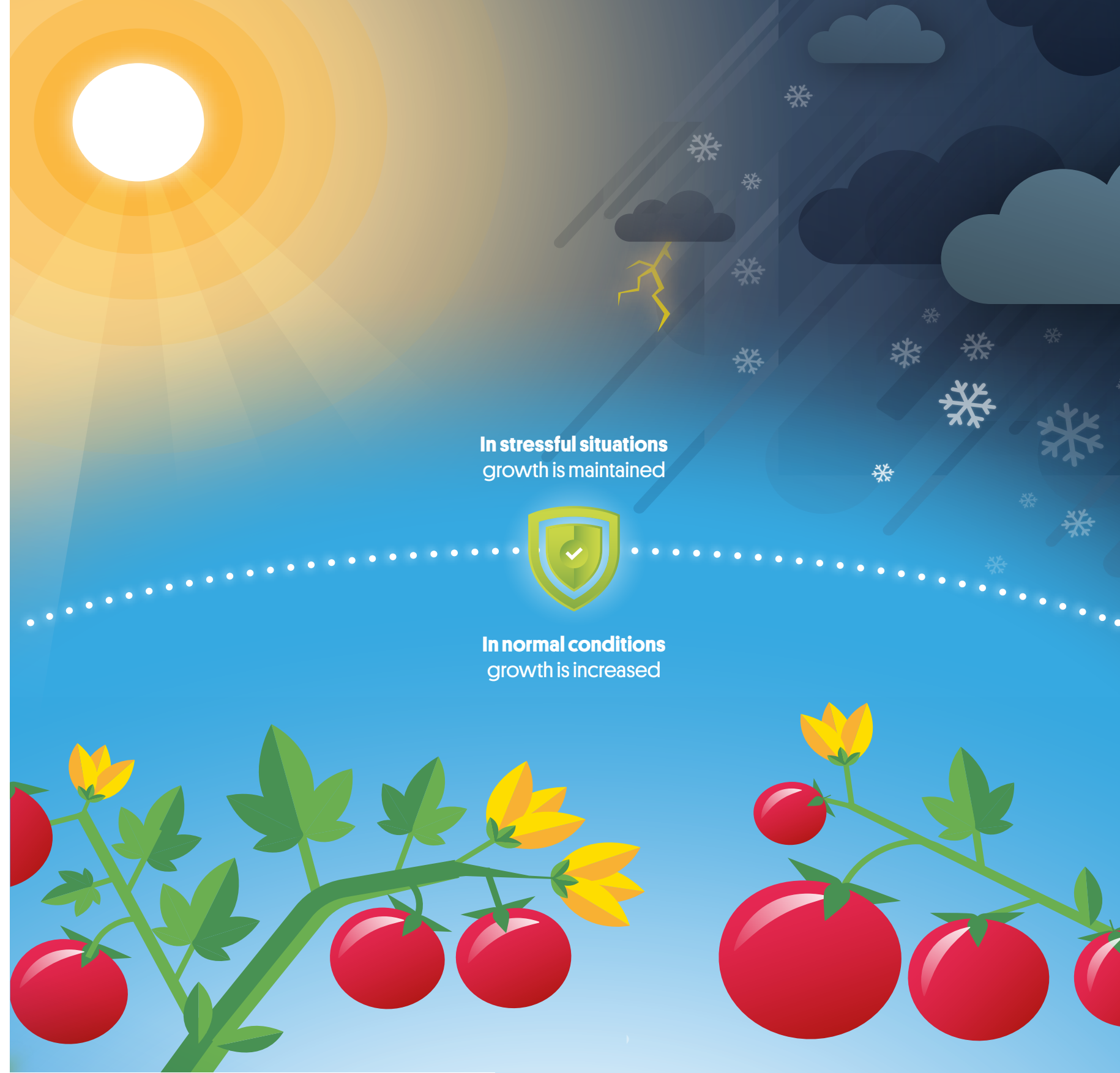
CROP	DOSE	PERIOD OF APPLICATION
	2-3 L/ha	pre-flowering, post-setting, fruit development and in all cases of plant growth stop
	2-3 L/ha	1-2 applications during growth cycle in case of abiotic stresses
	150-250 mL/hL	
	2-3 L/ha	in open field and greenhouses after transplant every 10-15 days



This product contains AR technology.

Follow the instructions on pg 4-5

SIZE CHART



In stressful situations growth is maintained



In normal conditions growth is increased

Protects from the hardest blows



FOCUS ON ANTI-STRESS ACTIVITY “Omic” approaches



As a result of VALAGRO research and activity, MEGAFOL is a biostimulant **able to reduce the impact of abiotic stress events on crop production**. A lot of OMICS approaches tests and field trials demonstrate that Megafol is an important, safe, and natural product able to improve plant growth and yield in crops incurring stresses.



Among the omic technologies, METABOLOMICS has also been used recently, to highlight the action of Megafol in stress conditions. It has been observed that the product is capable of modulating specific classes of metabolites, connected to the response to abiotic stress.

TRANSCRIPTOMICS % Up-regulated genes [GO-Groups] by Megafol on *Arabidopsis thaliana* in NORMAL CONDITIONS.

MEGAFOL was involved in the activation of 127 GENES with a change fold greater than 3 compared to the untreated test >

Among these differentially expressed genes our microarray showed that the main product the action was related to **genes involved in plant stress responses**. In this test, after the application of Megafol, the stress was not induced in order to verify the action of the product in normal conditions. In other tests where we applied the product and then induced stress, plants showed lower expression of related genes even when strongly stressed, due to the efficacy of the product in helping the plant to tolerate more the stress [Petrozza et al., 2004].



FOCUS ON ANTI-STRESS ACTIVITY “Omic” approaches



The phenomic approach allows a high-throughput, multi-spectrum image analysis to detect plant morphometric and physiological parameters: morphology, architecture, and leaf color [via RGB, or red, green blue light images in the visible spectrum]. The phenomic approach also reveals differences in the water content and other important parameters by using UV fluorescent emission and NIR – near-infrared images for photosynthetic efficiency.

DROUGHT STRESS CASE

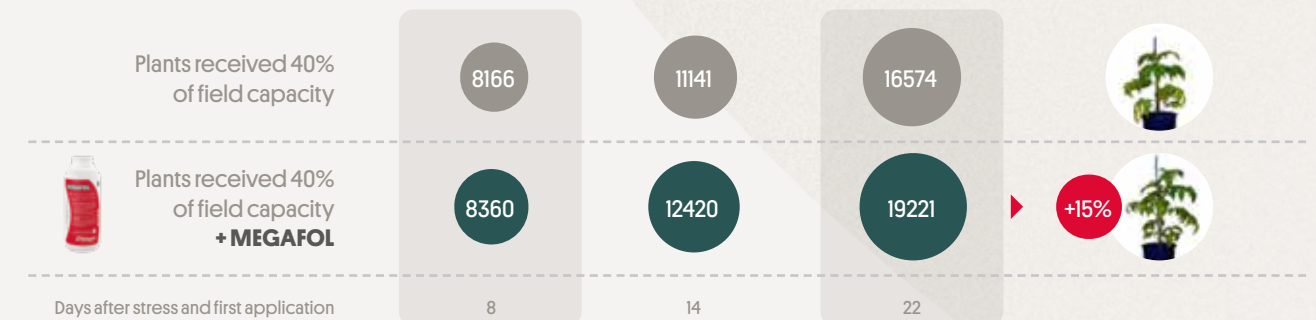
Phenomic Trial on Tomato

CV. San Marzano Nano

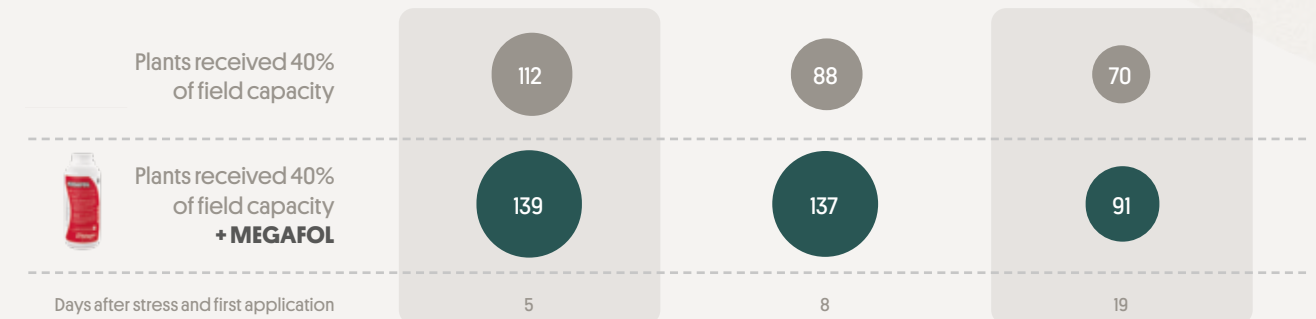


DOSAGE (L/ha)	3
NR APPLICATIONS	3
TIMING OF 1 ST APPLICATION	15 days after transplant
DAYS AFTER TREATMENT	8-14-22

Efficacy % on DIGITAL BIOMASS calculated vs the UTC DS



Stomatal Conductance [mmol H₂O m⁻² s⁻¹]





root promoter
reduces
transplant stress

RADIFARM

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.



