CATALOG 2019

BIOSTIMULATION

ILSA
The green evolution


ILSA
The green evolution

THE ILSA PROPOSAL

NUTRITION CATALOG

contains "intelligent" products able to modulate the release of nitrogen in sync with plant demand and in line with the new concepts of sustainable agriculture.

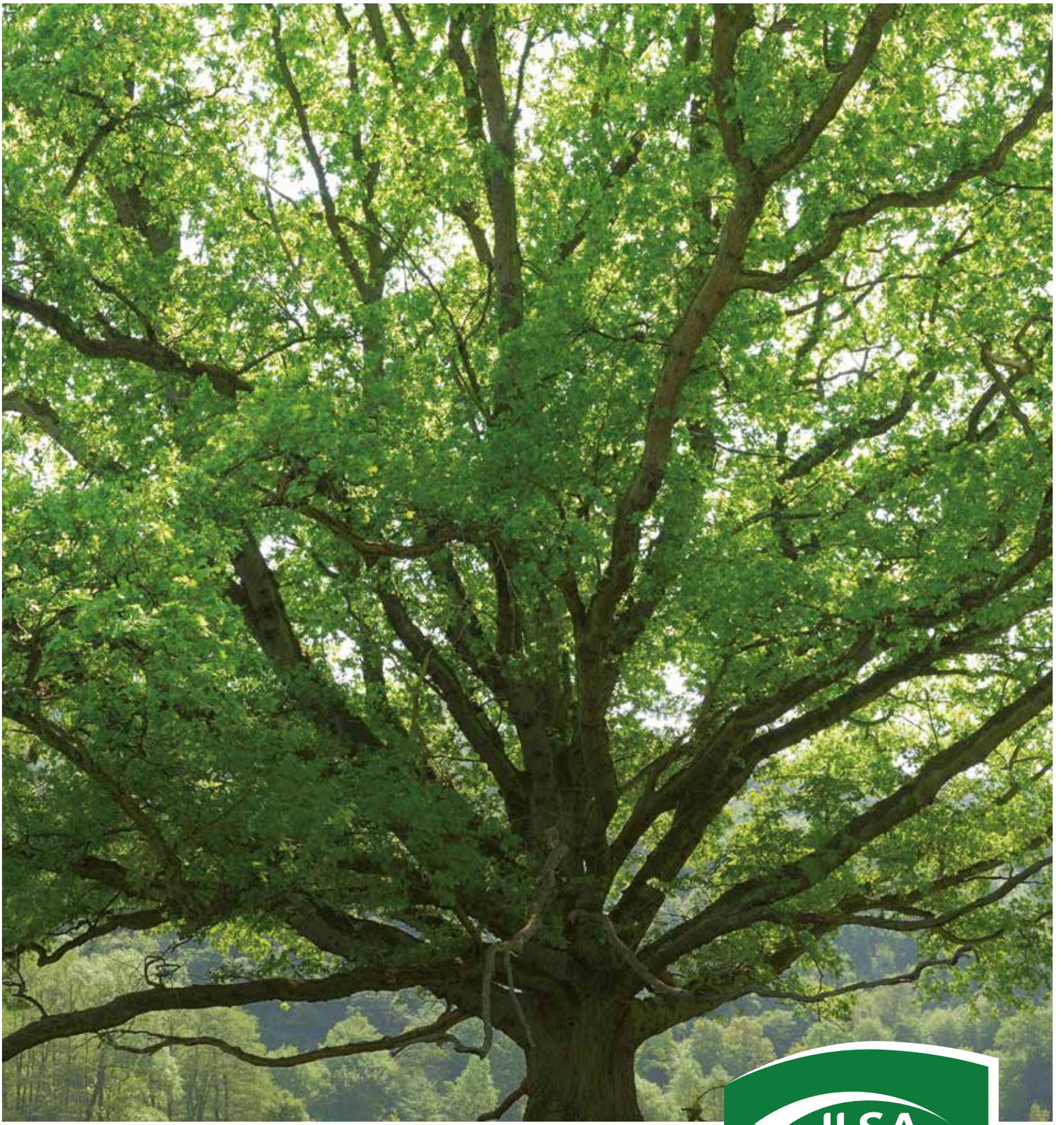
BIOSTIMULATION CATALOG

contains biostimulants and products with a specific action, based on molecules and natural substances able to act on plant primary and secondary metabolism, so responding to some of the plant's needs.

ILSA
The green evolution

ILSA

What we are is due to the effort, competence and passion of many people working to a common goal:
*“**make ILSA a solid and credible company**”.*
It is the result of continuous research, constant process and product innovation, respect, care and attention towards customers. Our solidity, credibility and will of continuous improvement allow us to compete worldwide and offer our customers real chances of economic and professional growth.



ILSA
The green evolution

INDEX

ILSA
The green evolution

PRODUCTS ACCORDING TO BENEFIT

PRODUCTS THAT BELONG TO THE RANGE VIRIDEM®

PRODUCTS ALLOWED IN ORGANIC FARMING

PRODUCTS IN ALPHABETICAL ORDER

PRODUCTS THAT BELONG TO THE RANGE VIRIDEM®

PRODUCTS ALLOWED IN ORGANIC FARMING

ILSA The green evolution

ILSA MANIFESTO ON AGRICULTURAL SUSTAINABILITY

TO GIVE LESS TO PRODUCE MORE

We make efficient products that at low doses allow increasing quality and production yields per hectare even in stress situations, improve agricultural soil fertility and promote a rational use of water resources while fully respecting the environment and the people living in it.

RENEWABLE SOURCES

To make our biostimulants and fertilisers we mainly use natural animal- and plantderived raw materials coming from renewable sources.

PRODUCT INNOVATION

The C.R.A. (Corporate Research Centre) applies «white» biotechnologies that, through the use of enzymes, allow developing products obtained by transforming natural raw materials that contain bioactive substances for plants.

PROCESS INNOVATION

By using industrial processes generally recognised as having low environmental impact, we make products while drastically reducing emissions into the atmosphere and waste production. We are constantly analysing and monitoring the Product Environmental Footprint (PEF) and the Organisation Environmental Footprint (OEF*).*

* *PEF:* Product Environmental Footprint
* *OEF:* Organization Environmental Footprint

TRAINING AND DISCLOSURE

The correct use of products and the reduction of the environmental impact from their use also depend on good training and information activities addressed to the distribution system and to end-users.

ILSA
The green evolution

VIRIDEM®
PROGRAMME

ILSA has been engaged for years in a programme called VIRIDEM®, aimed at developing natural plant-based biostimulant products with a clear philosophy:
«From plants for plants.»

With VIRIDEM® «The green evolution» takes one more important step forward.

VIRIDEM®

vegetal extracts for agricultural use

VIRIDEM® is the ILSA programme that brings together the company's scientific heritage to develop its plant-derived biostimulants. Through the VIRIDEM® programme, ILSA embraces the philosophy of creating products for plants by starting from the plants themselves. Thanks to years of research, this work programme sums up the most advanced knowledge in molecular biology, applied microbiology, proteomics, metabolomics, physiology, chemistry and bioprocesses.

VIRIDEM® comes from the identification of bioactive substances inside different plant species, extracted with low environmental impact technologies and made available to plants in their full potential. The result is a complete range of natural and efficient products acting on plant metabolism: fertilizers with a specific action improving plant physiological processes and making plants stronger, more productive and responsive to environmental stresses.

VIRIDEM® also represents the ILSA proposal to create conservative agricultural techniques aiming at preserving soil functions, protecting soil to improve its adaptation to climate changes with water saving solutions, and allowing using fertilisers in a more and more efficient, sustainable and integrated manner.

VIRIDEM® is all of this: observing nature, understanding its mechanisms and extracting its essence to help it with its own tools.

THE VIRIDEM® PROGRAMME IN THE FIELD OF BIOSTIMULANTS REPRESENTS:

- Excellence in research oriented towards developing products for a more and more sustainable agriculture
- Excellence in selecting plant raw materials and experimenting specific substances extracted from them
- Excellence in the method of extracting bioactive substances
- Excellence in the ability to combine them to create biostimulant and nutritional products that are both innovative and highly efficient.

VIRIDEM® PROGRAMME IN 12 STEPS

STUDY AND ANALYSIS

1

IDENTIFICATION OF THE PLANT MATRIX

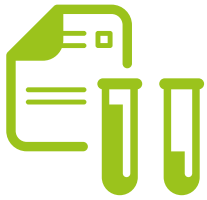
2

IDENTIFICATION OF THE COMPOUNDS (TARGET SUBSTANCES)

3

IDENTIFICATION OF THE STAGE IN THE PHENOLOGICAL CYCLE WHERE THE PLANT PRODUCES MOST COMPOUNDS (TARGET SUBSTANCES)

IMPLEMENTATION AND LAUNCH



10

IDENTIFICATION OF EFFECTS, DOSES AND BENEFITS OF THE FINAL PRODUCT

11

LAUNCH PLAN APPROVAL AND INDUSTRIAL START-UP

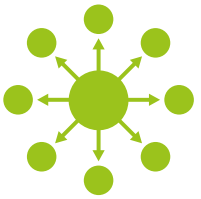
12

PACKAGING AND PRODUCT LAUNCH

VIRIDEM®

vegetal extracts for agricultural use

DEVELOPMENT



4

CHEMICAL AND PHYSICAL CHARACTERISATION OF THE MATRIX AND OF SUBSTANCES

5

TUNING OF PARAMETERS AND OF THE MOST EFFICIENT AND EFFECTIVE EXTRACTION PROCESS IN PRESERVING THE INTEGRITY OF COMPOUNDS (TARGET SUBSTANCES)

TEST AND VERIFICATIONS

6

LAB TEST AND PROTOTYPE CHARACTERISATION

7

TEST IN GROWTH CHAMBER

8

TEST IN CONTROLLED ENVIRONMENT OR IN GREENHOUSE

9

TEST IN OPEN FIELD

ILSA The green evolution

FCEH® IN 6 STEPS

ENZYMATIC HYDROLYSIS

FCEH
FULLY CONTROLLED ENZYMATIC HYDROLYSIS

1
COLLAGEN OR TISSUE OF PLANTS DERIVED FROM FABACEAE FAMILY

2
SELECTION AND DIVISION BY SIZE

3
STERILIZATION, STABILIZATION AND FURTHER SELECTION BY SIZE

Hydrolisis times and enzymes vary depending on the raw material and the destination of the finished product.

4
ENZIMATIC HYDROLISIS PROCESS FCEH®, FILTRATION AND DISTINCTION OF PROCESSES: RADICAL OR FOLIAR PRODUCT

H_2O
SELECTED STEREO-SELECTIVE ENZYMES

Process at low temperature (60 °C) performed inside static reactors. TSR technology (TOP STIRRED REACTOR) breaks the link between amino acids according to a standardized sequence.

5
FILTRATION BY ELIMINATION OF SUSPENDED SOLIDS

6
FOLIAR

SELECTED STEREO-SELECTIVE ENZYMES
CONCENTRATOR
MICRO-ELEMENTS FE, MG, CA, B...
LOW TEMPERATURE PROCESS 60 °C
REACTOR FOR COMPLEXATION WITH MACRO- (P, K) AND MICRO-ELEMENTS
FILTER

6
FERTIGATOR

CONCENTRATOR
FILTER

GELAMIN®
fluid gelatine for agricultural use

VIRIDEM®
vegetal extracts for agricultural use

ENZYMATIC HYDROLYSIS is a production process defined as "soft" because it involves the use of proteolytic and cellulolytic enzymes which "cut" the target molecules at specific points and it takes place inside static reactors at low temperatures (50-55°C). This allows us to obtain enzymatic hydrolysates which are characterised by:

THE ADVANTAGES OF ENZYMATIC HYDROLYSIS

- **HIGH EFFICIENCY THANKS TO PRESERVING THE CHEMICAL AND BIOLOGICAL CHARACTERISTICS OF THE BIOACTIVE MOLECULES PRESENT IN THE RAW MATERIALS**
- **PRODUCTS WHICH ARE HOMOGENEOUS AND STABLE OVER TIME**
- **THE POSSIBILITY OF MIXING PRODUCTS WITH ANY FORMULATION DESIGNED FOR LEAF OR ROOT APPLICATION THANKS TO THE LOW SALINITY**
- **SUB-ACID PH WHICH PROMOTES ABSORPTION OF THE PRODUCTS WHICH ARE MIXED WITH THEM**

GELAMIN® is a fluid hydrolysed gelatine, of animal origin, for agricultural use which, thanks to its special characteristics, is the essential matrix of many of all of ILSA's liquid and water-soluble fertilisers.

GELAMIN® is characterised by a high efficiency of use and:

- a high nutritional efficacy thanks to the high content of nitrogen and organic carbon, completely soluble and bio-available;
- a bio-stimulating action as it contains more than 50% of total amino acids in the form of polypeptides, peptides and free amino acids predominantly in levorotatory form, the only form used by plants;
- a rapid absorption through leaf and root thanks to the high purity and stability of the protein matrix;
- a rapid action in preventing any nutritional deficiencies thanks to the complexing action of the amino acids with macro, meso and micro elements.

The **ENZYMATIC HYDROLYSATE OF FABACEAE**, is obtained through the use of proteolytic and cellulolytic enzymes from plant tissues belonging to the Fabaceae family.

The **ENZYMATIC HYDROLYSATE OF FABACEAE** is characterised by:

- an increase in the productivity and quality of agricultural production thanks to its bio-stimulating effect, linked to the presence of a pool of organic molecules acting directly and indirectly on the primary and secondary metabolism of plants;
- a multiple action on the plant as it increases its tolerance to stress and stimulates rooting, vegetative growth, flowering, fruit setting, the final quality of the produce and the shelf-life;
- a highly efficient use and therefore a reduced dosage.

ILSA
The green evolution

SFE® IN 5 STEPS

SUPERCRITICAL CO_2 EXTRACTION

SUPERCRITICAL FLUID EXTRACTION

1

RAW MATERIAL:
PLANTS DERIVED
FROM FABACEAE FAMILY

2

SUPERCRITICAL CO_2
EXTRACTION

3

ROUGH VEGETAL EXTRACT

4

MIXING AND
STANDARDIZATION

5

VEGETAL EXTRACT
IN SUSPENSION

VIRIDEM®

vegetal extracts for agricultural use

THE PLANT EXTRACT PROCESS: SFE®

The process called SUPERCRITICAL FLUID EXTRACTION allows extracting bioactive substances from plant matrices and is performed by using Carbon Dioxide (CO_2) as extraction fluid, in supercritical conditions.

SFE
SUPERCRITICAL FLUID EXTRACTION

The extraction of bioactive substances from plant matrices is performed by using Carbon Dioxide (CO_2) as extraction fluid, in supercritical conditions.
The solvent power of CO_2 can be regulated by increasing or diminishing pressures and/or temperatures.
By adequately modifying pressure (which can reach 1.000 bar) and temperature (never over 80 °C) conditions, such process allows creating very selective unique extractions with different levels of oils, waxes and desirable extracts.
The plant raw materials, suitably dried and ground, are introduced into the plant and Carbon Dioxide (CO_2), a gas that under specific environmental conditions (temperature of 31.1 °C and pressure of 73.8 bar) is found in a supercritical stage, is brought to the desired temperature and pressure, so starting the extraction stage.
Once the extraction is completed, the operating pressure is reduced and CO_2 loses its solvent force, releasing the substances extracted, which are available in a concentrated form.
The extracts obtained are microbiologically stable and do not need preservatives.
Differently from conventional procedures, the selectivity of the ILSA extraction process does not entail heat stress in raw materials or require using organic solvents.
Because of its very low environmental impact, the FDA (Food and Drug Administration - U.S.) has conferred the GRAS (Generally Recognized as Safe) attribute to this industrial process.

The ILSA products with a specific action can act on plant metabolism to respond to specific qualitative and quantitative needs like, for example, size increase and uniformity, stimulation of flowering, sprouting and vegetative growth, fruit set and reduction of premature fruit drop, photosynthesis and vegetative growth, plant biomass increase, rooting, internode shortening, higher Brix level, resistance to fruit cracking and rot and shelf-life increase. They increase plant tolerance to abiotic stresses and support plants even under adverse conditions such as excessive soil salinity, temperature leaps and heat and water stresses. They reduce nitrate accumulation in leaves and support plants in stress situations caused by the application of agrochemicals. Last, they can foster plant nutrition by facilitating the assimilation of macro- and micro-elements.

ILSA
The green evolution

FROM VIRIDEM® THE EXCELLENCE OF PLANT-DERIVED PRODUCTS WITH A SPECIFIC ACTION

It is estimated that in the world at least 30% of production is lost because of environmental stresses to which plants are subjected.

Adverse conditions limiting the quantity and quality of agricultural productions.

ILSA has launched a line of products with a specific action that are completely natural, very effective and made with lowest environmental impact technologies.

ILSA innovation in the world of products with a specific action.

The ILSA products with a specific action can act on plant metabolism to respond to specific qualitative and quantitative needs like, for example, size increase and uniformity, stimulation of flowering, sprouting and vegetative growth, fruit set and reduction of premature fruit drop, photosynthesis and vegetative growth, plant biomass increase, rooting, internode shortening, higher Brix level, resistance to fruit cracking and rot and shelf-life increase. They increase plant tolerance to abiotic stresses and support plants even under adverse conditions such as excessive soil salinity, temperature leaps and heat and water stresses. They reduce nitrate accumulation in leaves and support plants in stress situations caused by the application of agrochemicals. Last, they can foster plant nutrition by facilitating the assimilation of macro- and micro-elements.

PHOTOSYNTHESIS AND VEGETATIVE DEVELOPMENT

TOLERANCE TO HEAT AND WATER STRESS

SALINITY TOLERANCE

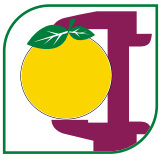
SHELF-LIFE

CRACKING AND ROT

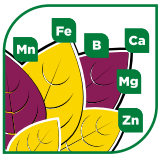
FLOWERING AND FRUIT SET

ROOTING

UNIFORMITY IN COLOUR AND RIPENING

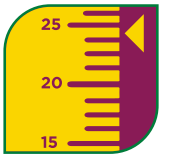


SIZE



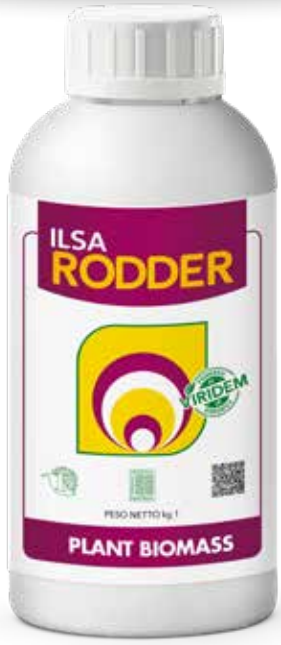
NUTRITION AND NUTRIENT BIODISPONIBILITY

PLANT BIOMASS



DEGREES BRIX

PLANT BIOMASS



The development of plant tissues and masses is due to the intense activity of meristems, which, under ideal environmental, nutritional and hormonal conditions, can continue growing throughout the plant's life. Meristem activity produces specialised cells and tissues according to the plant's genetic potential and functional needs.