Fertigation



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	{ 5 L/ha }	At transplant, after 7 days or at the beginning of vegetative restarting
	{ 1.5-2 L/m ² of water }	2-3 treatments every 7 days after transplant
	{ 5 L/ha }	At transplant and after 7 days
	{ 150-200 ml/ha }	At transplant and after 7 days

SIZE CHART



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



UNTREATED

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 signaling results in a more intense coloration. The blue distribution can be seen in tissues where signaling is activated.





improves plant vigor under salinity stress

RETROSAL

Promotes and controls plant growth in 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.



Fertigation



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
ALL	20-25 L/ha	clay soils - during all crop cycle
ALL	10-15 L/ha	sandy soils - during all crop cycle



Focus on

SIZE CHART

10 L 20 L

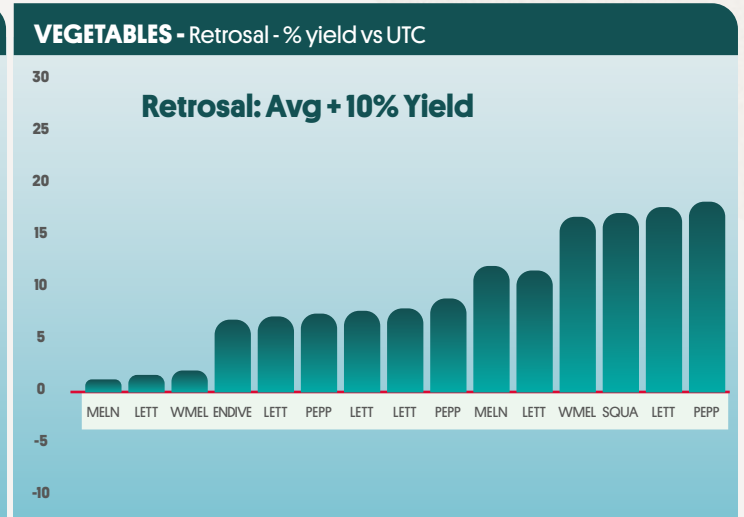
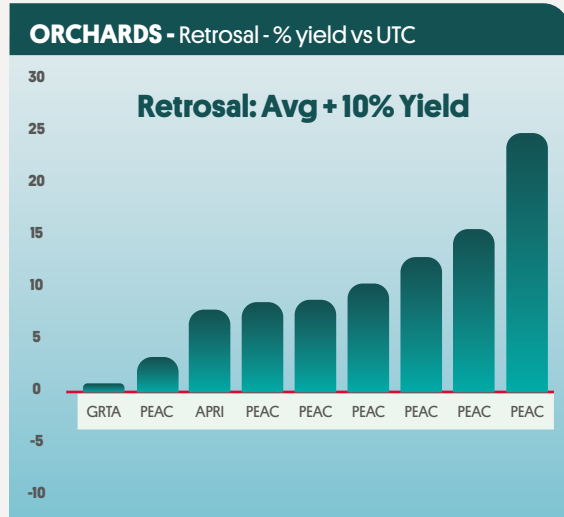
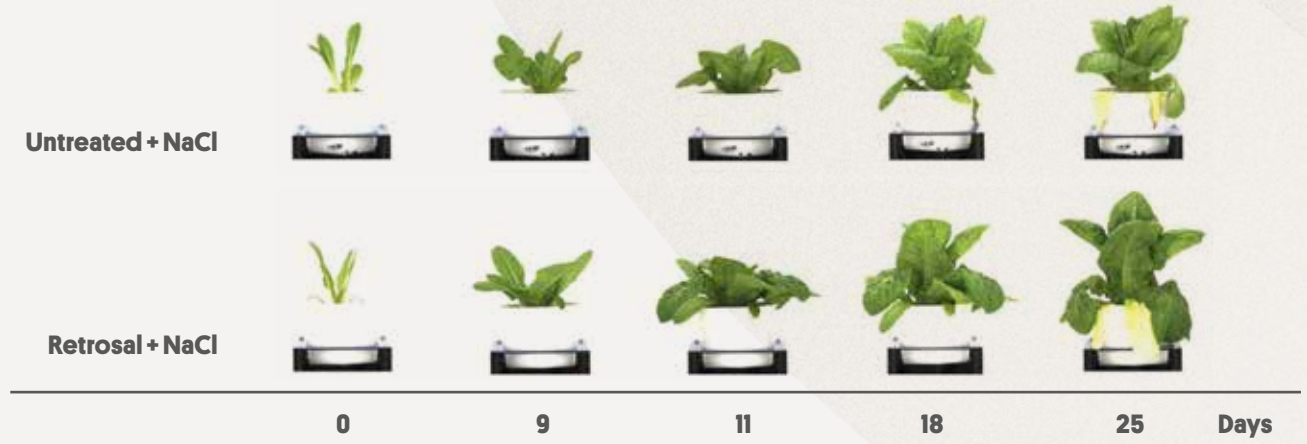


RETROSAL: how does it work in salt conditions

Accumulation of salts in soil is one of the most important worldwide problems that induce crop losses. Soil salinization, arising from either natural or human-induced causes, led to an increase in the concentration of dissolved salts in the soil profile to a level that impairs food production, environmental health, and socioeconomic well-being [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 conditions and confer protective properties. In addition, it induces the biosynthesis of compatible osmolytes that can afford the protection of cells against a variety of salinity stress, induces the biosynthesis of physical protective barriers that reduce the accumulation of toxic compounds, and finally improves energy pathways to support plant growth under salinity conditions.

RETROSAL IMPROVES PLANT METABOLIC ACTIVITY UNDER SALINITY STRESS





ripening promoter

SWEET

Increases sugar concentration.

SWEET, is a biostimulant that promotes the sugar production, and it accelerates the biochemical processes of ripening.

SWEET shows synergetic effect in combination with MEGAFOL to speed up the polysaccharides uptake and the use of micronutrients to optimize ripening.

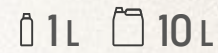
Foliar application



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	{ 3-4 L/ha }	at the end of fruit enlargement at the beginning of fruit ripening
	{ 2.5-3 L/ha }	pre-veraison; veraison
	{ 2.5-3 L/ha }	pre-veraison; veraison
	{ 1.5-2.5 mL/ha }	pre-veraison application every 10-15 days
	{ 2-2.5 L/ha }	from fruit development every 10-15 days
	{ 2.5-3 L/ha }	from whitening of fruits every 8-10 days
	{ 2.5 L/ha }	2 treatments during root growth

SIZE CHART



VITASEVE

stimulates cambium activity

Plant sap circulation optimization and improved lignification.

VITASEVE is a solution, coming from exclusive GeaPower technology [GEA841], which can stimulate the activity of cambium, responsible to produce efficient lymphatic vessels and new wood. Used consistently for each crop cycle, VITASEVE promotes the production of new wood and optimizes sap circulation in plants. VITASEVE prevents premature aging of the wood, increasing production capacity and the profitability of the plants.

Foliar application

Directions for use

PERIOD OF APPLICATION	DOSE	CROP
2 applications, the first one during vegetative development, the second one in pre-harvest.	{ 5 L/ha }	
during post-setting.	{ 5 L/ha }	



SIZE CHART





increases
crop water
productivity

TALETE

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

TALETE is the new solution specifically developed to encourage sustainably production through proper water management both in conditions of adequate water availability and permanent or temporary water scarcity.



Fertigation



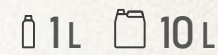
Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	{ 5-10 L/ha }	from fruit setting
	{ 10 L/ha }	from fruit setting
	{ 5-10 L/ha }	1° application, from flowering/fruit setting
	{ 10 L/ha }	from fruit setting
	{ 5-10 L/ha }	tuber initiation
	{ 5-10 L/ha }	from 4 leaves unfolded to tasseling [with dosage of 5 L/ha, 2 applications apart are suggested.

INFORMATIONS

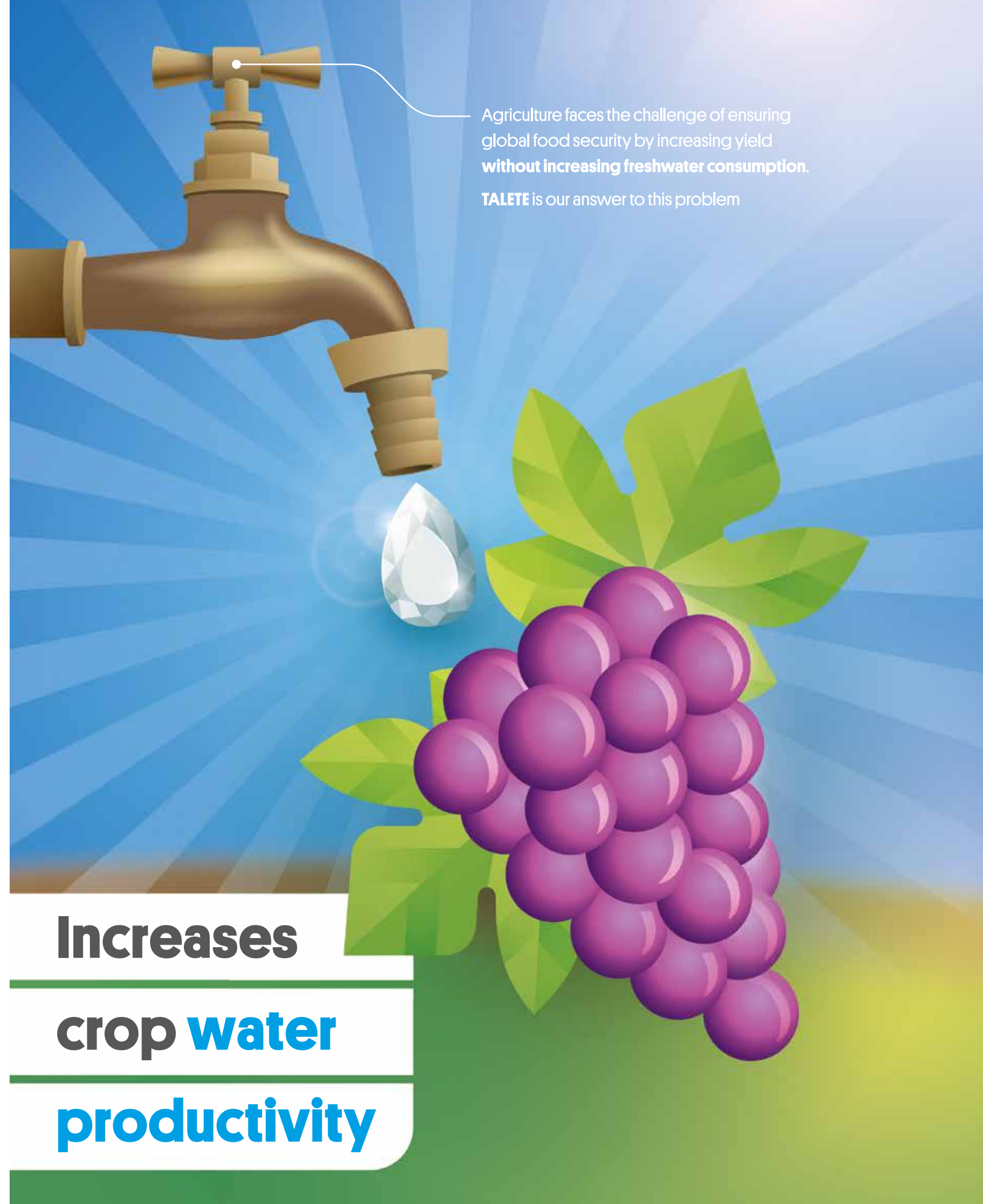
Apply TALETE through localized or extensive irrigation systems. For extensive irrigation system ensure a uniform distribution of treated water.

SIZE CHART



This product contains AR technology.

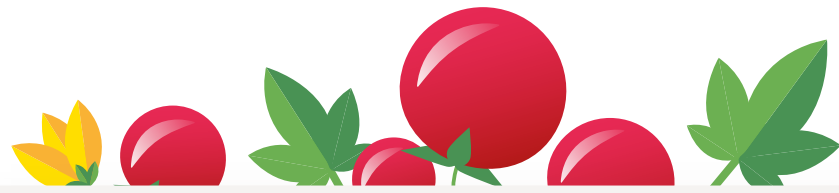
Follow the instructions on pg 4-5



Agriculture faces the challenge of ensuring global food security by increasing yield **without increasing freshwater consumption.**

TALETE is our answer to this problem

Increases crop water productivity



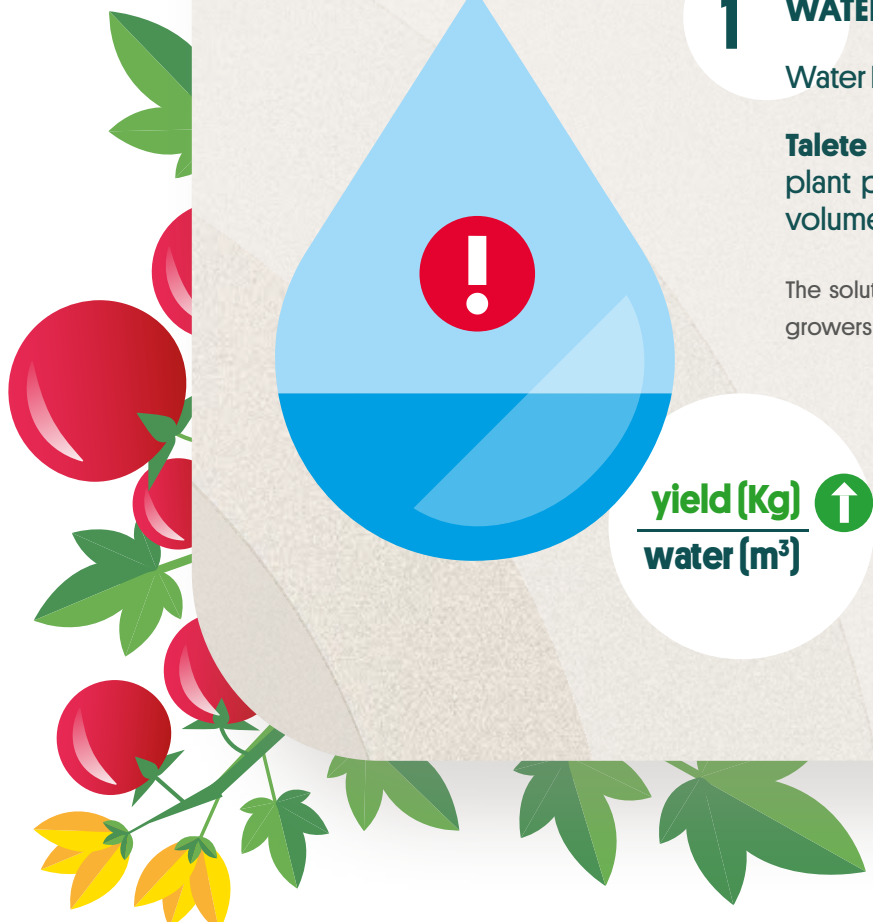
THE CROP WATER PRODUCTIVITY: A significant contribution to the Sustainable Development Goals

Economic or Biophysical gain from the use of a unit of water consumed in crop production.

<p>biomass, Kcal, proteins, income, jobs.</p>	<p>Some milestones:</p> <ul style="list-style-type: none"> Benefits are not always referred to yield: [kg] Water volume can be consumption [ET] or total water supply Water productivity is dimensional: [kg m⁻³; \$ m⁻³; jobs m⁻³] Water Productivity is not confined to the 'theoretical limits' 0-1
<p>water (m³)</p>	

TALETE: a step forward in water management

Composed of biomolecules of plant origin developed as per our proprietary GeaPower technology, TALETE acts directly on the plant physiology, helping the crops increase Crop Water Productivity both when water is available in adequate quantities and when there is a water scarcity, be it permanent or temporary.



1 WATER SCARCITY CONDITIONS

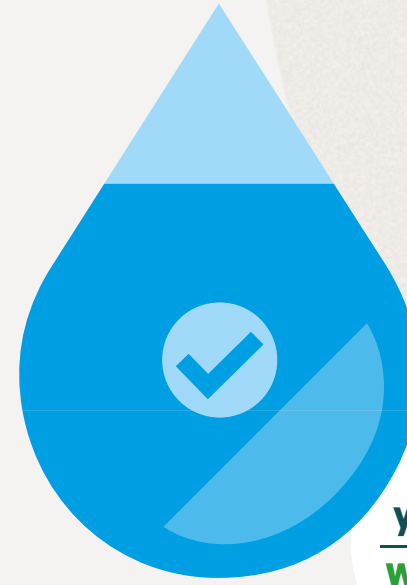
Water **IS** the limiting factor

Talete increases CWP through a biochemical action on the plant physiology maximizing yield, without changing the volume of water used for irrigation.