Biomass is the ensemble of all tissues, that is, everything that originates from each plant's life. Like every living body, biomass depends on biochemical processes but also on available nutrients, water, light and climate. Any stress condition limits each plant's vital expressions. Difficult environmental conditions can, therefore, compromise proper leaf formation and the aerial system, so reducing all crop physiological processes, which results in low production and final quality.

The ILSA products with a specific action on plant biomass, based on plant biostimulant components, act on nitrogen and carbon metabolism, so promoting a regular increase in leaf biomass without having to resort to excessive fertilisation.


ILSA
The green evolution

ILSA RODDER

POWERED BY VIRIDEM

STIMULATES ROOTING AND
PLANT BIOMASS GROWTH

1 kg

5 kg

20 kg

Benefits

- Stimulates root growth and development
- Induces better flowering and fruit set
- Enhances the use of nutrients and water

Characterising substances

- **HUMIC SUBSTANCES**
- **HOSPHORUS**
- **TYROSINE**
- **GLUTAMIC ACID**
- **PROTEIN NITROGEN**

	COMPONENTS	HUMIC SUBSTANCES	HIGHLY ASSIMILABLE PHOSPHORUS	AMINO ACIDS FROM ENZYMATIC HYDROLYSIS
ACTIONS	ROOT DEVELOPMENT	✓	✓	✓
	VEGETATIVE DEVELOPMENT AND ANTI-STRESS FUNCTION	✓		✓

Chemical and physical features

LIQUID BROWN COLOUR
pH 6.5 ± 0.5
DENSITY 1.17 ± 0.02 kg/dm³
CONDUCTIVITY E.C. 2.25 ± 0.25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	**5%**
of which ORGANIC NITROGEN (N) (% p/p)	**2.5%**
AMMONIA NITROGEN (N) (% p/p)	**2.5%**
TOTAL PHOSPHORUS PENTAOXIDE (P_2O_5)	**9%**
ORGANIC CARBON (C) (% p/p)	**7%**

FOLIAR FERTILIZER

ORGANIC VEGETAL MATRIX

Contains in particular

HUMIC EXTRACTS

PLANT BIOMASS

Also acts on ROOTING

Description

In plants all activities are regulated by typical plant hormones that combine, regulate specific and complex activities and are largely responsible for the plant's growth speed. They facilitate the accumulation of natural auxins in the basal region and, therefore, early root production.

ILSARODDER *guarantees root development during the early stages of seedlings rooting and vegetative growth. It helps maintain roots in good health, preparing the crop to follow through on vegetative development and increase plant biomass. It has an anti-stress function in post-repotting and in times of drought or excessive heat.*

ILSARODDER *is the solution to the need of fruit vegetable crops (tomatoes, peppers, melons, courgettes, strawberries and other crops) and ornamental crops to best use nutritional and water resources in order to develop root systems suitable to support plants throughout the vegetative/productive cycle.*

ILSARODDER *is a formulation based on humic substances, highly soluble phosphorus (from ammonium polyphosphate), specific amino acids from enzymatic hydrolysis (tyrosine and glutamic acid in particular) and protein nitrogen, which can help overcome climatic stresses and fosters the development of root hairs and biomass.*

*Directions for use**

CROP	DOSE	NOTES
ASPARAGUS	2-3 kg/ha	2-3 applications, every 4-7 days, from early shoot emergence
CAULIFLOWER AND OTHER CABBAGES	2-2.5 kg/ha	3 applications, every 10-12 days, from post-transplanting
FENNEL	2.5-3 kg/ha	3 applications, every 10-12 days, from post-transplanting
ARTICHOKE	2-2.5 kg/ha	2-3 applications, every 7-12 days, from growth resumption
SUGAR BEET, RAPESEED	2-3 kg/ha	2-3 applications, in the early stages
LETTUCE AND OTHER LEAF VEGET. CROPS	2-2.5 kg/ha	2-3 applications, every 4-7 days, in the early stages
TOMATO, PEPPER, MELON, POTATO	2.5-4 kg/ha	2-3 applications, every 8-10 days, during the early stages
VEGETABLE CROPS IN THE GREENHOUSE	0.3-0.4 kg/1,000 m^2	2-3 applications, every 8-10 days, during the early stages
FLOWER AND ORNAMENTAL CROPS	100 g/100 L water	When applied in the early stages
TURF-PLANTS, FLOWERS, POT-PLANTS, GARDEN NURSERIES	1 kg/1,500-2,000 m^2	2-3 applications in root growth phases
CULTURES FOR FRESH VEGETABLES	1-2 kg/1,000 m^2	2-3 applications, the first after first real leaves appear

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

PLANT BIOMASS


VIRIDEM®
vegetal extracts for agricultural use
From the Viridem® program, the ILSA biostimulators
THEY HELP YOUR PLANTS DO THEIR JOB
Viridem®.
From plants for plants.
Viridem is the exclusive ILSA programme for developing biostimulators of plant origin.
A new generation of products capable of responding to the specific needs of any plant by acting on its metabolism, for an increasingly sustainable and truly green farming. Specifically targeted to your crop's needs, the Viridem biostimulator programme improves physiological processes, benefiting quality, and makes your plants stronger and more responsive to environmental stress and therefore more productive.
May their work be productive.
And yours too.
www.theintrepidl.it
www.ilsagroup.com
ILSA
The green evolution

SIZE

In every plant fruits represent the survival organs of the species: for this reason they must be numerous and have a very good structure. After fecundation, fruit cells begin to multiply intensely to then stretch and enlarge, defining fruit size. This stage affects not only those who grow them, but also consumers.

The enlargement process requires the action of natural hormones regulating the various cell steps. During fruit growth a nutritional competition takes place between fruits, buds and sprouts. Nutritional imbalances (excesses or deficiencies), temperature leaps, hard environmental conditions or excess fruits with regard to the plant's conditions can hamper fruit growth.

In order to increase the size of fruits and vegetables, an efficient hormonal and nutritional balance is needed, starting from the previous fruit set stage.

The ILSA products with a specific action on increasing size contain amino acids, peptides, proteins, algae extracts, betaines and other plant extracts that act on the plant's physiology and allow fruits to fall in commercially superior size categories, limiting adverse nutritional and environmental stresses.

ILSA

The green evolution

ILSA FORMA

PROMOTES FRUIT DEVELOPMENT

1 kg

5 kg

20 kg

Benefits

- Increases fruit size
- Produces fruits falling in commercially superior size categories
- Reduces stress in the ripening stage

Characterising substances

- GLYCINE
- ALANINE
- ASPARTIC ACID
- VALINE
- LEUCINE
- MANNITOL
- ALGINATES

	COMPONENTS	AMINO ACIDS FROM ENZYMATIC HYDROLYSIS	MANNITOL AND ALGINATES	PEPTIDES AND PROTEINS
ACTIONS	INCREASE IN CELL DIVISION AND EXPANSION	✓	✓	
	NUTRITIONAL BALANCE UP TO RIPENING	✓		✓

Chemical and physical features

LIQUID BROWN COLOUR
pH 5.5 ± 0.5
DENSITY 1.17 ± 0.01 kg/dm^3
CONDUCTIVITY E.C. 1.25 ± 0.25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	5%
of which ORGANIC NITROGEN (N) (% p/p)	5%
ORGANIC CARBON (C) (% p/p)	18%

FOLIAR FERTILIZER

ORGANIC VEGETAL MATRIX

Contains in particular

- FLUID YEAST EXTRACT CONTAINING BROWN ALGAE
- CO-FORMULANT FROM ENZYMATIC HYDROLYSIS AND SUGARS

SIZE

Description

Satisfying production results require good-sized fruits. To promote a volume increase, an intense process of cell multiplication and expansion is necessary since the fruit set stage. Furthermore, during enlargement a strong nutritional competition between fruits (in case of excess fruit set) may take place as well as one with buds and sprouts responsible for the next year's production.

Ensuring a hormonal and nutritional balance after fruit set is therefore fundamental to allow fruits to fall in commercially superior size categories, reducing stresses due to nutritional imbalances or limiting environmental conditions. **ILSAFORMA***, applied after fruit set, is the solution to the needs of fruit crops and table grapes to increase the size of fruits. Composed by a fluid yeast extract containing Ascophyllum nodosum (by cold extraction) and a co-formulant from enzymatic hydrolysis,* **ILSAFORMA** *stimulates a hormone-like activity that enables cell division and expansion and guarantees nutritional support up to ripening.*

Mannitol, alginates (activators of the biosynthetic pathways of natural hormones) and bioactive amino acids suitable for the enlargement and ripening stages (glycine, aspartic acid, valine, alanine, leucine and isoleucine) are the ingredients allowing **ILSAFORMA** *to act infallibly on pome fruits, stone fruits, table grapes and other fruit tree crops that, in harmony with proper water management, originate bigger-sized fruits.*

*Directions for use**

CROP	DOSE	NOTES
APRICOT TREE, CHERRY TREE, PEACH TREE, NECTARINE, PLUM TREE	2.5-3.5 kg/ha	3-4 applications, every 10-12 days, from shuck fall
APPLE TREE, PEAR TREE, ACTINIDIA	2.5-3 kg/ha	3-4 applications, every 7 days, in post-flowering
CRANBERRY, RASPBERRY AND OTHER SMALL FRUITS	2-2.5 kg/ha	2-3 applications, every 10-12 days, from fruit set
CITRUS	2.5-3 kg/ha	3-4 applications, every 15-20 days, from fruit set
TABLE GRAPES	2.5- 3.5 kg/ha	3-4 applications, every 10-12 days, from fruit set/early cell expansion

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSA SHAPE

BALANCES FRUIT DEVELOPMENT AND SIZE

1 kg

5 kg

20 kg

Benefits

- Enables fruit cell division
- Increases the value of final production
- Balances physiological activities in the ripening stages

Characterising substances

- **GLUTAMIC ACID**
- **ASPARTIC ACID**
- **BETAINES**
- **OLIGOSACCHARIDES**

ACTIONS	COMPONENTS	AMINO ACIDS AND PEPTIDES FROM ENZYMATIC HYDR.	BETAINES	OLIGOSACCHARIDES
	CREASE IN FRUIT SIZE	✓		✓
	NUTRITIONAL AND PHYSIOLOGICAL BALANCE	✓	✓	✓

Chemical and physical features

- **LIQUID BROWN COLOUR**
- **pH 5.5 ± 0.5**
- **DENSITY 1.22 ± 0.02 kg/dm³**
- **CONDUCTIVITY E.C. 1.15 ± 0.25 dS/m**

Composition

TOTAL NITROGEN (N) (% p/p)	**5%**
of which ORGANIC NITROGEN (N) (% p/p)	**5%**
ORGANIC CARBON (C) (% p/p)	**20%**

FOLIAR FERTILIZER

ORGANIC VEGETAL MATRIX

Contains in particular

- **CO-FORMULANT FROM ENZYMATIC HYDROLYSIS**
- **PLANT EXTRACTS WITH HIGH BETAINE CONTENT**

SIZE

Description

During the stages of fruit development and ripening, plants require greater energies to distribute nutrients evenly. Besides the factors promoting the development of fruit tissues and, therefore, an increase in fruit volume, it is also necessary to increase nutrient supply in order to support fruit enlargement as long as fruits take form. As for vegetable crops (in the greenhouse and open field) in particular, difficult environmental conditions or nutritional imbalances can hamper fruit enlargement.

ILSASHAPE *is designed to foster an increase in size of tomatoes, peppers, strawberries, melons and all fruit crops, also the tree ones, thanks to its developing tissues and constantly supporting enlargement in nutritional terms, starting from early fruit set.*

Its composition, based on oligosaccharides, plant extracts, peptides and amino acids (from enzymatic hydrolysis) suited for the enlargement and ripening stages of fruits (glutamic acid, aspartic acid and proline), allows **ILSASHAPE**, *once applied, to help increase size. The presence of betaines, moreover, fosters the usual metabolic activities at the cell level and regulates transpiration, so limiting the risk of stress.*

By making fruits more developed and uniform and reducing production waste, **ILSASHAPE** *increases the final value of fruits and vegetables picked.*

*Directions for use**

CROP	DOSE	NOTES
WATERMELON, MELON, CUCUMBER, COURGETTE	2.5 - 3 kg/ha	2-3 applications, every 10-15 days, during fruit enlargement
STRAWBERRY	2.5 - 3 kg/ha	2-3 applications, every 10-15 days, from early fruitlets
TOMATO	2.5 - 3 kg/ha	3-4 applications, every 10-12 days, from early ramifications in fruit set
PEPPER, AUBERGINE	2-2.5 kg/ha	2-3 applications, every 10-12 days, from early fruitlets
STRAWBERRY, MELON, GREENHOUSE COURGETTE	0.3-0.4 kg/1,000 m^2	2-3 applications, every 7-8 days, during fruit enlargement
TOMATO AND OTHER GREENHOUSE SOLANACEAE	0.3-0.4 kg/1,000 m^2	3-4 applications, every 7-8 days, from early ramifications in fruit set
STONE FRUITS, POME FRUITS	2.5-3 kg/ha	3-4 applications, every 7 days, in post-flowering
TABLE GRAPES, ACTINIDIA, CITRUS	2-3 kg/ha	3-4 applications, every 10-12 days, from fruit set

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSA STIMSET

POWERED BY VIRIDEM

OSMOTIC BALANCER IN
THE FRUIT GROWTH STAGE

5 kg

20 kg

Benefits

- Provides vegetative energy and regulates flowering
- Balances osmotic exchange by stimulating wall permeability
- Reduces sensitivity to saline stress and promotes fruit set

Characterising substances

PROTEIN NITROGEN AND CARBON

ANIMAL- AND PLANT-DERIVED AMINO ACIDS AND PEPTIDES

	COMPONENTS	PROTEIN NITROGEN AND CARBON	AMINO ACIDS AND PEPTIDES	PLANT-DERIVED AMINO ACIDS
ACTIONS	CELL TURGOR AND TISSUE EXPANSION		✓	✓
	REGULATION OF FLOWERING, FRUIT SET AND FRUIT DEVELOPMENT	✓	✓	✓

Chemical and physical features

LIQUID COLOUR BROWN

pH 5.5 ± 0.5

DENSITY 1.20 ± 0.02 kg/dm³

CONDUCTIVITY E.C. 0.90 ± 0.20 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	**8%**
of which ORGANIC NITROGEN (N) (% p/p)	**8%**
ORGANIC CARBON (C) (% p/p)	**22%**

Contains in particular

PLANT EXTRACTS

SIZE

Also acts on FLOWERING, FRUIT SET and SALINITY TOLERANCE

Description

Cell elongation during fruit development must take place rapidly: the growth is due not only to hormonal factors but also to increased volume and water content. In this stage, cell walls, structurally elastic, are stretched by the pressure created by water inside vacuoles (featuring a high concentration of ions, sugars and nitrogen compounds). By osmotic exchange, until equilibrium is reached, water penetrates and promotes cell turgor, fundamental to keep plant tissues stretched.

ILSASTIMSET *ensures greater efficiency in the selective absorption of nutrients and proper vegetative development, in particular from the flowering stages to fruit development. By balancing nutrient absorption, it allows maturating a greater number of bigger-sized fruits.*

The use of **ILSASTIMSET** *helps plants to remain tonic even under saline stress conditions.*

ILSASTIMSET *is a formulation for soil application based on animal- and plant-derived amino acids and peptides, protein nitrogen and other key ingredients to help overcome climate stresses and promote cell turgor. It is designed to accompany the vegetative growth stages of fruit crops and fruit vegetable crops.*

*Directions for use**

CROP	DOSE	NOTES
INDUSTRIAL TOMATO, PEPPER, POTATO, AUBERGINE	25-30 kg/ha	3-5 applications, alternately, from vegetative growth to fruit enlargement
MELON, WATERMELON, COURGETTE, CUCUMBER, STRAWBERRY	20-25 kg/ha	3-5 applications, alternately, from vegetative growth to fruit enlargement
TOMATO AND OTHER FRUIT VEGETABLE CROPS IN THE GREENHOUSE	3-5 kg/1,000 m^2	3-5 applications, alternately, from vegetative growth to fruit enlargement
POME FRUITS AND STONE FRUITS	15-25 kg/ha	3-4 applications, every 15-20 days, from pre-flowering to fruit development
TABLE AND WINE GRAPES	15-25 kg/ha	3-4 applications, every 15-20 days, from pre-flowering to cluster filling

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

From the Viridem® program, Ilsaforma.
Increase the size of your fruits.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA.
They help your plants do their job.

ILSAFORMA is designed to increase the size of fruits by limiting stresses during their ripening stage. Applied during the fruit setting phase, ILSAFORMA works effectively on pomaceous fruit, stone fruits (drupes), grapes and other fruit trees which, in harmony with a proper water management, produce larger fruits. ILSAFORMA also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive.
And yours too.

Recommended for: Table Grape, Stone Fruits, Pome Fruits, Olive Tree.

www.ilsagroup.com

ILSA
The green evolution

www.theintrepidi.it

From the Viridem® program, Ilsashape.
Increase the size of your fruits.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA.
They help your plants do their job.

ILSASHAPE is designed to increase the size of fruits by limiting stresses during their ripening stage. Applied during the fruit setting phase, ILSASHAPE works effectively on pomaceous fruit, stone fruits (drupes), grapes and other fruit trees which, in harmony with a proper water management, produce larger fruits. ILSASHAPE also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive.
And yours too.

Recommended for: Stone Fruits, Pome Fruits, Citrus, Table Grape, Actinidia, Strawberry, Melon, Watermelon, Tomato and other Vegetables.

www.ilsagroup.com

ILSA
The green evolution

www.theintrepidit.it

UNIFORMITY IN COLOUR AND RIPENING

Every ripe fruit reaches its ideal growth point through a series of internal changes affecting:

- *a change in the colour*
- *pulp softening*
- *an increase in sugars*
- *the presence of flavours*

The colour is typical to both the species and the variety and each colour corresponds to a particularly effective substance for human health also, which is indication of a specific set of beneficial effects on the organism. The accumulation of these substances is at its peak at the time of full ripening and is indication of quality. Definitively, it is the result that sums up the quality of the farmer's agronomic choices.

The ILSA products with a specific action on colour and ripening uniformity, based on potassium, betaines, polysaccharides and other plant extracts, facilitate greater production of the natural pigments responsible for the final colour and allow balancing nutrient distribution among fruits, so to have a harvest as simultaneous as possible.


ILSA
The green evolution

ILSA KOLORADO

STANDARDISES COLOUR

1 kg

5 kg

20 kg

Benefits

- Makes fruit colour uniform
- Reduces stress in the ripening stage
- Brings forward ripening and standardises final fruit quality

Characterising substances

BETAINES

POLYSACCHARIDES

POTASSIUM THIOSULPHATE

BIOACTIVE PLANT EXTRACTS

	COMPONENTS	BETAINES	POTASSIUM THIOSULPHATE	POLYSACCHARIDES
ACTIONS	STRESS REDUCTION IN THE RIPENING STAGE	✓	✓	
	DEVELOPMENT OF NATURAL FRUIT PIGMENTS		✓	✓

Chemical and physical features

LIQUID BROWN COLOUR

pH 8.0 ± 0.6

DENSITY 1.30 ± 0.02 kg/dm³

CONDUCTIVITY E.C. 3.90 ± 0.25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	4%
of which ORGANIC NITROGEN (N) (% p/p)	1%
UREA NITROGEN (N) (% p/p)	3%
WATER SOLUBLE POTASSIUM (K_2O) (% p/p)	12%
ORGANIC CARBON (C) (% p/p)	8%

FOLIAR FERTILIZER

ORGANIC VEGETAL MATRIX

Contains in particular

PLANT EXTRACTS WITH HIGH BETAINE CONTENT

POTASSIUM THIOSULPHATE

UNIFORMITY IN COLOUR AND RIPENING

Description

Uniformity in fruit colour is one of the consequences of proper ripening, combined with flavour development, an increase in sugars and pulp softening. The substances giving colour to fruits differ according to the plant species (polyphenols, carotenoids, anthocyanins, etc.), but they all contribute to improving the organoleptic quality and the healthiness of fruits.