The solution represents a sort of safety net or water insurance every time growers face a problem with permanent or temporary water shortage.



$$\frac{\text{yield (Kg)}}{\text{water (m}^3\text{)}} \uparrow$$



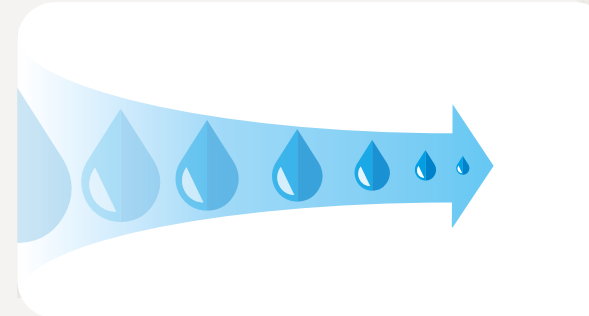
2 ADEQUATE WATER AVAILABILITY CONDITIONS

Water **IS NOT** the limiting factor

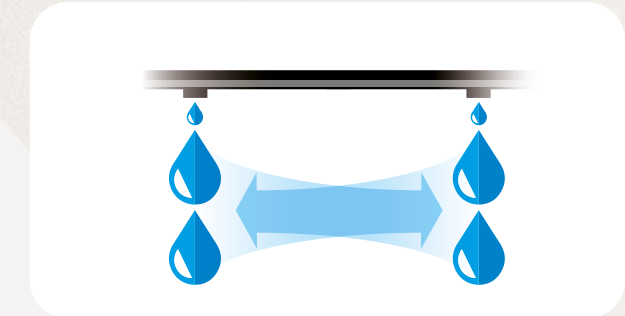
Talete improves Crop Water Productivity via the optimization of water provision by various irrigation techniques:

$$\frac{\text{yield (Kg)}}{\text{water (m}^3\text{)}} \uparrow$$

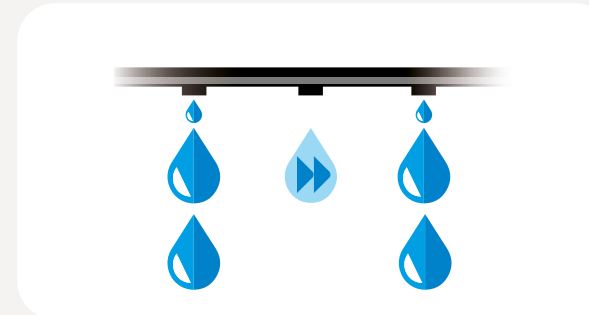
Reduction of irrigation volume



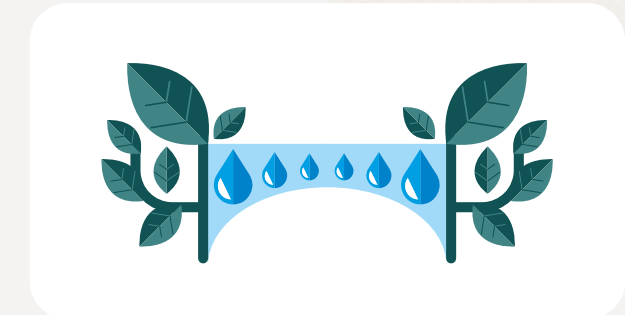
Enlarge irrigation intervals



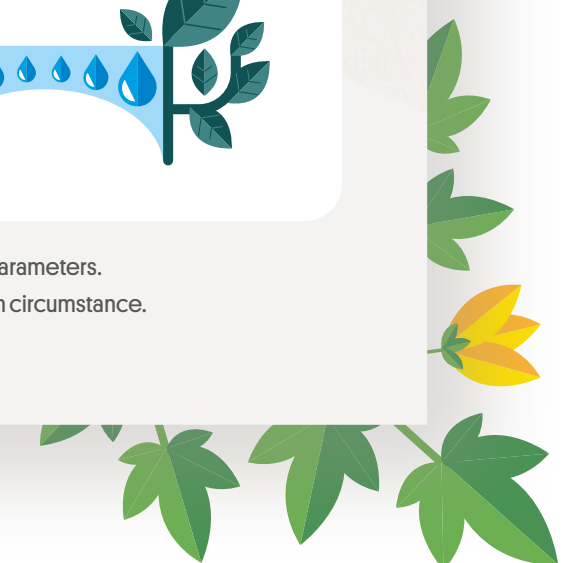
Skip of irrigation turns



Bridge effect



The reduction of water supply is only possible with the correct soil, plant end environmental parameters. Do not consider the reduction of water amount as an ordinary practice valid in each production circumstance. The use of technical instruments is strongly advised.





highest crop productivity in organic farming

VELTERY

Specific nutrient uptake and transport activator (P starvation). Aids abiotic stress recovery.

VELTERY is the **brand-new solution** developed by Valagro which supports and improves the **natural fertility of the soil**, maintaining **optimal conditions of growth** and **productivity**, in full respect of soil biology. Its use is allowed in **ORGANIC FARMING**.*



Fertigation

Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	10 L/ha	Starting 8-12 days from transplanting. Subsequent applications every 10-15 days.
	10 L/ha	From vegetative restarting, every 15 days



NEW PRODUCT

SIZE CHART



INFORMATIONS

* VELTERY is certified as fertilizer allowed in organic farming, in conformity with Reg EU 2021/1165, bringing application modalities of Reg (EU)2018/848, related to organic production and the labeling of organic products.



VELTERY: Focus on starvation

Starvation is defined as any process that results in a change in the state or activity of a cell or an organism [in terms of movement, secretion, enzyme production, gene expression, etc.] because of a starvation stimulus, deprivation of nourishment [http://www.informatics.jax.org/vocab/gene_ontology/GO:0042594]. When P starvation happens, several mechanisms of P acquisition are activated to maintain physiological P concentrations. **VELTERY activates the GO-Groups and related genes involved in «response to starvation», thus contributing in activating specific nutrient uptake and transport.**

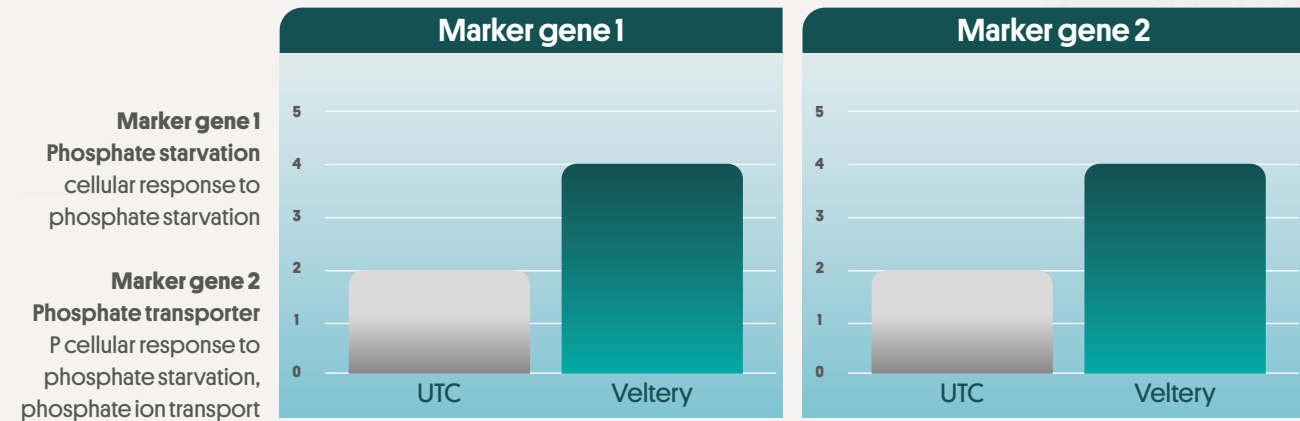
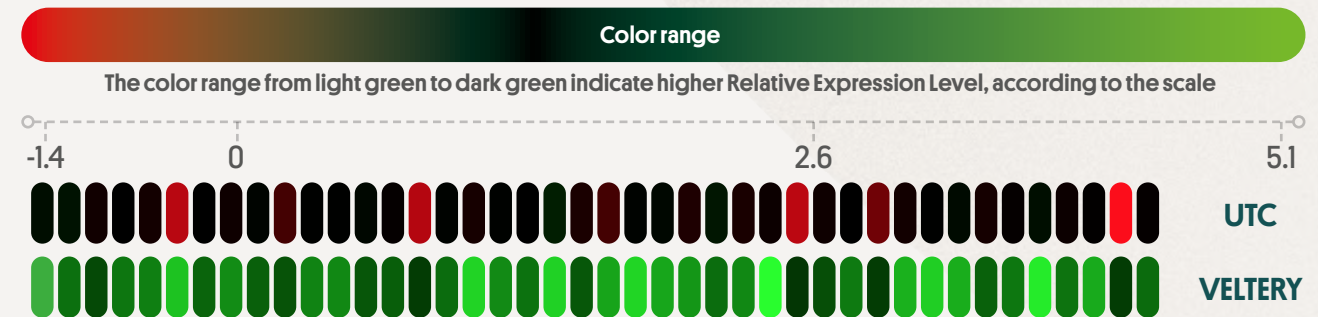
GENE ONTOLOGY (GO) TERM ENRICHMENT

- 1 Response to starvation P-value:0.0008
- 2 Response to topological incorrect protein
- 3 Cellular response to stress
- 4 Response to wounding
- 5 Response to water deprivation
- 6 Response to cold
- 7 Response to heat P-value:0.008
- 8 Response to oxidative stress
- 9 Response to osmotic stress
- 10 Other Biological processes
- 11 Response to hypoxia



GO-Groups modulated of Veltery that satisfying p-value cut-off 0.01.