ILSAKOLORADO *just enhances the development of those natural pigments giving the final colour to fruits: lycopene and beta-carotene in tomatoes, peppers, cherries, peaches, apricots, melons and citrus; anthocyanins and polyphenols in grapes, cranberries, plums and aubergines.*

Thanks to the high content of completely available potassium, betaines and polysaccharides, **ILSAKOLORADO** *helps plants to perform regularly at the time of fruit ripening, when stress susceptibility is very high.*

ILSAKOLORADO *is particularly suited for wine and table grapes (red berry variety), cherries and stone fruits in general, apples, pears, tomatoes and other solanaceae. It is also ideal for flower and ornamental crops, since it stimulates the natural colour and the brightness of plant tissues.*

*Directions for use**

CROP	DOSE	NOTES
APRICOT TREE, CHERRY TREE, PEACH TREE, NECTARINE, PLUM TREE	2.5-3 kg/ha	2-3 applications, every 7-8 days, from pre-veraison
APPLE TREE, PEAR TREE, KAKI TREE	2.5-3 kg/ha	2-3 applications, every 7-8 days, from pre-veraison
OLIVE TREE	2-2.5 kh/ha	2-3 applications, every 10-12 days, from pre-veraison
TOMATO, PEPPER, AUBERGINE, MELON, STRAWBERRY	2.5-3 kg/ha	2-3 applications, every 10 days, from pre-veraison
TABLE AND WINE GRAPES	2-2.5 kg/ha	2-3 applications, every 10-12 days, from pre-veraison
CRANBERRY, RASPBERRY	2.5-3 kg/ha	2-3 applications, every 10-12 days, from pre-veraison
FLOWER AND ORNAMENTAL CROPS	100 g/100 L water	2-3 applications as needed

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

UNIFORMITY IN COLOUR AND RIPENING

From the Viridem® program, Ilsakolorado.
Standardise the colour of the fruit.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA.
They help your plants do their job.

ILSAKOLORADO is designed to standardise fruit colouring, reducing stress phenomena during their ripening phase. The use of ILSAKOLORADO in fact allows increasing the development of those natural pigments which give the final colour to fruit, bringing forward its ripening and standardising quality. ILSAKOLORADO also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive.
And yours too.

Recommended for: Stone Fruits, Pome Fruits, Loti, Solanaceae, Melon, Strawberry, Grapes and Wine, Blueberry, Raspberry, Flower and Ornamental Crops.

www.ilsagroup.com

ILSA
The green evolution

www.theintrepidit

FLOWERING AND FRUIT SET

Flowering is affected by genetic and environmental (temperature, photoperiod, soil type, biological balances) factors. Proper synchronisation leaves and flowers' stages production is also decisive. When plants receive appropriate light and temperature signals from the environment, meristem cells start to proliferate, giving rise to inflorescences. The synchronisation between vegetative and reproductive boosts is linked to specific hormonal and enzymatic balances regulating leaf development, which is able to provide sufficient energy to support flowers and fruits.

The increase in flowering and, above all, in the number of fruits set, that is, the final yield, depends on the plant's nutritional balance and the efficiency of the enzymatic systems responsible for physiological processes.

The ILSA products with a specific action on flowering and fruit set, based on plant extracts, act by positively stimulating the vegetative/productive activity of plants, regulating nutrient distribution and allowing the plant to maturate a greater number of fruits.

ILSA

The green evolution

ILSA GIRMA

FLOWERING, FRUIT SET, REDUCTION OF PREMATURE FRUIT FALL

5 kg

20 kg

Benefits

- Stimulates reproductive energy and regulate flowering
- Regulates biochemical balances in reproduction
- Reduces the sensitivity to environmental stresses affecting premature fruit fall

Characterising substances

PROLINE
GLUTAMIC ACID
GLYCINE
LAMINARINS
FUCOIDANS
YEAST EXTRACTS

	COMPONENTS	ESSENTIAL AMINO ACIDS	LAMINARINS, FUCOIDANS	YEAST EXTRACTS
ACTIONS	FLOWERING STIMULATION	✓	✓	✓
	BALANCED FRUIT SET AND RIPENING	✓	✓	

Chemical and physical features

LIQUID BROWN COLOUR
pH 5.5 ± 0.5
DENSITY 1.17 ± 0.01 kg/dm³
CONDUCTIVITY E.C. 1.25 ± 0.25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	**5%**
of which ORGANIC NITROGEN (N) (% p/p)	**5%**
ORGANIC CARBON (C) (% p/p)	**18%**

Contains in particular

FLUID YEAST EXTRACT CONTAINING BROWN ALGAE
FLUID HYDROLYSATED ANIMAL EPITHELIUM

FLOWERING AND FRUIT SET

Description

The vegetative/productive balance depends on genetic factors, temperature, light and an ensemble of environmental factors. At the right photoperiod and under ideal climate conditions, meristems start to proliferate so giving rise to inflorescences, which must be supported hormonally, enzymatically and energetically to achieve fruit formation. Fruit set, as a fact, strongly depends on the equilibrium between nutrients and hormonal stimuli during flowering. To maturate fruits, plants must be in perfectly health, without stresses from temperature leaps, water imbalance or imbalanced fertilisation.

ILSAGIRMA *is a product for soil application that aims at setting the hormonal and enzymatic balance regulating these delicate stages, and it helps plants overcome temporary environmental stresses.*

ILSAGIRMA *is based on protein nitrogen and other plant extracts, each with specific molecules positively stimulating the flowering/fruit set stages and proper ripening of tree crops and fruit vegetable crops.*

The presence of yeast extracts strongly stimulates flowering, backed by the action of fucoidans, laminarins and specific amino acids such as proline, glutamic acid and glycine for the vegetative and flowering/fruit set stages.

ILSAGIRMA *is a great support to lay the foundations for an excellent final production.*

*Directions for use**

CROP	DOSE	NOTES
IINDUSTRIAL TOMATO, PEPPER, AUBERGINE	15-20 kg/ha	3 applications, in pre-flowering, fruit set and fruit development
MELON, WATERMELON, COURGETTE, CUCUMBER, STRAWBERRY	15-20 kg/ha	3 applications, in pre-flowering, fruit set and fruit development
TOMATO AND OTHER FRUIT VEGETABLE CROPS IN THE GREENHOUSE	2-3 kg/1,000 m^2	3-4 applications, every 10-15 days, from pre-flowering
CHERRY TREE, PEACH TREE, PLUM TREE, APRICOT TREE	15-25 kg/ha	3 applications, in pre-flowering, fruit set and fruit development
APPLE TREE, PEAR TREE, ACTINIDIA, CITRUS	15-25 kg/ha	3 applications, in pre-flowering, fruit set and fruit development
WINE GRAPES AND OLIVE TREE	15-25 kg/ha	3 applications, in pre-flowering, fruit set and fruit development

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSA STIMSET

POWERED BY VIRIDEM

OSMOTIC BALANCER IN
THE FRUIT GROWTH STAGE

5 kg

20 kg

Benefits

- Provides vegetative energy and regulates flowering
- Balances osmotic exchange by stimulating wall permeability
- Reduces the sensitivity to saline stresses and promotes fruit set

Characterising substances

PROTEIN NITROGEN AND CARBON

ANIMAL - AND PLANT-DERIVED AMINO ACIDS AND PEPTIDES

	COMPONENTS	PROTEIN NITROGEN AND CARBON	AMINO ACIDS AND PEPTIDES	PLANT-DERIVED AMINO ACIDS
ACTIONS	CELL TURGOR AND TISSUE EXPANSION		✓	✓
	REGULATION OF FLOWERING, FRUIT SET AND FRUIT DEVELOPMENT	✓	✓	✓

Chemical and physical features

LIQUID BROWN COLOUR

pH 5.5 ± 0.5

DENSITY 1.20 ± 0.02 kg/dm³

CONDUCTIVITY E.C. 0.90 ± 0.20 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	8%
of which ORGANIC NITROGEN (N) (% p/p)	8%
ORGANIC CARBON (C) (% p/p)	22%

Contains in particular

PLANT EXTRACTS

FERTIGATION

ORGANIC VEGETAL MATRIX

ORGANIC FARMING ILSA

Description

Also acts on SIZE and SALINITY TOLERANCE

Cell elongation during fruit development must happen rapidly: the growth is due not only to hormonal factors but also to increased volume and water content. In this stage, cell walls, structurally elastic, are stretched by the pressure created by water inside vacuoles (featuring a high concentration of ions, sugars and nitrogen compounds). By osmotic exchange, until equilibrium is reached, water penetrates and promotes cell turgor, fundamental to keep the plant's tissues stretched.

ILSASTIMSET *ensures greater efficiency in selective absorption of nutrients and proper vegetative development, especially from the flowering stages to fruit development. By balancing nutrient absorption, it allows maturating a greater number of bigger-sized fruits.*

The use of **ILSASTIMSET** *helps plants to remain tonic even under saline stress conditions.*

ILSASTIMSET *is a formulation for soil application based on animal- and plant-derived amino acids and peptides, protein nitrogen and other fundamental ingredients to help overcome climate stresses and promote cell turgor. It is designed to accompany the development stages of fruit crops and fruit vegetable crops.*

*Directions for use**

CROP	DOSE	NOTES
INDUSTRIAL TOMATO, PEPPER, POTATO, AUBERGINE	25-30 kg/ha	3-5 applications, alternately, from vegetative development to fruit enlargement
MELON, WATERMELON, COURGETTE, CUCUMBER, STRAWBERRY	20-25 kg/ha	3-5 applications, alternately, from vegetative development to fruit enlargement
TOMATO AND OTHER FRUIT VEGETABLE CROPS IN THE GREENHOUSE	3-5 kg/1,000 m^2	3-5 applications, alternately, from vegetative development to fruit enlargement
POME FRUITS AND STONE FRUITS	15-25 kg/ha	3-4 applications, every 15-20 days, from pre-flowering to fruit development
TABLE AND WINE GRAPES	15-25 kg/ha	3-4 applications, every 15-20 days, from pre-flowering to bunch filling

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA The green evolution

ILSA VEGETUS

PROMOTES FLOWERING AND FRUIT SET
BIOSTIMULANT

1 kg
5 kg
20 kg

Benefits

- Promotes vegetative development and flowering synchronisation
- Stimulates anthesis and meristem activity even in stress conditions
- Promotes fruit set and reduces premature fruit fall

Characterising substances

PLANT-DERIVED TRIACONTANOL

PHENOLIC COMPOUNDS

BIOACTIVE PLANT EXTRACTS

	COMPONENTS	PLANT-DERIVED TRIOCONTANOL	PHENOLIC COMPOUNDS	PLANT EXTRACTS
ACTIONS	STIMULATION OF FLOWERING AND FRUIT SET	✓	✓	✓
	REDUCTION OF PREMATURE FRUIT FALL	✓		✓

Chemical and physical features

LIQUID BROWN COLOUR

pH 5.5 ± 0.5

DENSITY 1.14 ± 0.02 kg/dm³

CONDUCTIVITY E.C. 1.75 ± 0.25 dS/m

Composition

TOTAL AMINO ACIDS (% p/p)	5%
FREE AMINO ACIDS (% p/p)	1.5%
NATURAL TRIACONTANOL (mg/kg)	6.0

Contains in particular

ENZYMATIC HYDROLYSATE OF FABACEAE

Description

Proper flowering is affected by genetic and environmental (temperature, photoperiod, soil state, biological balance with the other plants) factors. Proper synchronisation between the production stages of leaves and flowers is fundamental. In fruit plants, as the current season's fruits form and develop, the new vegetation grows and the next year's flower buds "get ready".

Hence, the plant must distribute available nutrients among these different processes. The synchronisation between vegetative and reproductive boosts is linked to specific hormonal and enzymatic balances that have to provide sufficient energy to support flowers and fruits.

ILSAVEGETUS *improves the vegetative and productive activity of plants, regulating nutrient distribution and positively stimulating all the stages up to early fruit development.*

ILSAVEGETUS *is a plant biostimulant based on an enzymatic hydrolysate of Fabaceae, where triacontanol, phenolic compounds and other bioactive plant extracts have a positive action on plant primary metabolism. It stimulates the activity of the enzymes regulating the main reactions in carbon and nitrogen metabolism, so promoting photosynthesis, flowering and fruit set even at times of stress. This enzymatic and hormonal regulation also allows plants to produce, without problems, a greater number of fruits, thus limiting premature fruit fall and increasing final production.* **ILSAVEGETUS** *is designed for the early development stages of fruit crops and fruit vegetable crops.*

*Directions for use**

CROP	DOSE	NOTES
APRICOT TREE, CHERRY TREE, PEACH TREE, NECTARINE, PLUM TREE	1.5-2.5 kg/ha	2 applications, every 8 days, from flower buds
APPLE TREE, PEAR TREE	1.5-2.5 kg/ha	2-3 applications, every 10-15 days, from 15 cm sprouts
MELON, WATERMELON, CUCUMBER, COURGETTE	1.5-2 kg/ha	3-4 applications, every 8-10 days, from post-transplanting
PEPPER, TOMATO, AUBERGINE, POTATO	2-2.5 kg/ha	3-4 applications, every 8-10 days, from post-transplanting
OLIVE TREE	1.5-2 kg/ha	2-3 applications, every 10-15 days, from growth resumption
ACTINIDIA	1.5-2.5 kg/ha	3-4 applications, every 10-15 days, from 10-15 cm sprouts
WINE GRAPES	1.5-2.5 kg/ha	2-3 applications, every 8 days, from 15 cm sprouts

**The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

FLOWERING AND FRUIT SET

From the Viridem® program, Ilsagirma. Stimulate flowering and fruit setting, reduce immature fruit-falling.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA. They help your plants do their job.

ILSAGIRMA is designed to stimulate reproductive energy, regulating flowering and the biochemical reproductive equilibrium. ILSAGIRMA is used via the roots. It reduces sensitivity to those environmental stresses which are responsible for small fruits falling, whilst regulating the hormonal and enzymatic balance which affects these delicate phases, and helps plants overcome any environmental stress phases. ILSAGIRMA also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive. And yours too.

Recommended: Stone Fruits, Pome Fruits, Actinidia, Citrus, Solanacee, Cucurbitacee, Strawberry, Grapes and Wine, Olive Tree.

www.ilsagroup.com

ILSA
The green evolution

PHOTOSYNTHESIS AND VEGETATIVE DEVELOPMENT

In the presence of sunlight, by using atmospheric carbon dioxide and metabolic water and thanks to chlorophyll photosynthesis, green plants produce organic substances, especially carbohydrates. Chlorophyll photosynthesis is a fundamental natural process to obtain organic compounds from inorganic substances and is the only biologically important process capable of transforming solar energy, on which life on Earth depends. This process depends on plant tissues, their nutrition and hydration state and the intensity of bioactive enzymes.

Efficient photosynthesis produces all the carbohydrates, amino acids and lipids that plants need during their vegetative development.

Plant tissue development is linked to the activity of meristems, which give rise to intense cell multiplication and division. To improve photosynthesis and the growth of leaves and sprouts, it is necessary to promote meristematic activity while limiting stress conditions.

The ILSA products with a specific action on photosynthesis and vegetative development, based on amino acids, proteins, phosphorus, betaines, glycosides and other plant extracts, help to overcome climate stresses and, at the same time, allow proper photosynthesis and increased crop growth.


ILSA
The green evolution

ILSA LEVA

PROMOTES PHOTOSYNTHESIS
BIOSTIMULANT

1 kg
5 kg
20 kg

Benefits

- Stimulates photosynthesis efficiency, even in limiting situations
- Allows having a greener and healthier vegetation
- Allows plant tissues to develop more

Characterising substances

- **PLANT-DERIVED TRIACONTANOL**
- **GLUTAMIC ACID**
- **GLYCINE**
- **GAMMA AMINOBUTYRIC ACID**
- **BIOACTIVE PLANT EXTRACTS**
- **VOLATILE COMPOUNDS**

	COMPONENTS	PLANT-DERIVED TRIACONTANOL	PLANT-DERIVED AMINO ACIDS	PLANT EXTRACTS AND VOLATILE COMPOUNDS
ACTIONS	PHOTOSYNTHESIS EFFICIENCY	✓	✓	✓
	STIMULATION OF CELL EXPANSION	✓		✓

Chemical and physical features

LIQUID COLOUR	BROWN
pH	5.5 ± 0.5
DENSITY	1.14 ± 0.02 kg/dm^3
CONDUCTIVITY E.C.	1.70 ± 0.25 dS/m

Composition

TOTAL AMINO ACIDS (% p/p)	6%
FREE AMINO ACIDS (% p/p)	1.8%
NATURAL TRIACONTANOL (mg/kg)	7.0

Contains in particular

ENZYMATIC HYDROLYSATE OF FABACEAE

FOLIAR FERTILIZER
ORGANIC VEGETAL MATRIX
ORGANIC FARMING ILSA

PHOTOSYNTHESIS AND VEGETATIVE DEVELOPMENT

Description

Chlorophyll photosynthesis is a natural process that allows obtaining organic compounds from inorganic substances, by exploiting solar energy. The efficiency of photosynthesis depends on the nutrition and hydration state of plant tissues, the presence of specific pigments and the activity of the enzymes involved in the stages (bright and dark) of the entire process. If only one of these conditions is missing, vegetative balance is reduced, which results in stunted growth, leaf malformations, pale colour of vegetation and low metabolite production.

ILSALEVA *allows a smooth progress of the photosynthesis process of vegetable crops (fruit, bulb, leaf, tuber and sprout crops), so enabling proper vegetative development, even in stress conditions, both in open field and in the greenhouse. The composition of* **ILSALEVA***, based on natural triacontanol, specific amino acids (glycine and glutamic acid, fundamental for chlorophyll synthesis) - also non-protein-derived (gamma amino butyric acid) -, has been specifically designed to stimulate the photosynthesis of kitchen garden plants. The presence of triacontanol, volatile compounds and other plant extracts with hormone-like action, moreover, allows* **ILSALEVA** *to stimulate the activity of the enzymes affecting primary metabolism (especially in the Krebs cycle) and promote cell expansion, which eventually results in increased development.*

ILSALEVA *is an essential tool for all vegetable crops, where environmental conditions can limit the photosynthetic efficiency of green tissues, vegetative development and, therefore, the final yield and quality.*

*Directions for use**

CROP	DOSE	NOTES
TOMATO, PEPPER, AUBERGINE	1.5-2 kg/ha	2-3 applications, every 8-10 days, from 10 days after transplanting
MELON, WATERMELON, COURGETTE, CUCUMBER, STRAWBERRY	1.5-2 kg/ha	2-3 applications, every 10-12 days, from 10 days after transplanting
TOMATO AND OTHER FRUIT VEGETABLE CROPS IN THE GREENHOUSE	0.2-0.3 kg/1,000 m^2	2-3 applications, every 8-10 days, from 10 days after transplanting
POTATO, CARROT	2-2.5 kg/ha	2-3 applications, every 10-12 days, from 10 days after transplanting
CABBAGES, FENNEL, ASPARAGUS, GARLIC AND ONION	1.5-2 kg/ha	2-3 applications, every 10-12 days, from 15 days after transplanting
LETTUCE, RADICCHIO AND OTHER LEAF VEGETABLE CROPS	2-2.5 kg/ha	2-3 applications, every 7-8 days, from 10 days after transplanting
LETTUCE AND OTHER FRESH CUT VEGETABLES IN THE GREENHOUSE	0.3-0.4 kg/1,000 m^2	2-3 applications, every 7-8 days, from 10 days after transplanting

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSA VIVIDA

PROMOTES VEGETATIVE DEVELOPMENT

1 kg

Benefits

- Promotes vegetative development and helps to increase plant biomass
- Fosters photosynthetic activity and transpiration in stress conditions
- Promotes the elongation of sprouts and flower clusters

Characterising substances

- **PROTEIN NITROGEN**
- **HIGHLY ASSIMILABLE PHOSPHORUS**
- **BETAINES**
- **GLYCOSIDES**

	COMPONENTS	PROTEIN NITROGEN	HIGHLY ASSIMILABLE PHOSPHORUS	BETAINES AND GLYCOSIDES
ACTIONS	GREATER PHOTOSYNTHESIS AND TRANSPIRATION		✓	✓
	GREATER INITIAL DEVELOPMENT	✓	✓	

Chemical and physical features

LIQUID BROWN COLOUR	
pH	2.5 ± 0.5
DENSITY	1.18 ± 0.02 kg/dm³
CONDUCTIVITY E.C.	2.00 ± 0.20 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	4%
of which ORGANIC NITROGEN (N) (% p/p)	1%
UREA NITROGEN (N) (% p/p)	3%
TOTAL PHOSPHORUS PENTAOXIDE (P_2O_5) (% p/p)	8%
ORGANIC CARBON (C) (% p/p)	10%

FOLIAR FERTILIZER

ORGANIC VEGETAL MATRIX

Contains in particular

PLANT EXTRACTS WITH HIGH BETAINE CONTENT

Description

Plant tissues develop due to the meristems' activity, which, in ideal conditions, give rise to intense cell multiplication and division. In stress absence, the formation of plant biomass is optimal, both in leaf development and in the elongation of the sprouts and flower organs responsible for production. That also depends, in addition to climate and the genetic heritage of plants, on the availability of water and nutrients, especially nitrogen, which supports meristems throughout their activity.

ILSAVIVIDA *promotes vegetative development by stimulating meristematic activity, which results in sprout elongation and the formation of greater and greener leaf biomass.* **ILSAVIVIDA** *stimulates photosynthetic activity and regulates plant transpiration, limiting stunted growths due to environmental stresses.*

ILSAVIVIDA *is a formulation based on protein nitrogen, phosphorus, betaines and glycosides, which are fundamental ingredients to foster the overcoming of climate stresses and the development of plant biomass. It is designed for the early development stages of fruit crops and the vine, since it stimulates the intensity of metabolic processes and the transport cycles of plant energy in critical post-growth resumption. It also promotes the optimal development of sprouts and flower clusters, which will host the current year's fruits.*

*Directions for use**

CROP	DOSE	NOTES
APRICOT TREE, CHERRY TREE, PEACH TREE, NECTARINE, PLUM TREE	2-2.5 kg/ha	2-3 applications, every 10-15 days, from 10-15 cm sprouts
APPLE TREE, PEAR TREE, ACTINIDIA	2-2.5 kg/ha	2-3 applications, every 10-15 days, from 10-15 cm sprouts
OLIVE TREE	1.5-2 kg/ha	2-3 applications, every 10-15 days, from growth resumption to flowering
TABLE AND WINE GRAPES	2-2.5 kg/ha	3-4 applications, every 10-15 days, from 10-15 cm sprouts to rachis development
FLOWER AND ORNAMENTAL CROPS	100 g/100 L water	2-3 applications as needed

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

PHOTOSYNTHESIS AND VEGETATIVE DEVELOPMENT

From the Viridem® program, Ilsaleva.
Photosynthesis with no limits.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA. They help your plants do their job.

ILSALEVA has been created to stimulate photosynthesis efficiency, including in limiting situations. The use of ILSALEVA allows obtaining a greener and healthier vegetation, stimulating an increased plant tissue development. ILSALEVA too is a bio-stimulant belonging to the Viridem® programme, the new generation of effective and sustainable products of plant origin, developed by ILSA.

May their work be productive. And yours too.

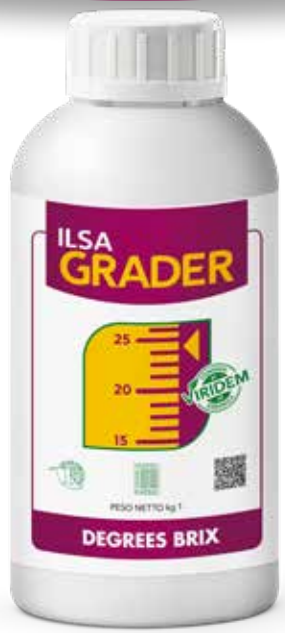
Recommended for: Apricot tree, Cherry tree, Peach tree, Nectarine, Plum tree, Apple tree, Pear tree, Actinidia, Olive tree, Ornamental and Floral crops.

www.intrepidi.it

www.ilsagroup.com

ILSA
The green evolution

DEGREES BRIX



The final quality and, therefore, the commercial value of grapes, peaches, strawberries, melons and other fruits greatly depends on the sugar degree at harvest. Obviously, the greater the value of final production, the higher is the farmer's income.

The sugar degree is measured in degrees Brix: the degree Brix expresses the amount of sugars contained in fruits and vegetables, in wine and drinks and in the intermediate products of sugar preparation; it does so by measuring the solid substances dissolved in a liquid. For instance, a 25 °Brix solution contains 25 grammes of solid substances per 100 grammes of total liquid.

The degree Brix, specific for each type of fruit, measures the ripening degree and the overall quality reached by fruits. The greater the degree Brix, the greater are quality and transformation potential. The ensemble of agronomic and environmental choices and the genetic potential of crops strongly affect the degree Brix.

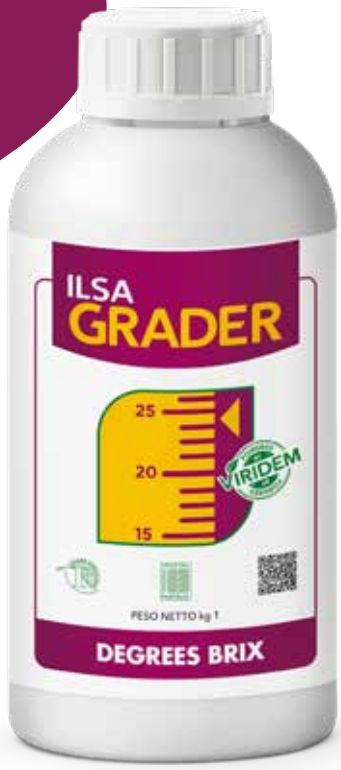
The ILSA products with a specific action on the sugar degree, based on polysaccharides, potassium, betaines, algae extracts and other plant components, foster the production of sugars by the plant and their transfer into the final product, so also improving the balance between flavours and savours.

ILSA
The green evolution

ILSA GRADER

POWERED BY VIRIDEM

INCREASES SUGAR CONTENT



1 kg

5 kg

20 kg

Benefits

- Increases sugar content and fruit quality
- Allows achieving the right degree of fruit ripeness
- Increases the value of final production

Characterising substances

- **POTASSIUM THIOSULPHATE**
- **BETAINES**
- **POLYSACCHARIDES**
- **ALGINATES**

	COMPONENTS	POTASSIUM THIOSULPHATE	BETAINES AND ALGINATES	POLYSACCHARIDES
ACTIONS	INCREASE IN SUGAR CONTENT	✓	✓	✓
	EARLIER AND UNIFORM RIPENING	✓	✓	✓

Chemical and physical features

LIQUID BROWN COLOUR	
pH	8.0 ± 0.6
DENSITY	1.30 ± 0.02 kg/dm³
CONDUCTIVITY E.C.	3.90 ± 0.25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	4%
of which ORGANIC NITROGEN (N) (% p/p)	1%
UREA NITROGEN (N) (% p/p)	3%
WATER SOLUBLE POTASSIUM (K_2O) (% p/p)	12%
ORGANIC CARBON (C) (% p/p)	8%

FOLIAR FERTILIZER

VEGETAL ORGANIC MATRIX

Contains in particular

- PLANT EXTRACTS WITH HIGH BETAINE CONTENT
- FLUID YEAST EXTRACT CONTAINING BROWN ALGAE

DEGREES BRIX

Description

The sugar content in fruits depends on photosynthesis intensity and the capacity of plants to transfer these photosynthesis products into fruits at the right time. In this very period, starting from veraison, one can increase sugar accumulation through specific nutrients and molecules, such as phosphorylated sugars and potassium, which also regulate plant transpiration in the ripening stage, preventing possible stress.

The greater sugar content (expressed in degrees Brix) is a qualitative index increasing the value of final production and, accordingly, the farmer's income.

ILSAGRADER, *based on polysaccharides, potassium thiosulphate, betaines and alginates, is designed for the ripening stages of fruit productions, for it increases fruit consistency, the accumulation of acids and their transformation into sugars, while also improving the balance between flavours and savours without affecting the final pH. In case of excess productions or climate conditions that can limit the natural ripening process,* **ILSAGRADER** *is particularly suited to increase fruit sugar content and dry matter as well as reduce production waste. As for fruit tree crops,* **ILSAGRADER** *is the ideal solution to increase the quality and value of final production, destined for both fresh consumption and transformation.*

*Directions for use**

CROP	DOSE	NOTES
APRICOT TREE, CHERRY TREE, PEACH TREE, NECTARINE, PLUM TREE	2.5-3 kg/ha	2-3 applications, every 10-12 days, from the veraison stage
APPLE TREE, PEAR TREE	2-2.5 kg/ha	2-3 applications, every 10-12 days, from the veraison stage
BLUEBERRY AND OTHER SMALL FRUITS	1.5-2 kg/ha	2-3 applications, every 10-12 days, from the veraison stage
MELON, STRAWBERRY, TOMATO	2-2.5 kg/ha	2-3 applications, every 10-12 days, from the enlargement stage
WINE AND TABLE GRAPES	2.5-3 kg/ha	2-3 applications, every 10-12 days, from the veraison stage

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

DEGREES BRIX

From the Viridem® program, Ilsagrader.
More sugars, more quality.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA.
They help your plants do their job.

ILSAGRADER is designed to obtain the right degree of ripeness in fruit production, as it increases fruit consistency, the accumulation of acids and their transformation into sugars, also improving the balance between aromas and flavours without affecting the final pH. ILSAGRADER increases the sugar content in fruits and the dry matter, reducing production waste, and increasing the quality and value of the end production. ILSAGRADER also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive.
And yours too.

Recommended for: Grapes and Wine, Stone Fruits, Pome Fruits, Melon, Strawberry, Blueberry, Blackberry, Raspberry, Currant.

www.theintrepidi.it

www.ilsagroup.com

ILSA
The green evolution

ROT AND CRACKINGS

The quality of fruits and vegetable depends not only on their organoleptic features, but also on their physical aspect. The presence of cracking can also cause rot and further deterioration of final quality.

Splitting and cracking are a serious problem for all fruits. During dry periods the skin loses elasticity. When then it rains or crops are irrigated unevenly, the fruit absorbs a great quantity of water in little time, which causes the skin to burst at its weakest point. In particular, in the most sensitive cultivars it is necessary to minimise physiological stress and fruit cracking.

Crop feeding plays an important role in limiting cracking and splitting. In fruits, especially in the skin, adequate concentrations of calcium and boron and the right quantity of essential amino acids are fundamental: if the elasticity of cell walls grows, these are less susceptible to splitting and cracking even without excess nitrogen, which could reduce the skin's thickness

The ILSA products with a specific action on resistance to rot and cracking, based on calcium, potassium, betaines, vitamins, phenolic compounds and other plant extracts, allow increasing the resistance and elasticity of the fruit's skin and preventing rot.


ILSA
The green evolution

ILSA INTEGER

AGAINST ROT AND CRACKING

1 kg

5 kg

20 kg

Benefits

- Reduces cracking in vegetables
- Avoids blossom end rot and other rot from cracking
- Increases the quality of final production

Characterising substances

- **PROLINE**
- **ALANINE**
- **LYSINE**
- **SERINE**
- **GLYCINE**
- **CALCIUM**
- **MAGNESIUM**

	COMPONENTS	AMINO ACIDS FROM ENZYMATIC HYDROLYSIS	CALCIUM	MAGNESIUM
ACTIONS	RESISTANCE OF FRUIT EPIDERMIS	✓	✓	
	REDUCTION OF ROT AND NUTRITIONAL DEFICIENCIES	✓	✓	✓

Chemical and physical features

- **LIQUID AMBER YELLOW COLOUR**
- **pH 5.5 ± 0.5**
- **DENSITY 1.39 ± 0.02 kg/dm³**
- **CONDUCTIVITY E.C. 5.20 ± 0.20 dS/m**

Composition

TOTAL NITROGEN (N) (% p/p)	9%
of which ORGANIC NITROGEN (N) (% p/p)	3%
NITRIC NITROGEN (N) (% p/p)	6%
WATER SOLUBLE CaO (% p/p)	9%
WATER SOLUBLE MgO (% p/p)	2%
ORGANIC CARBON (C) (% p/p)	9%

FOLIAR FERTILIZER

Contains in particular

- **CO-FORMULANT FROM ENZYMATIC HYDROLYSIS**
- **CALCIUM**
- **MAGNESIUM**

ROT AND CRACKINGS

Description

Tomato, pepper, melon and all the other fruit vegetable crops are very susceptible to fruit cracking and rot phenomena, both in open field and in the greenhouse.

Excessive fertilisation can cause fruits to develop desproportionately; these latter, if not provided with a resistant epidermis, can be more susceptible to cracking and pathogenic attacks. In open field, moreover, such risks are exacerbated by particular climate events (hailstorm, rain and thermal leaps), which put a strain on fruit integrity. Another major risk is rot, caused by nutritional deficiencies (like blossom end rot) or fungal agents penetrating through cracks.

ILSAINTEGER *is a special product purposedly designed to reduce rot and cracking in tomatoes, peppers, melons and other fruit vegetable crops, as well as tuber and root vegetable crops (potato, carrot and turnip).*

The high quantity of amino acids (alanine, lysine, serine, glycine and proline in particular) promotes the regulation of cell osmosis and the efficiency of nutrient absorption. Also, the high content of calcium and magnesium removes the risks of deficiencies in these specific crops and, at the same time, the mechanical resistance of tissues is increased, thanks to supporting and strengthening of cell walls and membranes. This way, **ILSAINTEGER** *increases the value of final production, by reducing production waste and increasing the number of actually marketable fruits.*

*Directions for use**

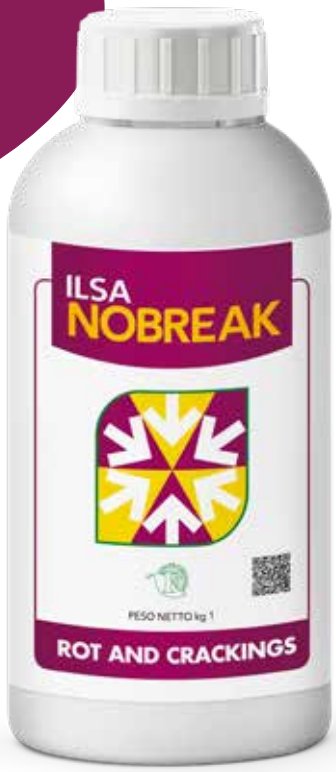
CROP	DOSE	NOTES
TOMATO, PEPPER, AUBERGINE, STRAWBERRY	2.5-3 kg/ha	2-3 applications, every 7-8 days, from fruit enlargement
MELON, WATERMELON, COURGETTE, CUCUMBER	2-2.5 kg/ha	2-3 applications, every 7-8 days, from fruit enlargement
TOMATO, PEPPER AND OTHER FRUIT VEGETABLES IN THE GREENHOUSE	0.3-0.4 kg/1,000 m^2	2-3 applications, every 7-8 days, from fruit enlargement
POTATO, CARROT, TURNIP, RADISH	2-2.5 kg/ha	2-3 applications, every 8-10 days, during the development of tubers and rhizomes

**The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSA NOBREAK

PROMOTES FRUIT RESISTANCE



1 kg

5 kg

20 kg

Benefits

- Reduces cracking and deterioration of fruits, grapes and olive tree
- Increases pulp consistency and skin resistance
- Improves organoleptic features and final production value

Characterising substances

HIGHLY ASSIMILABLE CALCIUM

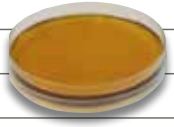
PROLINE

HYDROXYPROLINE

GLUTAMIC ACID

	COMPONENTS	AMINO ACIDS FROM ENZYMATIC HYIDROLYSIS	PROTEIN NITROGEN	CALCIUM
ACTIONS	RESISTANT EPIDERMIS AND GREATER CONSISTENCY	✓		✓
	GREATER FINAL QUALITY	✓	✓	✓

Chemical and physical features



LIQUID AMBER YELLOW COLOUR	
pH	6.0 ± 0.5
DENSITY1	1.28 ± 0.02 kg/dm³
CONDUCTIVITY E.C.	4.00 ± 0.20 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	5%
of which ORGANIC NITROGEN (N) (% p/p)	5%
WATER SOLUBLE CaO (% p/p)	8%
ORGANIC CARBON (C) (% p/p)	15%

Contains in particular

CO-FORMULANT FROM ENZYMATIC HYDROLYSIS

CALCIUM

ROT AND CRACKINGS

Description

Fruit cracking is quite a hazard for farmers, who risk seeing their entire production depleted. The causes can be many: atmospheric conditions such as hail, excessive rain, sudden changes in temperature, but also unbalanced fertilizations or excessive use of growth regulators. The excessive swelling of fruit causes considerable pressure on the epidermis which, if not developed in harmony with the internal part, can cause injuries, which may facilitate the entry of parasites, thus causing further rottenness and defects. The consequence is the loss of value of the final production. Many fruit crops are particularly susceptible to cracking, the same species that take considerable advantage of the supply of calcium, organic nitrogen and amino acids.