Many genes have been identified as "marker" of response to phosphate starvation.





improves the rhizosphere fertility and the vegetative productive balance

VIVA

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.



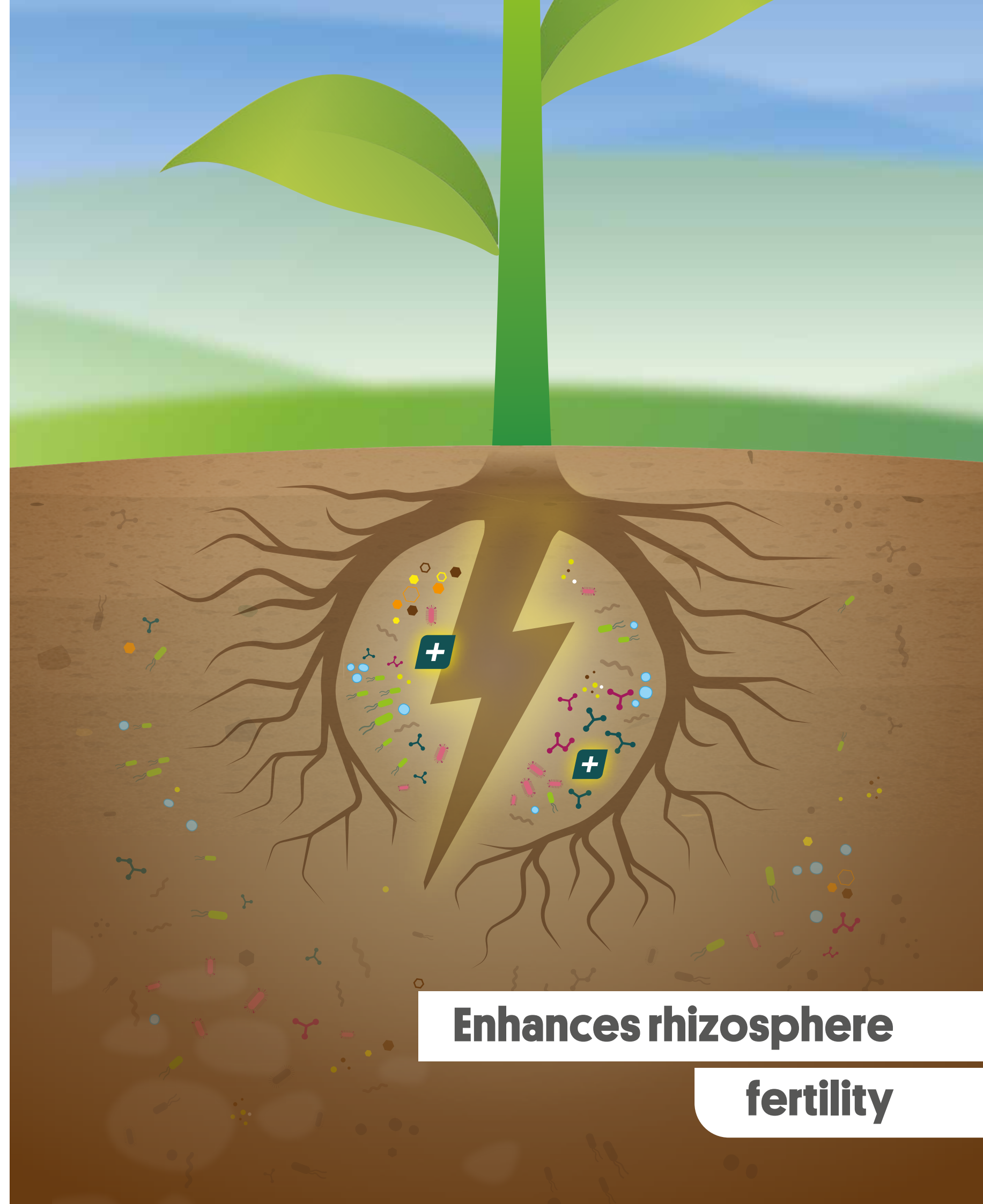
Fertigation



Directions for use

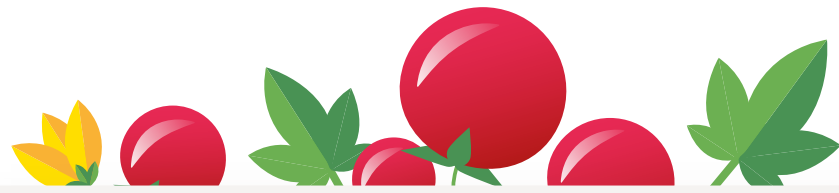
CROP	DOSE	PERIOD OF APPLICATION
	{ 20-30 L/ha }	from vegetative regrowth until post-fruit setting with 2-3 applications
	{ 2-3 L/1000m ² }	post-transplant applications, plant regrowth and post-fruit setting
	{ 2-3 L/1000m ² }	post-transplant applications, vegetative growth and post-fruit setting each 10-15 days
	{ 2-4 L/1000m ² }	from post-transplant up to end of crop cycle each 15-20 days
	{ 10-20 L/ha }	localized during sowing

SIZE CHART



Enhances rhizosphere

fertility



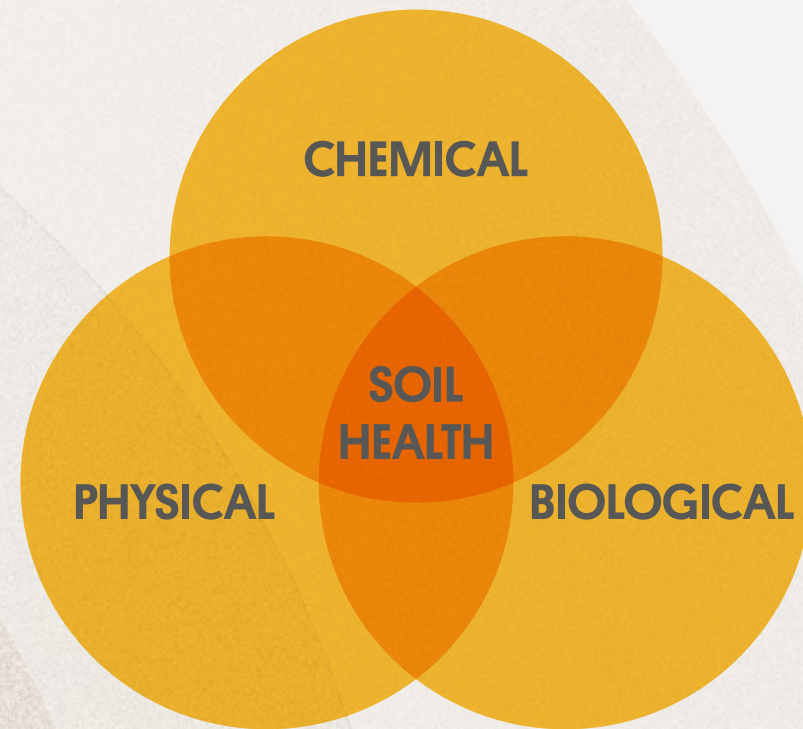
VALAGRO'S CONTRIBUTION FOR SOIL HEALTH

Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans.

Soil performs five essential functions:

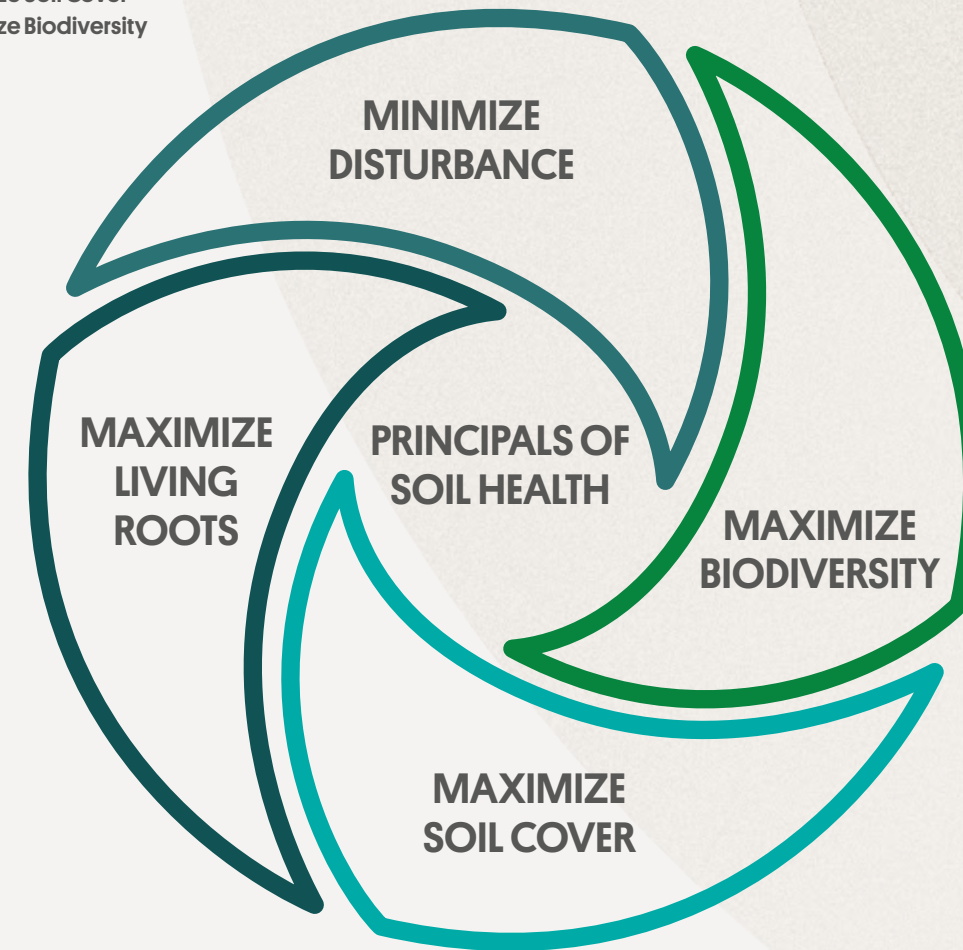
- Regulating water - Soil helps control where rain, snowmelt, and irrigation water go. Water flows over the land or into and through the soil.
- Sustaining plant and animal life - The diversity and productivity of living things depend on soil.
- Filtering and buffering potential pollutants - The minerals and microbes in the soil are responsible for filtering, buffering, degrading, immobilizing, and detoxifying organic and inorganic materials, including industrial and municipal by-products and atmospheric deposits.
- Cycling nutrients - Carbon, nitrogen, phosphorus, and many other nutrients are stored, transformed, and cycled in the soil.
- Providing physical stability and support - Soil structure provides a medium for plant roots. Soils also provide support for human structures and protection for archeological treasures.

Soil Health is regulated by the interactions of the physical, chemical and biological properties of soils.



MAIN PRINCIPLES TO MANAGE SOIL FOR HEALTH

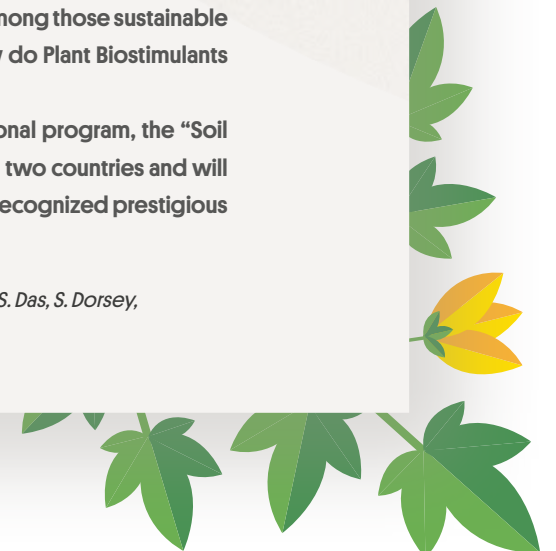
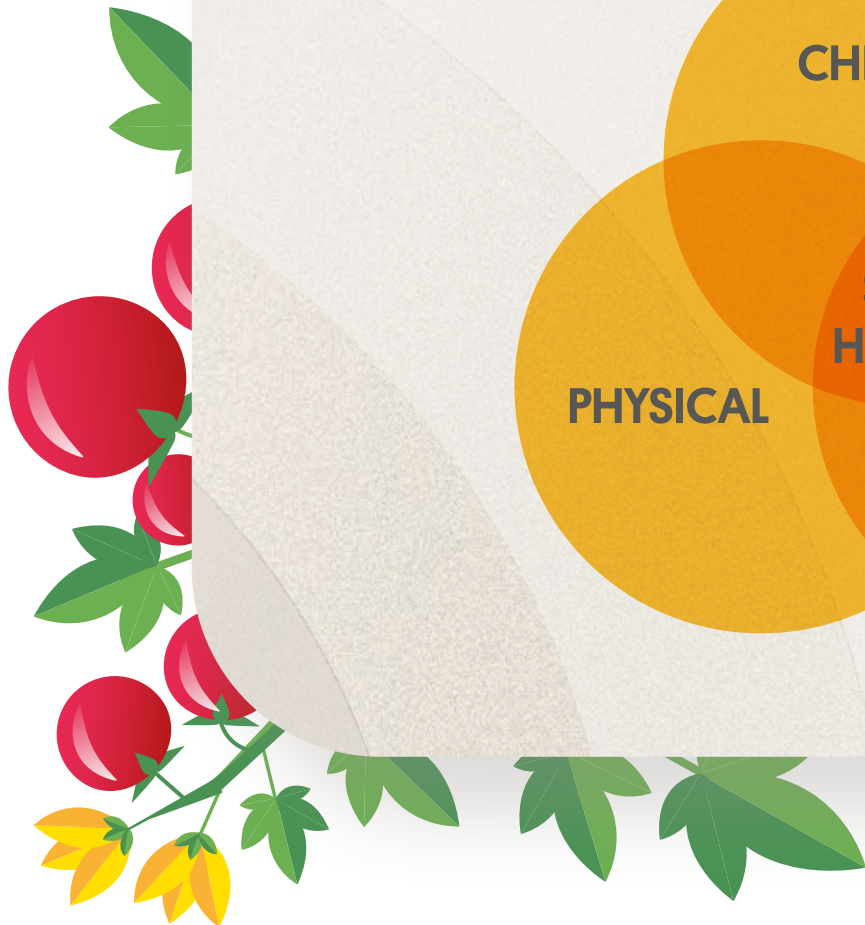
- Maximize Presence of Living Roots
- Minimize Disturbance
- Maximize Soil Cover
- Maximize Biodiversity



Enriching soil enhances life from the microscopic scale to the global scale. Adopting soil health systems can increase microbial diversity, improve farmer livelihood, increase agricultural productivity, and build climate resilience. As a result, downstream communities receive cleaner water, ecosystem health is restored, rural landscapes are sustained, and climate change is held in check for future generations. Biostimulants can play a pivotal role among those sustainable and good agronomical practices that contribute to enhancing soil health parameters. But How do Plant Biostimulants influence biologicals and nutrient cycling dynamics in the soil, considering it as a living organism?

Our biostimulant VIVA, the rhizosphere fertility improver, is the protagonist of a new international program, the "Soil Health Project", whose aim is to answer to this question. The program, which is now focused on two countries and will see further development in other geographies in the future, has been made in partnership with recognized prestigious Universities and CRO. Stay tuned, we are creating a sustainable future for people and nature.

Source: USDA - Natural Resources Conservation services / Soils Soil health Institute [USA] G. S. Toor, Y. Y. Yang, S. Das, S. Dorsey, G. Felton [2021]: Soil health in agricultural ecosystems: current status and future perspectives – chapter four.





highest crop productivity, highest return for farmers

Foliar application

YIELDON

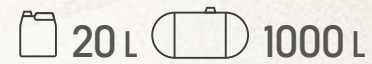
Valagro switches "ON" row crops profitability.

The most innovative technologies such as Genomics, Next Generation Sequencing is concentrated in the revolutionary YieldON: 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.

Directions for use

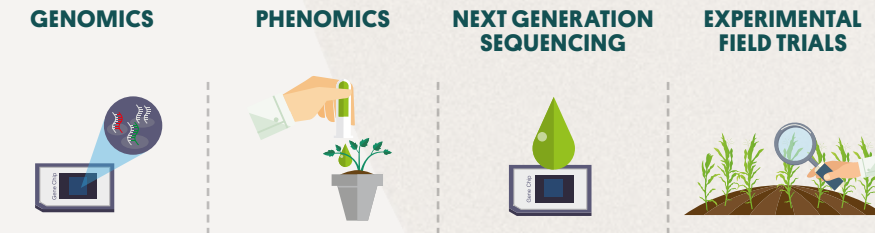
CROP	DOSE	PERIOD OF APPLICATION
	{ 2 L/ha }	Wheat: 1 application at flag leaf growth stage
	{ 1-2 L/ha }	Soybean: 2 applications: the 1st at Vn/R1 growth stage, the 2nd at R3/R5 growth stage
	{ 2 L/ha }	Corn: 1 application At V4-V6 growth stage
	{ 1-2 L/ha }	Rice: 2 applications: the 1st at the beginning of booting, the 2nd at heading growth stage 1-2 l/ha
	{ 2 L/ha }	Cotton: 2 applications. The first mixed with pesticide/herbicide treatment, the 2° at the beginning of flowering
	{ 2 L/ha }	Sunflower: 1 application at 4-6 leaf growth stage

SIZE CHART



YIELDON: the innovation way to get it

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



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

Thanks to the last "Next Generation Sequencing Technology" we obtained an accurate detection of all expressed genes, even for agronomically relevant crops like corn and soybean. Our results complement at the molecular and morphometric/physiological levels the evidence obtained in field trials.



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

	Wheat +0,30 t/ha ROI* 3:1 <small>Results based on avg of 22 official trials, application at 2 l/ha flag leaf-heading stage</small>		Soybean +0,27 t/ha ROI* 9:1 <small>Results based on avg of 38 official trials, application at 1 l/ha at end of V-early R stage</small>
	Rice +0,66 t/ha ROI* 14:1 <small>Results based on avg of 6 official trials, application at 2 l/ha reproductive stage</small>		Corn +0,64 t/ha ROI* 7:1 <small>Results based on avg of 19 official trials, application at 2 l/ha V6-VT stage</small>

*The ROI was calculated based on an average value in the European market. Calculate with ROI calculator tool present in our Valagro Website www.valagro.com/en/yieldon/ the Return On Investment you can get thanks to YieldON



MICRONUTRIENTS

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

- 1** Prevent or cure micronutrient deficiencies
- 2** Improve crop quality
- 3** Complete plant nutrition



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





MICRONUTRIENTS

cure and prevention of boron deficiencies



Foliar application
Fertigation

BOROPLUS

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.



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	{ 1-2 L/ha }	2 applications at flowering end fruit setting
	{ 1-2 L/ha }	application at flowering and fruit setting
	{ 1-2 L/ha }	during crop cycle
	{ 100-200 mL/hL }	2-3 applications
 Fertigation	{ 4-6 L/ha }	during crop cycle
 Fertigation (Veg & Flowers)	{ 3-5 L/ha }	during crop cycle

SIZE CHART



CALBIT C

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 the foliar application.

cure and prevention of calcium deficiencies



Foliar application
Fertigation

Directions for use

PERIOD OF APPLICATION	DOSE	CROP
application every 7-10 days from flowering to fruit harvest	{ 2-3 L/ha }	
application every 7-10 days from flowering to fruit harvest	{ 2-3 L/ha }	
2-3 applications	{ 250-350 mL/hl }	
during crop cycle Fertigation	{ 10-30 L/ha per application }	



SIZE CHART





cure and prevention of micronutrient deficiencies

BREXIL

A COMPLETE RANGE OF COMPLEXED TRACE ELEMENTS

Brexil is a line of micronutrients complexed with LS (Lignin Sulphonate), which guarantees efficient micronutrient delivery and supports key plant physiological functions. Thanks to its high complexing capacity and good affinity with the vegetal tissues, BREXIL a faster and safer absorption and translocation of micronutrients through the leaf surface.





Furthermore, Brexil line is mixable with the most common pesticides.



Foliar application



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	2-4 kg / ha	2-3 applications
	1-3 kg / ha	2-3 applications
	1-3 kg / ha	2-3 applications
	100-300 gr / hl	2-3 applications

SIZE CHART



INFORMATIONS

Each Brexil line product has a different direction for use. Refer always to the indications on labels

LS complex improves nutrient absorption efficiency without leaving residue on the leaves and with no risk of phytotoxicity



Fastest and safest penetration of micronutrients

FOCUS ON LS: the benefits of the BREXIL LINE



LS [Lignin sulphonate] derives from lignin [one of the natural polymers found in wood and accounts for about 33% of its weight].

The LS used to produce BREXIL® is derived from a single source of softwood to assure:

- ✓ Consistent quality
- ✓ Specific ratio of monomers with high binding properties

BREXIL® double action



Micro-nutrient nutrition

LS physiological effect on leaf



Comparison between BREXIL® and EDTA

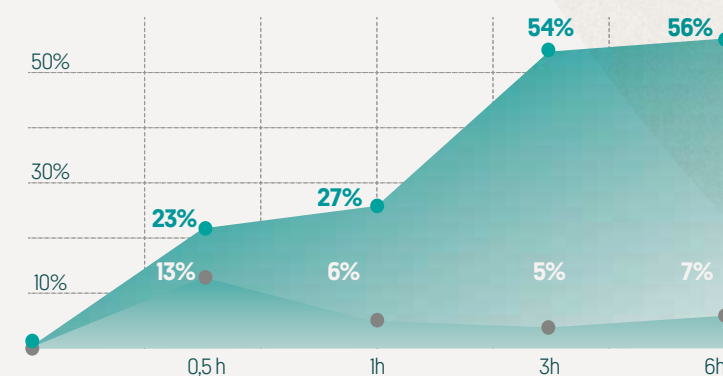
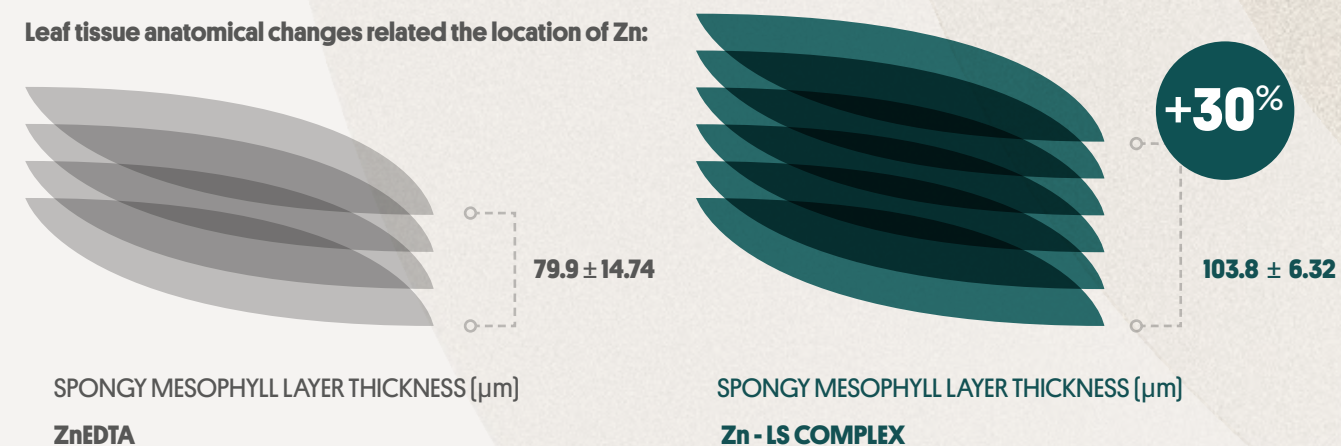
CHARACTERISTICS	BREXIL®	EDTA
Efficacy	● ● ●	● ● ●
Absorption rate	● ● ●	● ● ○
Leaf penetration	● ● ●	● ● ○
Phytotoxicity	NO	Potential*
Mixing proprieties	● ● ●	● ● ●
Physiological effect on leaf	● ● ●	NO

*minimum deviation between optimal and phytotoxic dose.

Excellent penetration

The solution is rapidly absorbed by the leaf and arrives quickly in the innermost, physiologically active tissue layers.

Leaf tissue anatomical changes related the location of Zn:

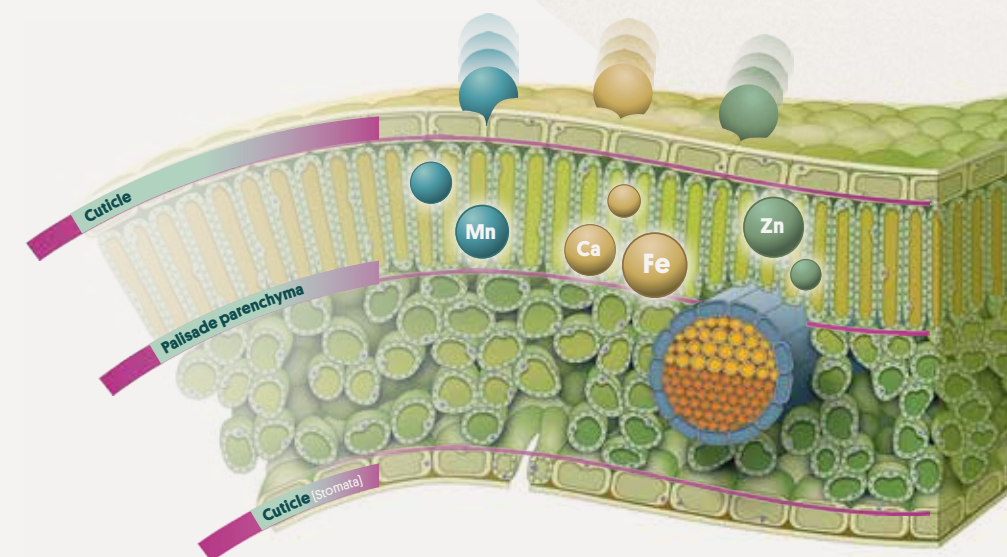


Fast absorption

After 30 minutes, already approximately 20% of the micronutrient is available inside the leaf, going up to 60% within 6 hours.