ILSANOBREAK *is a special product designed to reduce the cracking phenomena of Stone fruits, Pomaceous fruit, Citrus fruit, Table grape vines, wine grape vines and Olive vines. The presence of nitrogen, exclusively of a protein nature, not only avoids excessive swelling of the fruit, but also allows* **ILSANOBREAK** *to supply specific amino acids (proline, hydroxyproline, glutamic acid in particular) that enable the smooth running of all the maturation stages. Furthermore, the calcium introduced directly via the leaves (with limited mobility inside the plant) allows to increase the mechanical resistance of the peel and the consistency of the pulp, thanks to a process that reinforces the walls and the cell membranes and the greater elasticity of the membranes, as a result of the stimulation of cell division and elongation.*

ILSANOBREAK *provides protein nitrogen, amino acids from enzymatic hydrolysis and calcium of the highest quality, fundamental in avoiding qualitative defects in apples (bitter pit), pears, drupaceous and citrus fruits, thus guaranteeing a high final quality of production.*

*Directions for use**

CROP	DOSE	NOTES
CITRUS	2.5-3 kg/ha	3-4 applications, every 10-15 days, from fruit enlargement
APPLE TREE, PEAR TREE	2.5-3 kg/ha	3-4 applications, every 10-15 days, from fruit enlargement
CHERRY TREE	2-3 kg/ha	3-4 applications, every 10-15 days, from fruit enlargement
PEACH TREE, NECTARINE, APRICOT TREE, PLUM TREE	2-2.5 kg/ha	3-4 applications, every 10-15 days, from fruit enlargement
OLIVE TREE	2-2.5 kg/ha	2-3 applications, every 10-12 days, from the olive ripening phase
WINE AND TABLE GRAPES	2-2.5 kg/ha	2-3 applications, every 10-12 days, from berries enlargement

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ROT AND CRACKINGS

From ILSA, Ilsanobreak. Increase resistance to rottenness and cracking.

ILSA products with a specific action.

ILSANOBREAK is designed to increase the resistance of fruits to cracking, reducing moulds and rottenness. It thickens the peel and carries out an antioxidant and prevention action against external stress. ILSANOBREAK guarantees excellent quality of the end production, increasing the amount of marketable fruit.

May their work be productive.
And yours too.

Recommended for: Citrus, Apple Tree, Pear Tree, Cherry Tree, Peach and Nectarine, Apricot Tree, Plum Tree.

www.ilsagroup.com

ILSA
The green evolution

www.theintrepidi.it

ROOTING

In plants all activities are regulated by typical plant hormones that, with different functions, interact and are interdependent. Also, when combining they affect the production of other hormones, regulate specific and complex activities and are largely responsible for the plant's development speed. A few substances facilitate auxin accumulation in root tissues, that is, make early root production easier. Their presence stimulates the plant's natural potential to produce roots in highly fertile soils.

A root stimulator must ensure good root development during the stages of germination, seedlings rooting and vegetative growth. It also helps maintain roots in good health by preparing the crop for the following stages of flowering and fruit set. Finally, it is expected to exert an anti-stress function in the post-repotting stages and in times of drought or excessive heat.

To allow a good vegetative start of plants, which lays the groundwork for a good final production, it is essential to improve the development of root systems. In particular, in the stages of seedlings germination and rooting, initial stresses (shock from transplanting) must be reduced.

The ILSA products with a specific action on increasing rooting, based on phosphorus, humic substances, amino acids and plant extracts, foster the accumulation of natural hormones in the basal part of plants and, accordingly, an easier and faster root development.

ILSA

The green evolution

ILSA DEEPDOWN

STIMULATES ROOTING AND THE EARLY VEGETATIVE STAGES

5 kg

20 kg

Benefits

- Starter effect on root growth and development
- Improves plant production
- Improves the absorption and use of nutrients and water

Characterising substances

AMINO ACIDS

HIGHLY SOLUBLE PHOSPHORUS

	COMPONENTS	ESSENTIAL AMINO ACIDS	HIGHLY ASSIMILABLE PHOSPHORUS	PROTEIN NITROGEN
ACTIONS	ROOTING STIMULATION	✓	✓	✓
	REDUCTION OF POST-TRANSPLATING SHOCKS	✓		✓

Chemical and physical features

LIQUID COLOUR	LIGHT YELLOW
pH	6.0 ± 0.5
DENSITY	1.19 ± 0.02 kg/dm^3
CONDUCTIVITY E.C.	3.10 ± 0.20 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	5%
of which ORGANIC NITROGEN (N) (% p/p)	1%
AMMONIA NITROGEN (N)	4%
TOTAL PHOSPHORUS PENTAOXIDE (P_2O_5) (% p/p)	15%
ORGANIC CARBON (C) (% p/p)	3%

FERTIGATION

Contains in particular

HYDROLYSATED ANIMAL EPITHELIUM, AMMONIUM POLYPHOSPHATE

ROOTING

Description

All plant biochemical processes are regulated by the combinations between plant hormones and enzymes specialised in controlling each specific, complex metabolic activity; these are largely responsible for the growth speed of each new plant.

The biochemical combinations between Phosphorus and natural hormones facilitate auxin accumulation in the basal region and, accordingly, the production of early roots. All these agents, when in a proper ratio, stimulate each plant's capacity to produce roots in highly fertile soils.

ILSADEEPDOWN *used through leaves improves the development of root systems in the germination stage, the rooting of transplanted seedlings and vegetative growth. Well-formed and stress-free roots prepare the crop for the following stages.* **ILSADEEPDOWN** *helps plants to better defend themselves in post-repotting and post-transplanting stress and at times of heat or water imbalance.*

ILSADEEPDOWN *is a formulation based on protein nitrogen, specific amino acids for the rooting stages and highy soluble and readily available phosphorus.*

ILSADEEPDOWN *is the solution to the need of fruit vegetable crops (tomatoes, peppers, melons, courgettes, strawberries and other vegetable crops) and nursery vegetable crops to make the best use of nutritional and water resources in order to develop, from the early stages, root systems suited to support the crop's entire cycle and reduce unfavourable critical situations.*

*Directions for use**

CROP	DOSE	NOTES
INDUSTRIAL TOMATO, PEPPER, POTATO, AUBERGINE	25-30 kg/ha	2-3 applications, during early fertigation
MELON, WATERMELON, COURGETTE, CUCUMBER, STRAWBERRY	20-30 kg/ha	2-3 applications, during early fertigation
TOMATO AND OTHER FRUIT VEGETABLE CROPS IN THE GREENHOUSE	2-3 kg/1,000 m^2	2-3 applications, during early fertigation
LETTUCE AND OTHER LEAF VEG. CROPS	20-25 kg/ha	2-3 applications, during early fertigation
LETTUCE, FRENCH BEAN AND FRESH CUT VEGETABLES IN THE GREENHOUSE	2-3 kg/1,000 m^2	2-3 applications, during early fertigation
NURSERIES FOR VEGETABLE CROPS	500-800 g/100 L water	2-3 applications as needed

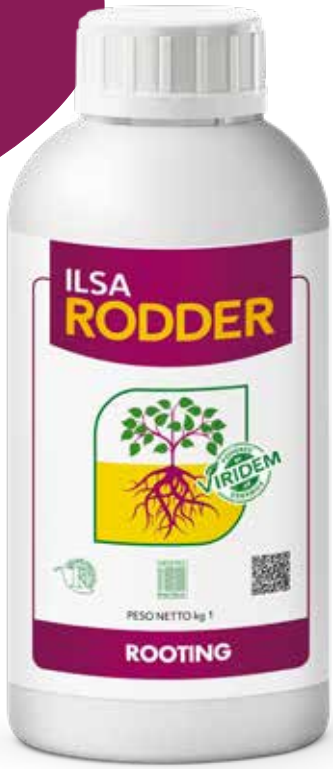
** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSA RODDER

POWERED BY VIRIDEM

STIMULATES ROOTING AND THE GROWTH OF PLANT BIOMASS



1 kg

5 kg

20 kg

Benefits

- Stimulates root enlargement and development
- Induces better flowering and fruitset
- Enhances the use of nutrients and water

Characterising substances

- **HUMIC SUBSTANCES**
- **PHOSPHORUS**
- **TYROSINE**
- **GLUTAMIC ACID**
- **PROTEIN NITROGEN**

	COMPONENTS	HUMIC SUBSTANCES	HIGHLY ASSIMILABLE PHOSPHORUS	AMINO ACIDS FROM ENZYMATIC HYDROLYSIS
ACTIONS	ROOT DEVELOPMENT	✓	✓	✓
	VEGETATIVE DEVELOPMENT ANTI-STRESS FUNCTION	✓		✓

Chemical and physical features

LIQUID BROWN COLOUR
pH 6.5 ± 0.5
DENSITY 1.16 ± 0.02 kg/dm³
CONDUCTIVITY E.C. 2.25 ± 0.25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	**5%**
of which ORGANIC NITROGEN (N) (% p/p)	**2.5%**
AMMONIA NITROGEN (N) (% p/p)	**2.5%**
TOTAL PHOSPHORUS PENTAOXIDE (P_2O_5)	**9%**
ORGANIC CARBON (C) (% p/p)	**7%**

FOLIAR FERTILIZER

ORGANIC VEGETAL MATRIX

Contains in particular

HUMIC EXTRACTS

ROOTING

Also acts on PLANT BIOMASS

Description

In plants all activities are regulated by typical plant hormones that combine, regulate specific and complex activities and are largely responsible for the plant's growth speed. They facilitate the accumulation of natural auxins in the basal region and, therefore, the production of early roots.

ILSARODDER *ensures root development during the early stages of seedlings rooting and vegetative growth. It helps maintain roots in good health and prepares the crop for the following stages of vegetative development and plant biomass increase. It has an anti-stress function in post-potting and in times of drought or excessive heat.*

ILSARODDER *is the solution to the need of fruit vegetable crops (tomatoes, peppers, melons, courgettes, strawberries and other crops) and ornamental crops to make the best use of nutritional and water resources, in order to develop root systems suited to support plants throughout their vegetative/productive cycle.*

ILSARODDER *is a formulation based on humic substances, highly soluble phosphorus (from ammonium polyphosphate), specific amino acids from enzymatic hydrolysis (tyrosine and glutamic acid in particular) and protein nitrogen, which help overcome climate stresses and foster the development of root hairs and the growth of biomass.*

*Directions for use**

CROP	DOSE	NOTES
ASPARAGUS	2-3 kg/ha	2-3 applications, every 4-7 days, from early shoot emergence
CAULIFLOWER AND OTHER CABBAGES	2-2.5 kg/ha	3 applications, every 10-12 days, from post-transplanting
FENNEL	2.5-3 kg/ha	3 applications, every 10-12 days, from post-transplanting
ARTICHOKE	2-2.5 kg/ha	2-3 applications, every 7-12 days, from growth resumption
SUGAR BEET, RAPESEED	2-3 kg/ha	2-3 applications, in the early stages
LETTUCE AND OTHER LEAF VEGET. CROPS	2-2.5 kg/ha	2-3 applications, every 4-7 days, in the early stages
TOMATO, PEPPER, MELON, POTATO	2.5-4 kg/ha	2-3 applications, every 8-10 days, during the early stages
VEGETABLE CROPS IN THE GREENHOUSE	0.3-0.4 kg/1,000 m^2	2-3 applications, every 8-10 days, during the early stages
FLOWER AND ORNAMENTAL CROPS	100 g/100 L water	When applied in the early stages
TURF-PLANTS, FLOWERS, POT-PLANTS, GARDEN NURSERIES	1 kg/1,500-2,000 m^2	2-3 applications in root growth phases
CULTURES FOR FRESH VEGETABLES	1-2 kg/1,000 m^2	2-3 applications, the first after first real leaves appear

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

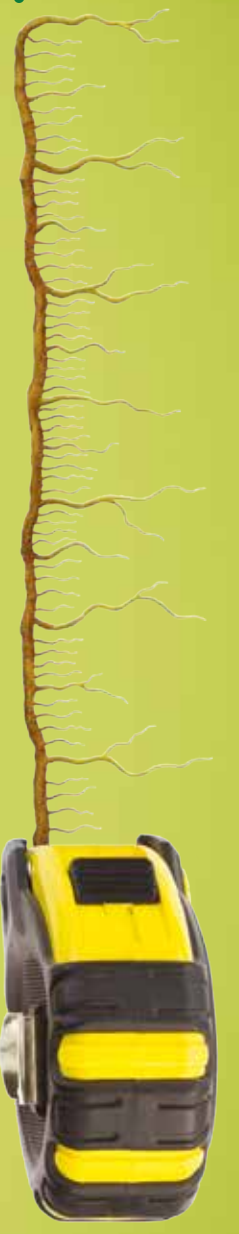
ILSA
The green evolution

ROOTING

From the Viridem® program, Ilsarodder. Stimulate rooting and early vegetative phases.

VIRIDEM®

vegetal extracts for agricultural use



Viridem® Biostimulant by ILSA. They help your plants do their job.

ILSARODDER has a starter effect on root development, improving absorption and the use of nutrients and water. Applied via the leaves, ILSARODDER improves the growth of roots during germination, the rooting of transplanted plants and plant growth, helping them during post-transplant stress and in times of thermal or water imbalance.

May their work be productive.
And yours too.

Recommended for: Solanacee, Cucurbitacee, Strawberry, Leafy and Nursery Vegetables, Green Bean, Cultures for Fresh Vegetables.

www.theintrepidi.it

www.ilsagroup.com

ILSA
The green evolution

SHELF-LIFE

Shelf-life is the time within which a particular food must be consumed, under certain preservation conditions, following which degradation happens at the sensory level (smell, colour and savour), at the nutritional level (degradation of proteins and other substances) and from the hygienic point of view (microbiological contamination and proliferation of bacterial colonies). Shelf-life directly depends on the level of maturation and health of plant products and on the processing they can endure.

Extending the shelf-life of fruits and vegetables allows managing all post-harvest operations more easily and extend market life, so preventing sensory, nutritional and hygienic degradation from jeopardising the final product quality. All of this means to better exploit agricultural productions commercially.

The ILSA products with a specific action on increasing shelf-life, based on amino acids, humic substances and other selected plant extracts, have a strong anti-oxidising and regulating action on the cell processes that keep fruits and vegetables good for longer.


ILSA
The green evolution

ILSA DURADA

POWERED BY VIRIDEM

PROMOTES SHELF-LIFE

BIOSTIMULANT

1 kg

5 kg

20 kg

Benefits

- Extends the shelf-life in post-harvest
- Allows preserving the consistency of pulp and peel
- Allows an easier management of harvest phases

Characterising substances

- **PLANT-DERIVED TRIACONTANOL**
- **AROMATIC POLYKETIDES**
- **NARINGIN DERIVATIVES**
- **GALLIC ACID**
- **CAFFEIC ACID**
- **CHLOROGENIC ACID**
- **VITAMIN B6**

	COMPONENTS	PLANT-DERIVED TRIOCONTANOL	AROMATIC POLYKETIDES	POLYPHENOLIC ACIDS AND PHENYLPROPANOIDS	VITAMIN B6
ACTIONS	OXIDATION REDUCTION	✓	✓	✓	
	PRESERVATION OF CONSISTENCY AND SAVOUR	✓	✓	✓	✓

Chemical and physical features

- **LIQUID BROWN COLOUR**
- **pH 5.5 ± 0.5**
- **DENSITY 1.14 ± 0.02 kg/dm³**
- **CONDUCTIVITY E.C. 1.50 ± 0.25 dS/m**

Composition

TOTAL AMINO ACIDS (% p/p)	**5%**
FREE AMINO ACIDS (% p/p)	**1.5%**
NATURAL TRIACONTANOL (mg/kg)	**12.0**

Contains in particular

- **ENZYMATIC HYDROLYSATE OF FABACEAE**

FOLIAR FERTILIZER

VEGETAL ORGANIC MATRIX

ORGANIC FARMING ILSA

SHELF-LIFE

Description

The ability to preserve fruit and vegetables after harvesting is a determining factor in the value of final production. In fact, delaying rotting, loss of consistency and flavour guarantees the final quality of the product for an extended period of time, even if it is destined for distant markets or large distribution counters. This phenomenon is governed both by processes at the cellular level (loss of cell turgor pressure, degradation of pectin) and biotic factors, due to the pathogens that cause rottenness and rancidity.

ILSADURADA, *made from Fabaceae enzymatic hydrolysis, enables to increase the shelf-life of fruit and vegetables; easily perishable products which as a result, however, remain edible for a longer time. The high amount of natural origin triacontanol acts by improving the absorbed nitrogen assimilation efficiency, favouring the transformation of nitrates and ammonium into amino acids and thus avoiding their accumulation in fruits and leaves. Moreover, the presence of vitamins (in particular B6) and specific compounds with intense antioxidant activity, such as aromatic polyketides and naringin derivatives, polyphenol acids and phenylpropanoids (gallic acid, chlorogenic acid, caffeic acid, etc.) influence the secondary metabolism, thanks to the accumulation of antioxidants, the reduction of the enzyme activity that degrades pectin (pectasi and pectinases) and to the activity of the defence enzymes deriving from oxidative stress (peroxidase, catalase), caused by the presence of free radicals.*

ILSADURADA *is indicated for Stone fruits, Pomaceous fruit, table and wine grapes, citrus fruits, small fruits, tomatoes, peppers, melons and also leaf horticulture, in particular those destined for the IV range products, whose market destination implies a post-harvest longer life.*

*Directions for use**

CROP	DOSE	NOTES
APRICOT, CHERRY, PEACH, NECTARINE, PLUM TREE	2-2.5 kg/ha	2-3 applications, every 10-12 days, from pre-veraison
LETTUCE AND OTHER CULTURES FOR FRESH VEGETABLES	1.5-2 kg/ha	2-3 applications, every 7 days, from 3 weeks before cutting
APPLE TREE, PEAR TREE, ACTINIDIA	2-2.5 kg/ha	2-3 applications, every 10-12 days, from the end of the enlargement stage
MELON, COURGETTE, CUCUMBER	1.5-2 kg/ha	2-3 applications, every 10-12 days, from the end of the enlargement stage
BLUEBERRY, STRAWBERRY AND OTHER SMALL FRUITS	1.5-2 kg/ha	2-3 applications, every 10-12 days, from the veraison stage
TOMATO, PEPPER AND OTHER SOLANACEAE	1.5-2 kg/ha	2-3 applications, every 10-12 days, from the veraison stage
TABLE AND WINE GRAPES	2-2.5 kg/ha	2-3 applications, every 10-12 days, from pre-veraison

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

From the Viridem® program, Ilsadurada.
Your fruit will last longer.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA.
They help your plants do their job.

ILSADURADA is designed to extend the shelf life of post-harvest vegetables. The use of ILSADURADA enables maintaining the consistency of fruit and vegetables, allowing easier handling during harvesting operations, increasing shelf-life, keeping them just right for a longer period. ILSADURADA also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive. And yours too.

Recommended for: Lettuce and Cultures for Fresh Vegetables, Melon, Courgette, Cucumber, Tomato, Pepper and other Solanacee.

www.theintrepidit.it

www.ilsagroup.com

ILSA
The green evolution

From the Viridem® program, Ilsadurada.
Your fruit will last longer.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA.
They help your plants do their job.

ILSADURADA is designed to extend the shelf life of post-harvest vegetables. The use of ILSADURADA enables maintaining the consistency of fruit and vegetables, allowing easier handling during harvesting operations, increasing shelf-life, keeping them just right for a longer period. ILSADURADA also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive.
And yours too.

Recommended for: Lettuce and Cultures for Fresh Vegetables, Melon, Courgette, Cucumber, Tomato, Pepper and other Solanacee.

www.theintrepidi.it

www.ilsagroup.com

ILSA
The green evolution

TOLERANCE TO HEAT AND WATER STRESS

The weather conditions characterising each geographical area comprise the whole of climate factors such as temperature, solar radiation, atmospheric precipitation, wind, humidity, soil evaporation, etc. The growth of plants is linked to their environment. Each plant species has, towards each environmental factor, a tolerance level within which it performs its vital functions.

Plants have organic temperatures similar to those of the surrounding environment. Below 0 °C photosynthesis is almost absent and the plant enters a state of latent life; above 50 °C protoplasm coagulation begins. Within this range each species and variety finds its ideal conditions.

To withstand extreme conditions, for example excessive heat or cold, plants modify water availability and solute concentration in the sap. Stresses from high or low temperatures and from water deficiency or excess can jeopardise the vital functions of crops (photosynthesis, vegetative development and nutrient absorption) with noticeable impact on production and, consequently, final quality.

The ILSA products with a specific action on tolerance to heat and water stress, based on specific amino acids, potassium and selected plant extracts, allow a smooth progress of cell processes, so helping crops produce at high levels even under adverse conditions.

ILSA
The green evolution

ILSA TERMIKO

IMPROVES RESISTANCE TO HEAT AND WATER STRESS

BIOSTIMULANT

1 kg

5 kg

20 kg

Benefits

- Prevents stress due to high and low temperatures and drought
- Promotes growth resumption after critical environmental conditions
- Improves cell content concentration

Characterising substances

PROLINE
GLYCINES
SERINE
CYSTEINE
HYDROXYPROLINE
GLUTAMIC ACID

	COMPONENTS	HIGH CONTENT OF FREE L-PROLINE	ANTI-STRESS L-AMINO ACIDS
ACTIONS	REDUCTION OF HEAT AND WATER STRESS	✓	✓
	POST-STRESS GROWTH RESUMPTION		✓

Chemical and physical features

LIQUID BROWN COLOUR
pH 5.5 ± 0.5
DENSITY 1.22 ± 0.02 kg/dm³
CONDUCTIVITY E.C. 1.00 ± 0.20 dS/m

Composition

ORGANIC NITROGEN (N) (% p/p)	**8.7%**
of which SOLUBLE ORGANIC NITROGEN (N) (% p/p)	**8.7%**
ORGANIC CARBON (C) (% p/p)	**24.5%**

Contains in particular

FLUID HYDROLYSATE ANIMAL EPITHELIUM

TOLERANCE TO HEAT AND WATER STRESS

Description

Plant growth is regulated in a very precise manner. Plants are strictly linked to their environment and each plant species has towards each environmental factor a tolerance range within which it can perform its vital functions. Below 0 °C photosynthesis is almost absent whereas above 50 °C protoplasm coagulation starts to take place. Within this range, each species and variety finds its ideal conditions. To withstand extreme conditions (excessive heat or cold) plants must implement natural mechanisms at the cell level, modifying solute concentration and osmotic pressure.

ILSATERMIKO *is an efficient anti-stress product, thanks to the high content of free L-amino acids (from enzymatic hydrolysis), especially proline, hydroxyproline, glycine, serine, glutamic acid, cysteine and other essential amino acids that increase the concentration of cell solutes to ensure protection from osmotic stress, dehydration and thermal leaps.* **ILSATERMIKO** *also acts in the critical ripening stages thanks to the crucial role of the free L-amino acids in regulating the transpiration of plant tissues.* **ILSATERMIKO** *improves plant tolerance to environmental stresses, in particular fruits, fruit vegetables crops, grape, greenhouse plants and ornamental crops, thanks to its efficiency action during vegetative and maturation phase.*

*Directions for use**

CROP	DOSE	NOTES
APRICOT, CHERRY TREE, PEACH, NECTARINE, PLUM TREE	2-2.5 kg/ha	2-3 applications, every 7-10 days, in case of stress event and in the ripening stage
APPLE TREE, PEAR TREE, ACTINIDIA	2-2.5 kg/ha	2-3 applications, every 10-15 days, in case of stress event and in the ripening stage
CITRUS, OLIVE TREE, BLUEBERRY AND OTHER SMALL FRUITS	1.5-2 kg/ha	2-3 applications, every 7-10 days, in case of stress event and in the ripening stage
TABLE AND WINE GRAPE	2-2.5 kg/ha	2-3 applications, every 10-15 days, in case of stress event and in the ripening stage
TOMATO, PEPPER, AUBERGINE	2-3 kg/ha	2-3 applications, every 5-7 days, at times of stress or greater risk during vegetative development
MELON, WATERMELON, STRAWBERRY	2.5-3 kg/ha	2-3 applications, every 7 days, in case of stress event or higher risk during vegetative development
GARLIC, ONION	2-3 kg/ha	2-3 applications, every 7 days, in case of stress event or higher risk during vegetative development
LETTUCE AND OTHER LEAFY VEGETABLES	2.5-3 kg/ha	3-4 applications, every 7 days, at times of stress or greater risk during vegetative development
ORNAMENTAL AND FOREST NURSERIES	50-100 g/100 L water	Every 8-10 days, in full vegetative development

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

TOLERANCE TO HEAT AND WATER STRESS

From ILSA, Ilsatermiko.
Thermal and water stresses do not affect us.

ILSA products with a specific action.

ILSATERMIKO is designed to prevent and counter stress from high and low temperatures and from droughts. The use of ILSATERMIKO favours vegetative recovery after critical environmental periods, improving the concentration of cellular contents.

May their work be productive.
And yours too.

Recommended for: Tomato, Pepper, Aubergine, Melon, Watermelon, Strawberry, Vegetables.

www.ilsagroup.com

ILSA
The green evolution

www.theintrepidi.it

SALINITY TOLERANCE

Salinity causes serious damage to agriculture and plant productivity. High sodium concentrations reduce water absorption by roots and damage cells, so seriously threatening the plant's survival. The plant reacts to saline stress first by blocking the activity of sprouts, then by accelerating the senescence of already developed tissues. If somehow it manages to survive, its productivity will certainly be compromised.

At the physiological level, plants suffer three types of salinity damage: osmotic, nutritional and toxic.

Osmotic damage is due to a reduction of cell turgor that involves the alteration of metabolic processes and the inhibition of growth.

An increased concentration in tissues of a few ions, sodium in particular, has a toxic and denaturating effect towards cytoplasmic enzymes. This leads to reduced early growth (leaf area reduction and shortened internodes) and afterwards, in the most serious cases, browning, spread necroses and death of tissues.

Excess salinity, due to the use of brackish waters or excessive use of mineral fertilisers, can cause problems of absorption by crops and, in the most serious cases, damage at the cell level leading to stunted growth, no production and death of plants.

The ILSA products with a specific action on salinity tolerance, based on amino acids, proteins, polysaccharides and other plant extracts, limit the negative factors linked to salinity, promoting the absorption of nutrients and water and allowing crops to grow and produce even in difficult conditions.


ILSA
The green evolution

ILSA STIMSET

POWERED BY VIRIDEM

OSMOTIC BALANCER IN THE FRUIT GROWTH STAGE

5 kg

20 kg

Benefits

- Provides vegetative energy and regulates flowering
- Balances osmotic-exchange stimulating cell walls permeability
- Reduces sensitivity to salinity and promotes fruit set

Characterising substances

PROTEIN NITROGEN AND CARBON

ANIMAL- AND PLANT-DERIVED AMINO ACIDS AND PEPTIDES

	COMPONENTS	PROTEIN NITROGEN AND CARBON	AMINO ACIDS AND PEPTIDES	PLANT-DERIVED AMINO ACIDS
ACTIONS	CELL TURGOR AND TISSUE EXPANSION		✓	✓
	REGULATION OF FLOWERING, FRUIT SET AND FRUIT DEVELOPMENT	✓	✓	✓

Chemical and physical features

LIQUID BROWN COLOUR

pH 5.5 ± 0.5

DENSITY 1.20 ± 0.02 kg/dm³

CONDUCTIVITY E.C. 0.90 ± 0.20 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	8%
of which ORGANIC NITROGEN (N) (% p/p)	8%
ORGANIC CARBON (C) (% p/p)	22%

Contains in particular

PLANT EXTRACTS

FERTIGATION

ORGANIC VEGETAL MATRIX

ORGANIC FARMING ILSA

SALINITY TOLERANCE

Also acts on SIZE, FLOWERING and FRUIT SET

Description

Cell elongation during fruit development must happen rapidly: the growth is due not only to hormonal factors but also to increased volume and water content. In this stage, cell walls, structurally elastic, are stretched by the pressure created by water inside vacuoles (featuring a high concentration of ions, sugars and nitrogen compounds). By osmotic exchange, until equilibrium is reached, water penetrates and promotes cell turgor, which is fundamental to keep plant tissues stretched.

ILSASTIMSET *ensures greater efficiency in the selective absorption of nutrients and proper vegetative development, especially from the flowering stages to fruit development. By balancing nutrient absorption, it allows maturating a greater number of bigger-sized fruits.*

The use of **ILSASTIMSET** *helps plants to stay tonic even in saline stress situations.*

ILSASTIMSET *is a formulation for soil application based on animal- and plant-derived amino acids and peptides, protein nitrogen and other fundamental ingredients to help overcome climate stress and promote cell turgor. It is designed to accompany the development stages of fruit crops and fruit vegetable crops.*

*Directions for use**

CROP	DOSE	NOTES
TOMATO, PEPPER, POTATO, AUBERGINE	25-30 kg/ha	3-5 applications, alternately, from vegetative development to fruit enlargement
MELON, WATERMELON, COURGETTE, CUCUMBER, STRAWBERRY	20-25 kg/ha	3-5 applications, alternately, from vegetative development to fruit enlargement
TOMATO AND OTHER FRUIT VEGETABLE CROPS IN THE GREENHOUSE	3-5 kg/1,000 m^2	3-5 applications, alternately, from vegetative development to fruit enlargement
POME FRUITS AND STONE FRUITS	15-25 kg/ha	3-4 applications, every 15-20 days, from pre-flowering to fruit development
TABLE AND WINE GRAPES	15-25 kg/ha	3-4 applications, every 15-20 days, from pre-flowering to cluster filling

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

SALINITY TOLERANCE

From the Viridem® program, Ilsastimset.
Reduce all the negative effects of saline stress.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA. They help your plants do their job.

ILSASTIMSET restores vegetative responses under saline stress, helps the plant's vital processes and the structure of its root system, improving the absorption of nutrients and water.
Applied via the roots, ILSASTIMSET limits the adverse effects of excess salt in the soil and in the soil solution. Its formulation stimulates the development and production of plants, even in cases of high electrical conductivity. ILSASTIMSET also is a bioactive product that is part of the Viridem program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive.
And yours too.

Recommended for: Tomato, Pepper, Potato, Eggplant, Melon, Watermelon, Courgette, Cucumber, Strawberry, Tomato and other horticultural in greenhouse, Stone Fruits, Pome Fruits, Table and Wine Grape.

www.ilsagroup.com

ILSA
The green evolution

MULTIFUNCTIONAL PRODUCTS

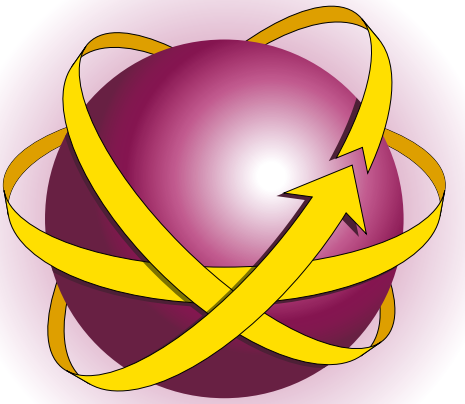
Well-being (to be well) is a state characterising every plant's life quality and involves all its aspects. The concept of well-being is not centred on the idea of absence of pathologies, but on the concept of overall good health (vegetative, physiological and reproductive) and a condition of harmony between the plant and the environment.

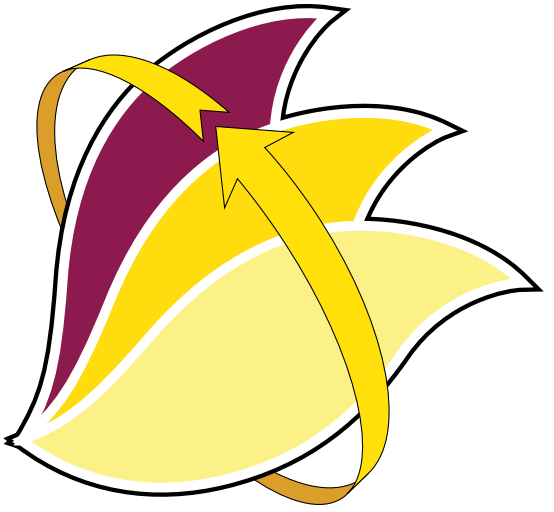
Healthy plants better and sooner respond to stress, give higher yields and quality and produce constantly every year.

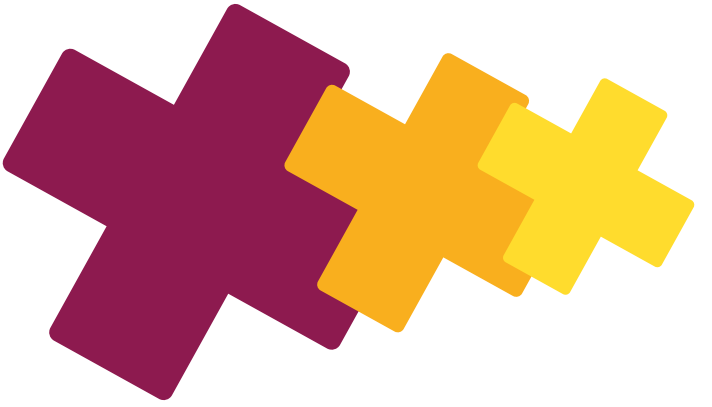
Specific substances with multiple actions positively stimulate plant metabolism, so promoting the all-round smooth progress of vegetative and productive stages, from the development of roots and plant biomass to good fruit formation and ripening.

The ILSA with a specific action and multifunctional products, based on triacontanol, free L-amino acids and other specific plant- and animal-derived substances, are able to regulate the plant's endogenous enzymatic systems through totally natural processes.

In one solution, they meet several needs in crops and provide continuous support throughout the plant's cycle, integrating seamlessly with fertilisation and other agronomic management practices and increasing their effectiveness.








ILSA
The green evolution

ILSA C-on

BIOSTIMULANT

1 kg

5 kg

Benefits

- Stimulates plant metabolism and well-being, even in stress conditions
- Allows increasing the yield and final quality of vine, olive tree and other fruits
- Helps to increase sugar content and oil yield

Characterising substances

PLANT-DERIVED TRIACONTANOL

PLANT-DERIVED AMINO ACIDS

PLANT EXTRACTS WITH A HORMONE-LIKE ACTION

	COMPONENTS	PLANT-DERIVED TRIACONTANOL	PLANT-DERIVED AMINO ACIDS	PLANT EXTRACTS WITH A HORMONE-LIKE ACTION
ACTIONS	STIMULATION OF PRIMARY AND SECONDARY METABOLISM	✓	✓	✓
	INCRASED YIELD AND FINAL QUALITY	✓	✓	✓

Chemical and physical features

LIQUID BROWN COLOUR	
pH	5.5 ± 0.5
DENSITY	1.14 ± 0.02 kg/dm³
CONDUCTIVITY E.C.	1.75 ± 0.25 dS/m

Composition

TOTAL AMINO ACIDS (% p/p)	5%
FREE AMINO ACIDS (% p/p)	1.5%
ORGANIC CARBON (C) (% p/p)	10%
PLANT-DERIVED TRIACONTANOL (mg/kg)	10.0

Contains in particular

ENZYMATIC HYDROLYSATE OF FABACEAE

Description

ILSAC-ON *is an innovative natural biostimulant, obtained by enzymatic hydrolysis of Fabaceae tissues. This product has a natural "hormone-like" action and is characterised by intense biological activity.*

The benefits of **ILSAC-ON** *are due to the action of free L-amino acids, long-chain alcohols (especially triacontanol) and other plant extracts with a biostimulant action that affect the activity of numerous enzymes involved in carbon metabolism and in nitrogen assimilation and absorption. The efficiency of use of water and nutrients absorbed is, therefore, increased.*

This fosters a nutritional balance that allows increasing plant well-being, limiting the negative effects of environmental, heat and water stresses, and in particular those from excess salinity. Plants, this way, can always express their full genetic potential.