Physiological processes

Scientific research confirms that LS acts on key physiological processes of the plant [e.g. photosynthetic activity].





MICRONUTRIENTS

cure and prevention of iron deficiencies

FERRILENE

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 at Valagro's plant, according to the highest qualitative standard of production.



Fertigation

Directions for use

CROP DOSE PRODUCT



10-30 kg/ha

FERRILENE 4.8
FERRILENE TRIUM
FERRILENE



5-15 kg/ha

FERRILENE 4.8
FERRILENE TRIUM
FERRILENE



0,5-2 kg/ha

FERRILENE 4.8
FERRILENE TRIUM
FERRILENE



Focus on

SIZE CHART



COMPOSITION

PRODUCT	FERRILENE 4.8	FERRILENE	FERRILENE TRIUM
CHELATING AGENT	EDDHA	EDDHSA	EDDHA/EDDHSA
IRON SOLUBLE IN WATER	6%	6%	6%
CHELATED FRACTION	100%	100%	100%
% ORTHO-ORTHO IRON	4,8%	3,8%	4,0%
MANGANESE (Mn-EDTA)	0	0	1,0%
POTASSIUM (K ₂ O)	-	-	6,0%

IRON EDDHA VS EDDHSA EVALUATION | AVG results of trials realized by Valagro "CHELATION EFFECTIVENESS EDDHSA VS EDDHA"

SRI = Speed Relative Index (first data collect after treatment. Δ1)
PRI = Persistence Relative index (last data collect. Δn)

GREECE - ORANGE (4 Trials)			
Treatment	SRI	PRI	Application period
EDDHA	100	88	SUMMER
EDDHA	100	100	FALL

ITALY - PEACH (4 Trials)			
Treatment	SRI	PRI	Application period
EDDHA	122	89	LATE
EDDHA	100	100	SPRING

ITALY - PEAR (12 Trials)			
Treatment	SRI	PRI	Application period
EDDHA	128	147	EARLY
EDDHA	100	100	SPRING

ITALY - TABLE GRAPE (7 Trials)			
Treatment	SRI	PRI	Application period
EDDHA	142	130	EARLY
EDDHA	100	100	SPRING

CHOICE OF THE BEST IRON CHELATE | Our suggestions coming from our experience

CROP	TIMING OF APPLICATION OF IRON CHELATE	OUR RECOMMENDATION
Vegetables / annual crops	• At time of sowing or during growing cycle	• EDDHSA & EDDHA the most indicated. • Similar effectiveness
Fruit crops	• Beginning of vegetative growth • During fruit cycle	• EDDHA (HA/SA) for extreme or specific crop/soil conditions [example: pear North Italy or Citrus in Spain] • In other cases EDDHA or EDDHSA



more energy for your plants

GLIMO

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 bio-nutritional active ingredients. The synergistic action between micronutrients and these specific active ingredients in the formulation, allows the plant to grow better.



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	0,5-1 kg / ha <small>[½ to 1 lb/acre] repeated as necessary</small>	Post-emergence [2 to 6 trifoliolate leaves] Glyphosate application
	0,5-1 kg / ha <small>[½ to 1 lb/acre] repeated as necessary</small>	Post-emergence - Glyphosate application [V2 to v6]
	0,5-1 kg / ha <small>[½ to 1 lb/acre] repeated as necessary</small>	Pin head square to early bloom
	0,5-1 kg / ha <small>[½ to 1 lb/acre] repeated as necessary</small>	During vegetative growth

SIZE CHART



HIDROMIX S

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 to specific ratios among micronutrients in order to fulfill the needs of consumption of the main vegetable crops.

cure and prevention of micronutrients deficiencies

Foliar application
Fertigation
Hydroponic soilless crop



Directions for use

	PERIOD OF APPLICATION	DOSE	CROP
Foliar application	applications every 15-20 days starting from the first appearance of deficiency symptoms	80-100 g / hl	
	applications every 15-20 days starting from the first appearance of deficiency symptoms	50-80 g / hl	
Fertigation	preventive treatments	3-6 kg / ha	ALL
	curative treatments	10-30 kg / ha	ALL
Hydroponic soilless crop	during all crop cycle	20-50 g / m ³ of water	

SIZE CHART





cure and prevention of molybdenum deficiencies



Foliar application
Fertigation

MOLIBION

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 the symbiotic fixation of nitrogen in legumes.

VALAGRO EDTA

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

cure and prevention of micronutrients deficiencies



Foliar application
Fertigation



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	50-70 ml/100L	During all crop cycle
	80-120 ml/100L	During all crop cycle
	50-70 ml/100L	During all crop cycle
	1-1.5 L/ha	During all crop cycle
ALL Fertigation	1-2 L/ha	During all crop cycle

SIZE CHART

1 L

Directions for use

PERIOD OF APPLICATION	DOSE	CROP
applications every 10-15 days starting from the first appearance of micro deficiencies	50-80 g/hl	
applications every 10-15 days starting from the first appearance of micro deficiencies	80-100 g/hl	
preventive applications *Fertigation	3-6 kg/ha	ALL
curative applications *Fertigation	10-30 kg/ha	ALL

SIZE CHART

1 kg 5 kg





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.

- 1** Guaranteed balanced crop nutrition
- 2** Guaranteed high levels of production and quality
- 3** Ensured foliar and soil nutrition



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guarantees a complete nutrition

MASTER SUPREME

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 effects. The innovative formulations based on GeaPower Technology [GEA582] stimulates metabolism and ensures an increase in quantity and quality of production.



Fertigation



Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	250-500 gr / 1000 m ²	During the crop cycle
	250-500 gr / 1000 m ²	During the crop cycle
	250-500 gr / 1000 m ²	During the crop cycle

SIZE CHART



nourishes and supports the plant growth

MASTER




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.



Fertigation

Directions for use

PERIOD OF APPLICATION	DOSE	CROP
During the crop cycle	0.5-1.5 kg / 1000 m ² a day	
During the crop cycle	0.5-1.5 kg / 1000 m ² a day	
During the crop cycle	0.5-1.5 kg / 1000 m ² a day	



SIZE CHART





FOLIAR WATER SOLUBLE NUTRITION

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.



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ensures an higher crop yield and better grain quality

Foliar application

OPIFOL

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 Yieldon, 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.

Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	2.5-3.5 kg/ha	During the crop cycle
	2.5-3.5 kg/ha	During the crop cycle
	2.5-3.5 kg/ha	During the crop cycle



PLANTAFOL

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

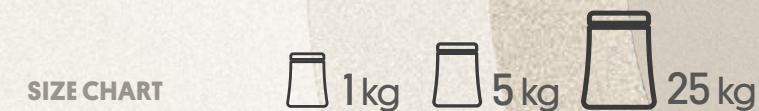
PLANTAFOL LINE consists of foliar fertilizers based on high solubility and rapid and complete absorption within the leaves. All products contain trace elements chelated with EDTA and can be mixed with the most common pesticides. The PLANTAFOL LINE offers several solutions based on different levels of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

foliar NPK supplements with microelements chelates

Foliar application

Directions for use

PERIOD OF APPLICATION	DOSE	CROP
During the crop cycle	2.5-4.0 kg/ha	
During the crop cycle	2.5-3.5 kg/ha	
During the crop cycle	150-250 g/hl	





OTHER PRODUCTS

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



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Wood application

mineral activator of erger

ACTIV ERGER

Nitrogen fertilizer 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.

Directions for use

CROP	DOSE	PERIOD OF APPLICATION
	8L/100L of solution	associated with ERGER
	8L/100L of solution	associated with ERGER



SIZE CHART

20 L

CONTROL DMP

Control DMP is an acidifying fertilizer.

The pH value achieved can easily be determined by comparing the color 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.

foliar uptake improver

Foliar application



Directions for use

PERIOD OF APPLICATION	DOSE	CROP
	50-80 ml/hl	
to acidify solutions	50-80 ml/hl to reach pH values of 6-6.5	
to facilitate penetration of solutions	20-30 ml/hl	



RECOMMENDATIONS

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

SIZE CHART

1 L 10 L



surface-active action

LIOKIL

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 plants by supplying nitrogen and phosphorus and cleaning the plants from organic exudates on the leaves and fruits.



Foliar application

Directions for use

CROP	DOSE	PERIOD OF APPLICATION
ALL	0,5-1 ml/hl	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.
ALL	350-450 ml/hl	In association with other treatments with the volumes normally used for applications.



SIZE CHART

10 L

MICRO NP

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 full-field crops.

NP fertilizers for localized application at sowing

Soil application



Directions for use

APPLICATION METHOD	DOSE	CROP
localised applications	30-40 kg/ha	Apple
localised applications	25-40 kg/ha	Wheat
localised applications	25-40 kg/ha	Broccoli



SIZE CHART

10 kg 25 kg



www.valagro.com