When applied at times of greater vegetative activity, **ILSAC-ON** *affects several metabolic processes and allows obtaining various benefits for plants and the farmer. It stimulates biomass increase and the photosynthetic activity of crops, which results in a greater transfer of metabolites into fruits. Accordingly, it helps increase the sugar content in wine grapes, the yield in oil of olives and other oleaginous crops and, in general, increases the quality of final production. Thanks to the perfect balance between the vegetative and reproductive stages,* **ILSAC-ON** *allows a greater final yield, regulating the distribution of nutrients and aiding their absorption by the plant.*

Its wide action range and perfect miscibility with other commercial formulations allow **ILSAC-ON** *to be also applied at pesticide treatments, during the main phenological stages.*

*Directions for use**

CROP	DOSE	NOTES
MAIZE AND OTHER CEREALS	1.5-2 kg/ha	2 applications, at pesticide treatments, from stem elogation
OLIVE TREE	1.5-2.5 kg/ha	4 applications: early cell expansion, drupe formation, drupe enlargement and veraison/oil accumulation
TOMATO, PEPPER, AUBERGINE, MELON	1.5-2.5 kg/ha	4 applications, every 8-10 days, from 2 weeks after transplanting
POME FRUITS, STONE FRUITS, ACTINIDIA	2-2.5 kg/ha	4 applications, every 15 days, from sprout development
TABLE AND WINE GRAPES	1.5-2.5 kg/ha	4-5 applications, every 12-15 days, from pre-flowering
TURF-PLANTS, FLOWERS, POT-PLANTS, GARDEN NURSERIES	1 kg/1, 000-1,500 m^2	3-4 applications in vegetation growth phases

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSA STIM+

BIOSTIMULANT

POWERED BY VIRIDEM

1 kg

5 kg

Benefits

- Presents a rooting effect and allows overcoming transplanting stress
- Increases the yield and quality of vegetable crops
- Reduces nitrate accumulation in leaves and fruits

Characterising substances

- **PLANT-DERIVED TRIACONTANOL**
- **PLANT-DERIVED AMINO ACIDS**
- **SULPHURATED COMPOUNDS**
- **PLANT EXTRACTS**

ACTIONS	COMPONENTS	PLANT-DERIVED TRIACONTANOL	PLANT-DERIVED FREE AMINO ACIDS	SULPHURATED COMPOUNDS AND OTHER PLANT EXTRACTS
	PHOTOSYNTHESIS EFFICIENCY	✓	✓	✓
	STIMULATION OF CELL EXPANSION	✓		✓

Chemical and physical features

LIQUID BROWN COLOUR	
pH	5.5 ± 0.5
DENSITY	1.14 ± 0.02 kg/dm^3
CONDUCTIVITY E.C.	1.60 ± 0.25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	1%
of which ORGANIC NITROGEN (N) (% p/p)	1%
TOTAL AMINO ACIDS (% p/p)	6%
FREE AMINO ACIDS (%p/p)	1.5%
ORGANIC CARBON (C) (% p/p)	10%
TOTAL SULPHUR TRIOXIDE (SO_3) (mg/kg)	6,000
NATURAL TRIACONTANOL (mg/kg)	> 6.0

Contains in particular

- **ENZYMATIC HYDROLYSATE OF FABACEAE**

FOLIAR FERTILIZER

ORGANIC VEGETAL MATRIX

ORGANIC FARMING ILSA

Description

ILSASTIM+ *is a plant-derived biostimulant, obtained by enzymatic hydrolysis of Fabaceae tissues. This exclusive production process, combined with a specific hydrolysis level, allows having compounds whose action specifically adjusts to the needs of vegetable crops. Totally natural triacontanol, together with sulphurated compounds and plant-derived free L-amino acids, allows having multiple effects on tomatoes, peppers, potatoes, melons, strawberries, lettuce and all vegetable crops.*

When applied through roots at low doses starting from 8-10 days after seeding/transplanting (during normal fertigation applications), **ILSASTIM+** *strongly stimulates root and vegetative development of young plants.*

When applied through leaves, **ILSASTIM+** *stimulates biomass formation and increases the action of the enzymes that regulate the use of nitrogen absorbed (Nitrite reductase, GS and Gogat) so reducing nitrate excess in plant tissues, which is fundamental for leaf vegetable crops and fresh cut vegetables.*

Its positive action on photosynthesis, combined with the intake of amino acids and active molecules allows **ILSASTIM+** *to also improve the quality of final production, especially in fruit vegetable crops (strawberry and melon), and increase resistance to climate stress, particularly in the greenhouse.*

*Directions for use**

CROP	DOSE	NOTES
CAULIFLOWER	1.5-2 kg/ha	4-5 applications every 15 days, from 2 weeks after seeding/ transplanting
OTHER CABBAGES	1.5-2 kg/ha	4-5 applications every 7-8 days, from 1 week after transplanting
ARTICHOKE, LETTUCE, SPINACH AND OTHER LEAFY VEGETABLES	2.5-3 kg/ha	4-5 applications every 7-8 days, from 1 week after transplanting
ORNAMENTAL AND FLORAL CROPS, ORNAMENTAL AND FOREST NURSERIES	1 kg/ 1,500 m^2	3-4 applications in the stages of vegetative and radical development
BEAN, FRENCH BEAN AND OTHER LEGUMES	1.5-2 kg/ha	4-5 applications every 15 days, from 2 weeks after seeding/ transplanting
MELON, WATERMELON, CUCUMBER, COURGETTE, STRAWBERRY	2-2.5 kg/ha	4-5 applications every 15 days, from 2 weeks after transplanting
POTATO	1.5-2 kg/ha	4-5 applications every 15 days, from 2 weeks after seeding/ transplanting
TOMATO, PEPPER, AUBERGINE	2-2.5 kg/ha	4-5 applications every 15 days, from 2 weeks after transplanting
TOMATO, PEPPER, MELON, COURGETTE AND OTHER FRUIT VEGETABLE CROPS IN THE GREENHOUSE	0.3-0.4 kg/ 1,000 m^2	4-5 applications every 15 days, from 2 weeks after transplanting
PROFESSIONAL TURF	1 kg/1,500 m^2	3-4 applications in the stages of vegetative and radical development

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA The green evolution

ILSA VIS+

BIOSTIMULANT

POWERED BY VIRIDEM

1 kg

5 kg

Benefits

- Increases the yield and quality of fruits
- Increases consistency and reduces cracking in fruits
- Standardises ripening and yields over the years

Characterising substances

- PLANT-DERIVED TRIACONTANOL
- GLUTAMIC ACID
- ALANINE
- GLYCINE
- PROLINE
- VALINE AND LEUCINE
- PLANT EXTRACTS

ACTIONS	COMPONENTS	PLANT-DERIVED TRIACONTANOL	SPECIFIC FREE L-AMINO ACIDS	PLANT EXTRACTS
	FRUIT YIELD AND QUALITY	✓	✓	✓
	UNIFORM SIZE AND RIPENING	✓	✓	✓

Chemical and physical features

LIQUID BROWN COLOUR	
pH	5.5 ± 0.5
DENSITY	1.14 ± 0.02 kg/dm³
CONDUCTIVITY E.C.	1.60 ± 0.25 dS/m

Composition

TOTAL AMINO ACIDS (% p/p)	7.5%
FREE AMINO ACIDS (% p/p)	2.5%
NATURAL TRIACONTANOL (mg/kg)	>6.0

FOLIAR FERTILIZER

VEGETAL ORGANIC MATRIX

Contains in particular

ENZYMATIC HYDROLYSATE OF FABACEAE

ORGANIC FARMING ILSA

Description

ILSAVIS+ *is a plant-derived biostimulant, obtained by enzymatic hydrolysis of alfalfa leaves. The high hydrolysis level used for its preparation allows providing the product with a high quantity of totally natural triacontanol and free L-amino acids specifically designed for the stages of fruit formation and ripening (glutamic acid, alanine, glycine, proline, valine and leucine). Also, the presence of other plant's extracts, such as flavonoid derivatives, allows increasing the organoleptic quality of fruits and protecting them from oxidation or rot.*

ILSAVIS+ *allows for maximum nutritional balance in order to maturate a high number of fruits and prepare the new buds for the next year. The active components, as a fact, also stimulate photosynthesis and nutrient absorption efficiency by leaves and fruits.*

The application of **ILSAVIS+***, starting from fruit set, allows fruit tree crops to standardise size and ripening and increase fruit quality, thus also making harvest operations easier.*

ILSAVIS+ *is the biostimulant that, in addition to normal applications with foliar fertilisers, ensures maximum performance for stone fruits, pome fruits, citrus, table grapes and other fruit crops.*

*Directions for use**

CROP	DOSE	NOTES
CITRUS	2.5-3 kg/ha	4 applications, every 10-15 days, from post-fruit set
APPLE TREE, PEAR TREE, ACTINIDIA	2-2.5 kg/ha	4 applications, every 10-15 days, from post-fruit set
PEACH TREE, APRICOT TREE, CHERRY TREE, PLUM TREE	2-2.5 kg/ha	4 applications, every 10-12 days, from post-fruit set
BLUEBERRY, RASPBERRY AND OTHER SMALL FRUITS	1.5-2 kg/ha	3-4 applications, every 10-12 days, from post-fruit set
TABLE GRAPES	2.5-3 kg/ha	4-5 applications, every 10-15 days, from post-fruit set

**The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA The green evolution

ILSA POLICOS

RADICAL BIOSTIMULANT

5 kg
20 kg
250 kg
1200 kg

Benefits

- Stimulates microbial activity in the rizosphere
- Stimulates the absorption of nutritive elements
- Increases resistance to environmental stress (temperature fluctuations, excessive salinity, water-nutritional imbalances)

Characterising substances

- **PLANT-DERIVED NATURAL TRIACONTANOL**
- **BETAINES**
- **POLYSACCHARIDES**
- **POTASSIUM**

	COMPONENTS	PLANT-DERIVED TRIACONTANOL	POTASSIUM AND POLYSACCHARIDES	BETAINES
ACTIONS	STIMULATION OF PHYSIOLOGICAL PROCESSES	✓	✓	
	TOLERANCE TO STRESS	✓	✓	✓

Chemical and physical features

LIQUID BROWN COLOUR	
pH 7.3 ± 0.5	
DENSITY 1.29 ± 0.02 kg/dm³	
CONDUCTIVITY E.C. 3.4 ± 0.25 dS/m	

Composition

ORGANIC NITROGEN (N) (% p/p)	1%
ORGANIC CARBON (C) (% p/p)	20%
POTASSIUM OXIDE (K_2O) (% p/p)	6%
BETAINES	1%
NATURAL TRIACONTANOL (mg/kg)	10,0

Contains in particular

ALFALFA FLUID EXTRACT, SEAWEED AND MOLASSES

ORGANIC FARMING ILSA

FERTIGATION

VEGETAL ORGANIC MATRIX

Description

ILSAPOLICOS *is a radical biostimulant entirely from plant origins, which when applied during fertigation guarantee yields and end quality. When regularly mixed with other fertilisers in the fertigation solution, it stimulates plants' natural metabolisms from the first phase to the development of the fruit. Therefore, it can be used during all phenological phases.* **ILSAPOLICOS** *is a radical biostimulant which acts on the physiology of the plant, so can be applied, universally, to all cultivations.*

ILSAPOLICOS*' action is evidently noticeable in conditions of abiotic stress, such as excessive salinity, temperature fluctuations and other environmental causes which may limit the development of roots, vegetation or fruit production. This can be limited or avoided completely by using* **ILSAPOLICOS***. The presence of natural triacontanol, polysaccharides, betaine and potassium, all of plant origin, contribute to positively stimulating plants' essential physiological processes, both by increasing tolerance of abiotic stress, as well as activating enzymes which regulated the rooting phases, cell multiplication, flowering, setting and development of fruit.*

ILSAPOLICOS *encourages absorption of nutritious elements and therefore improves nutrition to the plant, thanks to a "complexant-carrier" action of macro, meso and micro elements.*

Fundamentally, **ILSAPOLICOS** *promotes root development, encourages stem and bud growth, activates photosynthesis, increases the availability of nutritive elements, and makes the plant more tolerant of poor pedoclimatic conditions. All this means improved final production both in terms of quantity and quality.*

The natural ingredients of **ILSAPOLICOS***, furthermore, means that it is suitable for use in organic agriculture.*

*Directions for use**

CROP	DOSE	NOTES
TOMATO, PEPPER, AUBERGINE	5-10 kg/ha	Starting from the first applications of fertigation, until fruit grows
STRAWBERRY, MELON, COURGETTE, CUCUMBER	5-10 kg/ha	Starting from the first applications of fertigation, until fruit grows
LATTUCE, SPINACH AND LEAFY VEGETABLES	5-10 kg/ha	Starting from the first applications of fertigation, 3-4 uses
CHERRY TREE, OLIVE TREE AND STONE FRUIT	5-10 kg/ha	Starting from the first applications of fertigation, until fruit grows
APPLE TREE, PEAR TREE, ACTINIDIA	5-10 kg/ha	Starting from the first applications of fertigation, until fruit grows
BLUEBERRY, RASPBERRY, SMALL FRUITS	5-10 kg/ha	Starting from the first applications of fertigation, until fruit grows
TABLE AND WINE GRAPES	5-10 kg/ha	Starting from the first applications of fertigation, until fruit grows
NURSERY FLOWER AND ORNAMENTAL CROPS	250-300 g/ 100 L water	Starting from the first applications of fertigation, 3-4 uses during vegetation development

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

ILSAMIN N90

BIOSTIMULANT

1 kg

5 kg

20 kg

250 kg

Benefits

- Allows overcoming stressful situations and balances nutritional activity
- Increases productions and their overall quality
- Improves plant well-being
- Allows recovering damaged plant tissues

Chemical and physical features

LIQUID COLOUR AMBER YELLOW	
pH 5.6 ± 0.5	
DENSITY 1.22 ± 0.02 kg/dm^3	
CONDUCTIVITY E.C. 1.0 ± 0.25 dS/m	

Composition

TOTAL NITROGEN (N) (% p/p)	8.9%
SOLUBLE ORGANIC NITROGEN (N) (% p/p)	8.9%
ORGANIC CARBON (C) (% p/p)	25%
FREE AMINO ACIDS > 10% FOR THE MOST PART OF THE L-TYPE	

GELAMIN®
fluid gelatine for agricultural use

Description

ILSAMIN N90 *is a foliar biostimulant based on amino acids and peptides whose strong action balances plant activities.*

The high percentage of free amino acids allows stimulating plant metabolism, enabling rapid and efficient nutrition in all difficult vegetative situations.

The regular use of **ILSAMIN N90** *helps plants to always maintain all biochemical pathways fully active both under normal conditions and at critical times caused by external stress.*

When used through leaves on vegetable and tree crops, **ILSAMIN N90** *allows improving productions both quantitatively and qualitatively.*

It is miscible with other foliar products and improves their overall performance.

*Directions for use**

CROP	DOSE	NOTES
STONE FRUITS	2-4 kg/ha	every 15 days from pre flowering to veraison
STRAWBERRY	0.5-1 kg/ha	4 applications every 10-15 days in the most intense growth stages
DURUM AND SOFT WHEAT, RICE	3-5 kg/ha	tillering-stem elongation
NEW TREES PLANTATIONS, LAWNS, FLORAL AND ORNAMENTAL CROPS, ORNAMENTAL AND FOREST NURSERIES	1 kg/1,000-1,500 m^2	1-2 applications to stimulate tillering
OLIVE TREE	2-3 kg/ha	every 15 days from early growth stages to flowering
VEGETABLES	1-2 kg/ha	4 applications every 10-15 days in the most intense growth stages
POTATO	1-2 kg/ha	every 15 days during the critical phases of the productive cycle
POME FRUITS	2-4 kg/ha	every 15 days from pre flowering to veraison
TABLE AND WINE GRAPES	2-3 kg/ha	every 15 days from the early vegetative stages to fruit set
LAWNS, FLORAL AND ORNAMENTAL CROPS, NURSERIES	1 kg/ 1,000-1,500 m^2	1-2 applications to stimulate tillering

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA
The green evolution

SPLINTER NEW

CO-FORMULANT

1 kg
5 kg
20 kg
250 kg
1200 kg

Benefits

- Increases the surface washed by sprayed droplets
- Slows the drying of fertilised leaves and promotes their rehydration
- Optimises the duration of the action of mixed active substances
- Promotes maximum effectiveness of mixed substances even in infavourable environmental situations
- Performs a disruptive and detergent action on honeydew

Chemical and physical features

LIQUID GREEN COLOUR
pH 5,4 ± 0,5
DENSITY 1,16 ± 0,02 kg/dm^3
CONDUCTIVITY E.C. 0,63 ± 0,25 dS/m

Composition

TOTAL NITROGEN (N) (% p/p)	7%
of which SOLUBLE NITROGEN (N) (% p/p)	7%
ORGANIC CARBON (C) (% p/p)	20%
HYDROXYPROLINE	0.75%
TOTAL AMINO ACIDS	>45%

FOLIAR FERTILIZER

GELAMIN®
fluid gelatine for agricultural use

Description

SPLINTER NEW *is an organic fertilser for foliar application with a strong synergising and humectant function. It increases the surface wet by sprayed droplets, slows its desiccation and promotes its rehydration.*

It optimises the reaction time of mixed active substances and allows their maximum efficiency even in infavourable situations.

SPLINTER NEW *makes every foliar application more efficient and should be mixed with other products. It has a specific disruptive action on sugar substances produced by psyllids and aphids and an effective detergent action on honeydews.*

*Directions for use**

CROP	DOSE	NOTES
STONE FRUITS, POME FRUITS, ACTINIDIA	3-5 kg/ha	Foliar treatments
WHEAT, RICE AND OTHER CEREALES	1.5-2 kg/ha	In the process of weeding
HAZELNUT, WALNUT, BLUEBERR AND SMALL FRUITS	3-5 kg/ha	Foliar treatments
NEW TREES PLANTATION, LAWNS, ORNAMENTAL AND FLORAL CROPS, ORNAMENTAL AND FOREST NURSERIES	1 kg/5,000 m^2	Foliar treatments
FRUITS, LEAFY VEGETABLES AND OTHER VEGETABLES	2-3 kg/ha	Foliar treatments
TABLE AND WINE GRAPE, OLIVE TREE	2-3 kg/ha	Foliar treatments

** The doses shown should be considered as merely indicative and may vary according to pedoclimatic conditions and average yields expected. For more product information (technical data sheet, safety data sheet, dossier, etc.) and further details on doses and how to use on crops, please refer to the website www.ilsagroup.com*

ILSA The green evolution

CONVERSION TABLE KG/LT

Product	Density kg/l at 20°C	kg	liters	kg	liters	kg	liters
ILSAC-ON	1.15	1	0.870	1.5	1.304	2	1.739
ILSADEEPDOWN	1.19	1	0.840	1.5	1.261	2	1.681
ILSADURADA	1.14	1	0.877	1.5	1.316	2	1.754
ILSAFORMA	1.17	1	0.855	1.5	1.282	2	1.709
ILSAGIRMA	1.17	1	0.855	1.5	1.282	2	1.709
ILSAGRADER	1.28	1	0.781	1.5	1.172	2	1.563
ILSAINTEGER	1.40	1	0.714	1.5	1.071	2	1.429
ILSAKOLORADO	1.31	1	0.763	1.5	1.145	2	1.527
ILSALEVA	1.15	1	0.870	1.5	1.304	2	1.739
ILSAMIN N90	1.22	1	0.820	1.5	1.230	2	1.639
ILSANOBREAK	1.29	1	0.775	1.5	1.163	2	1.550
ILSAPOLICOS	1.28	1	0.781	1.5	1.172	2	1.563
ILSARODDER	1.16	1	0.862	1.5	1.293	2	1.724
ILSASHAPE	1.18	1	0.847	1.5	1.271	2	1.695
ILSASTIM +	1.15	1	0.870	1.5	1.304	2	1.739
ILSASTIMSET	1.22	1	0.820	1.5	1.230	2	1.639
ILSATERMIKO	1.22	1	0.820	1.5	1.230	2	1.639
ILSAVEGETUS	1.14	1	0.877	1.5	1.316	2	1.754
ILSAVIS +	1.16	1	0.862	1.5	1.293	2	1.724
ILSAVIVIDA	1.18	1	0.847	1.5	1.271	2	1.695
SPLINTER NEW	1.16	1	0.862	1.5	1.293	2	1.724

kg	liters	kg	liters	kg	liters	kg	liters	kg	liters
2.5	2.174	3	2.609	5	4.348	10	8.696	20	17.391
2.5	2.101	3	2.521	5	4.202	10	8.403	20	16.807
2.5	2.193	3	2.632	5	4.386	10	8.772	20	17.544
2.5	2.137	3	2.564	5	4.274	10	8.547	20	17.094
2.5	2.137	3	2.564	5	4.274	10	8.547	20	17.094
2.5	1.953	3	2.344	5	3.906	10	7.813	20	15.625
2.5	1.786	3	2.143	5	3.571	10	7.143	20	14.286
2.5	1.908	3	2.290	5	3.817	10	7.634	20	15.267
2.5	2.174	3	2.609	5	4.348	10	8.696	20	17.391
2.5	2.049	3	2.459	5	4.098	10	8.197	20	16.393
2.5	1.938	3	2.326	5	3.876	10	7.752	20	15.504
2.5	1.953	3	2.344	5	3.906	10	7.813	20	15.625
2.5	2.155	3	2.586	5	4.310	10	8.621	20	17.241
2.5	2.119	3	2.542	5	4.237	10	8.475	20	16.949
2.5	2.174	3	2.609	5	4.348	10	8.696	20	17.391
2.5	2.049	3	2.459	5	4.098	10	8.197	20	16.393
2.5	2.049	3	2.459	5	4.098	10	8.197	20	16.393
2.5	2.193	3	2.632	5	4.386	10	8.772	20	17.544
2.5	2.155	3	2.586	5	4.310	10	8.621	20	17.241
2.5	2.119	3	2.542	5	4.237	10	8.475	20	16.949
2.5	2.155	3	2.586	5	4.310	10	8.621	20	17.241

From the Viridem® program, IlsaC-on.
More yield in oil.

VIRIDEM®

vegetal extracts for agricultural use

Viridem® Biostimulant by ILSA.
They help your plants do their job.

ILSAC-ON is a natural biostimulator obtained by enzymatic hydrolysis of Fabaceae tissues which increases the absorption efficiency of water and nutrients. It promotes the nutritional balance which affects the plants' wellbeing by limiting the negative effects of environmental, thermal, water stress and in particular those caused by excess salinity. Plants can thus express all their potential: results can be seen, for example, in the olive oil yield and in the increase of sugar contents in vines for wine-making. ILSAC-ON also is a bioactive product that is part of the Viridem® program, the innovative generation of products of plant origin, effective and sustainable, developed by ILSA.

May their work be productive.
And yours too.

Recommended for: Olive Tree, Table and Wine Grape, Stone Fruits, Pome Fruits, Actinidia, Solanacee, Corn and other Cereals.

www.theintrepidi.it

www.ilsagroup.com

ILSA
The green evolution

TRIACON is a line of products designed for the biostimulants/fertilizers industry. Thanks to the combination of its unique FCEH® (Fully Controlled Enzymatic Hydrolysis) and SFE® (Supercritical Fluid Extraction) technologies, ILSA offers natural plant-derived triacontanol, which is totally OGM-free and completely water-soluble. TRIACON can be used to increase the potential of your biostimulants and fertilizers, improving their efficacy on the metabolism of the plants and, at the same time, giving your own products a distinctive edge.

www.ilsagroup.com

ILSA
The green evolution

A PATH FOR DRIVEN BY PASSION

Our history

1956

THE FIRM IS BORN IN 1956

Its founder's intuition was that of seeing in hide collagen a resource to be used to obtain nitrogen organic fertilisers. It is one of the longest-lived firms in the industry and its long history proves that ILSA has always been able to stay in the market with its products and meet through innovation the needs of an increasingly demanding and specialised agriculture.

1972

IN 1972 IT BECOMES THE MOST IMPORTANT ITALIAN MAKER OF ORGANIC FERTILISERS

Thanks to the acquisition of Ico S.p.A. and Valcoa S.p.A., it consolidates its leadership among the Italian makers of organic fertilsiers. In this same period it markets the first product with its own trademark, FERTORGANICO, still in production today.

1976

IN 1976 THE STRATEGIC CHOICE OF GIVING GREAT IMPORTANCE TO RESEARCH

The first partnership is forged with the Faculty of Agronomics of the Università Cattolica del Sacro Cuore di Piacenza, which lays the groundwork for the entire subsequent evolution of the ILSA research. Over the time new partnerships have been forged with a lot of universities and research institutes in Italy and abroad, promoting the constant improvement of production processes and the creation of new highly effective products.

2014

IN 2014 ILSA RENEWS ITS TRADEMARK AND PRESENTS THE NEW PAY-OFF «THE GREEN EVOLUTION»

The ultimate frontier of the ILSA research generates a renewed corporate vision that is increasingly green and sustainable. With the launch of the new trademark, the new philosophy «the green evolution» is introduced: a prelude to the output of a new revolutionary range of products projecting the company into the future.

2016

IN 2016 THE SFE (SUPERCRITICAL FLUID EXTRACTION) EXTRACTION PLANT IS ACTIVATED

It is a clean process that allows extracting bioactive substances without using organic solvents and involves no heat stress. Because of its very low environmental impact, the FDA (Food and Drug Administration - U.S.) has conferred the GRAS (Generally Recognized as Safe) attribute to it. The combination between this new technology and the enzymatic hydrolysis technology has allowed the company to launch the VIRIDEM® programme, a guide to make plant-derived natural biostimulants that are efficient and can act on plant metabolism. A programme that can be summed up in a clear philosophy: «From plants for plants».

2017

IN 2017 ILSA BECAME A "LARGE COMPANY" THANKS TO THE AGREEMENT WITH BIOLCHIM SPA WHICH ACQUIRED 60% OF THE SHARE CAPITAL

The most important industrial and commercial Group at a world level in the bio-stimulant sector was established. The Group also includes the Italian company - CIFO, the Canadian company - West Coast Marine Bio Processing, producer of seaweed extracts and the Hungarian company - Matècsa, producer of peats and derivatives.

GROWTH AND COMPETENCE

1979

IN THE 1979 THE MOVE TO ARZIGNANO (VICENZA)

Being closer to the raw material from which AGROGEL® and GELAMIN®, the hydrolysed gelatins - one solid and the other fluid - for agricultural use, are obtained, means greater production capacity, greater chance of selecting the raw material itself, more efficient logistics and lesser environmental impact from transpor.

1993

IN 1993 THE ENZYMATIC HYDROLYSIS PLANT IS ACTIVATED

The plant for the production of liquid fertilisers marks in fact the company's entry in this market and in the biotechnology sector. It confirms the company's vocation to innovation, quality and care for the environment. This plant gives birth to GELAMIN®, the fluid gelatin for agricultural use from enzymatic hydrolysis, and the plant-derived products for plant biostimulation from the VIRIDEM® programme.

2001

IN 2001 THE ILSA MEDITERRANEO S.P.A. PLANT IS INAUGURATED

The production plant located in Molfetta, in the province of Bari, is the path chosen by the company to better serve the whole area of Southern Italy and meet the growing demand for its products coming from the countries of the Mediterranean basin.

2003

SINCE 2003 QUALITY CERTIFICATIONS HAVE CONFIRMED WITH FACTS OUR OPERATIONAL PHILOSOPHY

The corporate development has always gone hand in hand with a strong sense of social responsibility; environmental protection, safety at work, product safety and transparency to the outside have always been considered as corporate priorities.

2005

IN 2005 THE C.R.A. (CORPORATE RESEARCH CENTRE) IS INAUGURATED

35+ years of close partnerships with the most important research institutes result in the creation of the C.R.A., Corporate Research Centre, provided with growth chambers and the most modern equipment, which confirm the company's attitude towards product and process innovation.

2007

THE PUBLICATION IN THE OFFICIAL GAZETTE OF THE HYDROLYSED GELATIN FOR AGRICULTURAL USE

Thanks to AGROGEL®, 16 March 2007 will always remain an important date in the history of ILSA: the hydrolysed gelatin for agricultural use is introduced in the law ruling the use of fertilisers in Italy.

2009

IN 2009 THE ILSA BRASIL PLANT IS ACTIVATED

In the Rio Grande Do Sul state, in an area with a strong agricultural vocation, the new plant of the subsidiary ILSA BRASIL has been started to meet the growing demand for products based on AGROGEL® and GELAMIN®.

2010

IN 2010 IT LAUNCHES THE FIRST PLANT-DERIVED BIOSTIMULANTS

After seven years of research, following legal recognition and introduction of the Fabaceae hydrolysate in the category of products with a specific action on plants, the company presents to the market its first plant-derived biostimulant, ILSAC-ON, quickly followed by ILSASTIM+ and ILSAVIS+.

ILSA
The green evolution

ILSA PRODUCTION PLANTS

ILSA BRASIL
PORTAO
(Porto Alegre)

ILSA Brasil

ILSA

ILSA
ARZIGNANO
(Vicenza)

ILSA MEDITERRANEO
MOLFETTA (Bari)

ILSA MEDITERRANEO

ICON EXPLANATION

ORGANIC FARMING
The "Agricoltura Biologica ILSA" logo certifies that the fertiliser can be used in organic farming.

FOLIAR APPLICATION
Foliar Fertiliser: it highlights the products to be administered through leaves and characterised by safety of use, low molecular weight and the presence of mainly L-amino acids.

FERTIGATION
Fertigation: it highlights fertigation products characterised by purity, presence of mainly L-amino acids and easiness of use.

PLANT MATRIX
The products containing plant-derived matrices obtained, by hydrolysis and/or extraction, from yeasts, sugars, algae, fabaceae, etc.

VIRIDEM
The "Powered by VIRIDEM®" trademark certifies that the product has been developed by following the VIRIDEM® programme aimed at developing plant-based natural biostimulants.

The mark indicate the study, realized by ILSA, of the environmental footprint organization, OEF (Organization Enviromental Footprint) and product, PEF (Product Environmental Footprint) .

COMMUNICATION

Transferring the knowledge heritage accumulated in many years of work is one of the social responsibilities of ILSA.

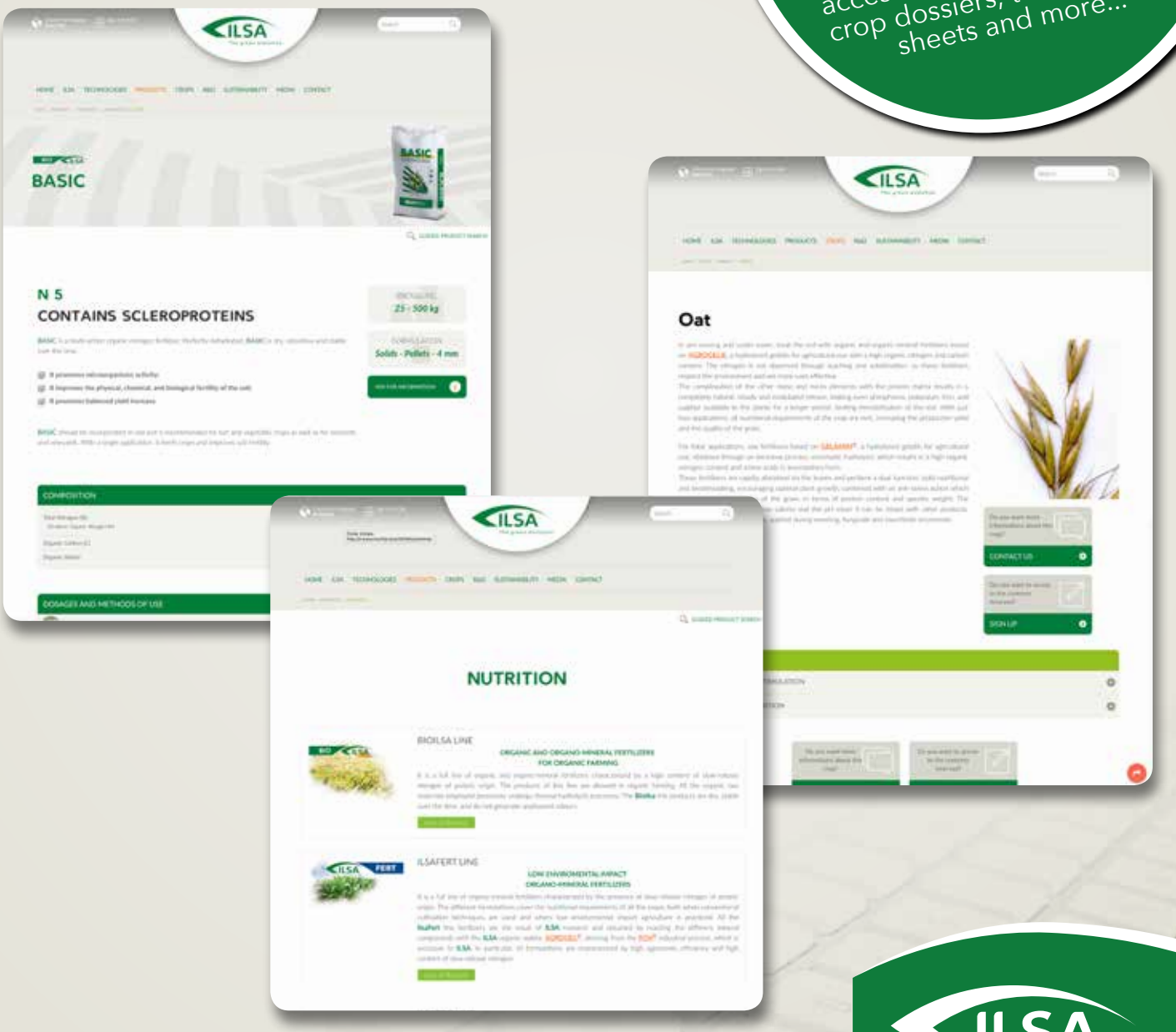
Services towards resellers and farmers

Agriculture is a dynamic and constantly evolving sector that requires specialised skills, also with regard to the introduction of new and increasingly sustainable production techniques.
Making those who operate in the agricultural sector aware of their role, not only in economic terms but also in social terms and regarding health and environmental protection, is one of the priorities that ILSA pursues by organising seminars, conferences and training courses intended for traders, technicians in the industry and farmers.

LSA employs an in-house technical structure that is focused on daily spreading of, in addition to product value, agronomic, scientific and technological knowledge, with the aim of helping customers to identify the best technical solutions.
ILSA makes demonstration fields and in-field experiments, in Italy and abroad, collaborating with the R&D area. It takes care of collecting, drafting and spreading product and use information while meeting technicians, opinion leaders, resellers and farms to promote a more efficient use of its products.

BECOME A MEMBER
on
www.ilsagroup.com!

You will have exclusive access to documents such as crop dossiers, technical data sheets and more...



ILSA
The green evolution

COMMUNICATION TOOLS

To better support its customers, ILSA has developed a series of communication tools:

Websites

www.ilsagroup.com
www.agrogel.it
www.gelamin.it

Social

Linkedin
Twitter
Youtube

Informative newsletters

Technical Good to know

Dossier

In-depth dossiers on crops and products

Report

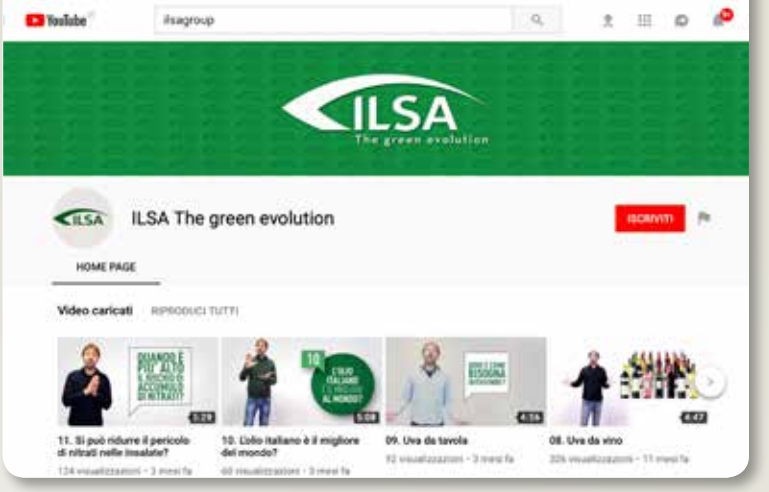
Results of in-field activity

Product information material

(technical data sheets, safety data sheets, fertilisation plans and application instructions)

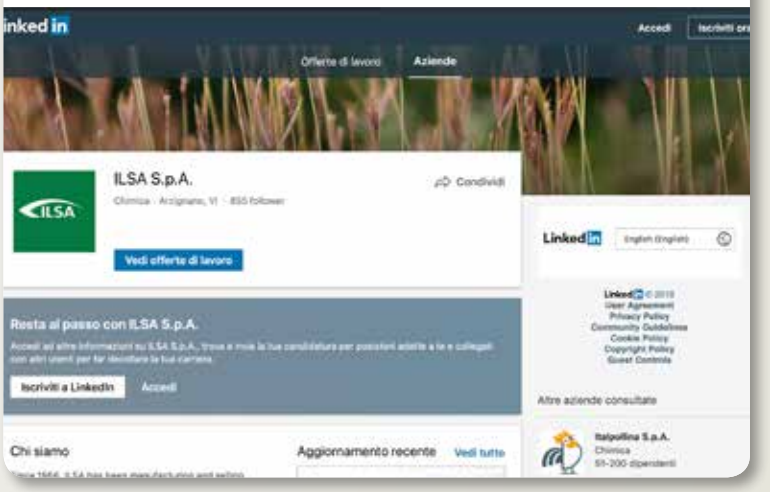
www.ilsagroup.com

Youtube Channel



www.agrogel.it

Linkedin



www.gelamin.it

Twitter

ILSA'S NEWSLETTERS

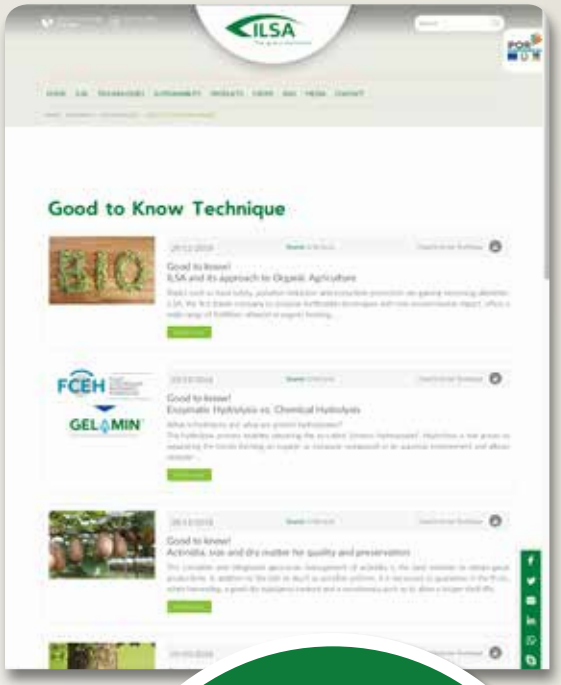
GOOD TO KNOW

The appointment with the information

"Good to know Technique" is our periodical newsletter of information on plant nutrition, with previews, updates and technical training. "Good to know Commercial" is Ilsa's periodical newsletter of commercial information. The recipients of these two free newsletters are those interested in the dynamics of general business and the agriculture world, that is, both Ilsa's friends and people who, out of curiousity or interest, want to find out the business core of a company that in the past 50 years has been working to improve the health and yield of crops. Our wish is to give technical and commercial information (also very in-depth) in a gentle way through easy and quick reading.

We think that science has been key in our history and believe that spreading and sharing knowledge can be the only way to continue growing. Our wish is that the "Good to know" newsletters can generate a fruitful exchange of views, having in mind an agriculture capable of overcoming business and environmental sustainability challenges as well as meeting the needs of this and future generations.

You only need to register to www.ilsagroup.com to get them.



REGISTER on **www.ilsagroup.com!**

You will receive the Good to Know more suitable for you!

Editorials

Good to know!
Enzymatic Hydrolysis vs. Chemical Hydrolysis

What is hydrolysis and what are protein hydrolysates?

How are protein hydrolysates obtained?

Editorials

Good to know!
Actinidia, size and dry matter for quality and preservation

Editorials

Good to know!
Natural bio stimulants which respond to the challenges of agriculture

VIRIDEM®
estratti vegetali per uso agricolo

Editorials

Good to know!
Unique matrixes and technologies for unique bio-stimulants

VIRIDEM®

vegetal extracts for agricultural use

ILSA S.p.A.

Via Quinta Strada, 28
36071 - Arzignano (VI) Italia
Sede legale: Via Roveggia, 31 - 37136 - Verona

Tel. +39 0444 452020
Fax +39 0444 456864

www.ilsagroup.com

ILSA
The green evolution

REV 0 DEL 07/02/2019