



PRODUCTS CATALOGUE

For a safe, sustainable
and highly productive Agriculture

INDEX

1. Introduction	3
a. Company	3
b. History	4
c. R+D+i	5
d. WorldWide	6
2. Products	
a. Immunological Activators	7
b. Physiological Inducers	15
i. Amino acids	17
ii. Inducers	20
1. Root development	20
2. Flowering & setting	22
3. Ripening	23
4. Seaweed extracts	27
5. Phosphites	28
6. Self-defense	30
c. Nutrients	32
i. Soil improvers	34
ii. Deficiency correctors	38
iii. Foliar	47
iv. Specific	55
3. Logistics	59

Francisco R. Artal, since 1895

About Us

Artal Smart Agriculture is the Spanish company with the most experience in the sector, being also the first to manufacture liquid fertilizers.

Founded in 1895 and to this day in the hands of the Artal family, we are dedicated to the development, formulation and marketing of products for a safe, sustainable and highly productive agriculture. We are currently present in more than 30 countries.

Artal is credibility, innovation and evolution.

What makes us different

Our new Artal technology "Residue 0.0": 0 residues - 0 days preharvest interval

We are the first company in the world to develop a range of **Immunological Activators Priming** effect: **PRIMTAL "Stress-free technology"**

- Compatible with biological control
- Applicable by irrigation



Our founder, Francisco R. Artal del Tormo, installed the first warehouse in the Valencia Grao and later his organic fertilizers factory on the outskirts of the city. Following in his footsteps, his son Francisco Artal Villanueva expanded and modernized the factory, also producing compounds and organo-mineral fertilizers.



Francisco Artal del Tormo
FOUNDER



Francisco Artal Villanueva
2nd GENERATION



Francisco Artal Such
3rd GENERATION

In 1986, the founder's grandson, Francisco R. Artal Such, built the current facilities in the Fuente del Jarro Industrial Estate in Paterna (Valencia), where the fourth generation of the Artal family continues the work begun by their great-grandfather, innovating and evolving in the face of the current needs of the sector and developing the international expansion of Artal products.



Francisco y Juan Artal Huerta
4th GENERATION

R+D+i

Research + Development + innovation

We believe the best way to research, develop and innovate is in collaboration with the different Universities, research centres and with our clients, in addition to conducting our own tests, as shown by the agreements made with the following Universities:

- Polytechnic University of Valencia (Spain)
- Polytechnic University of Cartagena (Spain)
- University of Zaragoza (Spain)
- University of Córdoba (Spain)
- Université d'Agadir (Morocco)
- University Jaume I of Castellón (Spain)

Awarded THANIT prizes in the Region of Murcia (Spain) with special mention for technological development in agricultural production.

Technical Excellence Award at the Four Oaks fair, the UK's leading horticultural sector competition, for PRIMTAL "Stress-free technology".

2020 Biotechnology Award for the agricultural sector, awarded by the newspaper La Razón in its IV edition of the Technology and Innovation awards.

2021 Award for Biotech innovation for agriculture to Primtal range.



Artal Worldwide

Our company, in the world

Austria

Brazil

Czech Republic

Chile

China

Croatia

Dominican Rep.

Ecuador

Egypt

France

Ghana

Greece

Guatemala

Holland

Iran

Iraq

Israel

Italy

Jordan

Lebanon

Libya

Mexico

Morocco

Nicaragua

Nigeria

Pakistan

Peru

Poland

Portugal

Romania

Russia

Serbia

South Korea

Spain

Syria

Thailand

Turkey

United Kingdom

Uruguay

Vietnam

Yemen





*Immunological
activators*

Primtal®

STRESS-FREE TECHNOLOGY

First Immunological Activators "Priming Effect"



IT'S NOT MAGIC, IT'S SCIENCE



OF COURSE IT WORKS



Products developed by ARTAL
and the University of Castellón (SPAIN)



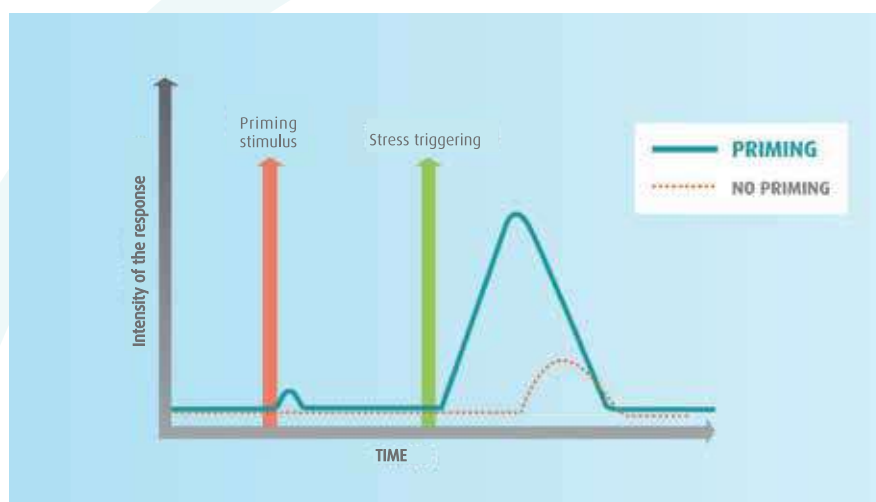


PRIMTAL stress free technology

New and innovative range of products developed by “**ARTAL Smart Agriculture since 1895**” together with “University of Castellón (Spain) – Metabolic Integration and Cell Signalling Group – Plant Physiology Area”.

PRIMTAL “Stress-free technology” is the first range of products based on “**priming**”, an activating mechanism of the immune system of plants that does not generate stress.

This technology emerges as a solution against the elimination of elements harmful to the environment, but essential for the survival of the agricultural production system. Thanks to **PRIMTAL** and its “**Priming Effect**”, the immune system of plants reacts faster and with greater intensity in specific situations of stress, reducing their damage.



Reaction of the immune system (Priming vs Non-Priming)

PRIMTAL products content specific metabolites, part of the secondary metabolism of plants, which increase the capacity of their immune system to respond to certain stress situations. They are compatible with the useful fauna and various microorganisms used for the control of pests and diseases, as well as with conventional treatments.

PRIMTAL stress free technology

- Activates multiple defense routes at the same time
- Hinders the appearance of resistances
- Does not generate stress
- Compatible with biological control
- Organic farming certified
- Residue 0.0: 0 residues - 0 days of pre-harvest interval

PRIMTAL IS NOT MAGIC, IT'S SCIENCE

PRIMTAL WF

Immunological activator - "Stress-free technology"

GUARANTEED CONTENTS:	% w/w	% w/v
Alginate acid:	2,50	2,68
Mannitol:	0,60	0,64
Liquid Seaweed extract – Ascophyllum Nodosum		



Control ECOCERT SA F-32600

Suitable product to use in Organic Farming according to (EC) regulations n° 2018/848 and 2021/1165 and NOP



pH= 10± 1
1 l = 1,07 kg.



Properties

PRIMTAL WF is one of the products of the new and innovative range based on "priming", an activating mechanism of the immune system of plant that does not generate stress, developed by ARTAL together with the "University of Castellón (Spain) - Integration Group metabolism and cell signalling - Plant physiology area".

PRIMTAL WF is an immunological activator that contains plant-specific metabolites based on priming to increase the responsiveness of their immune system in the presence of whiteflies and other sucking insects.

PRIMTAL WF features:

- Activates different defense routes at the same time
- Hinders the appearance of resistances
- Does not generate stress
- Compatible with biological control (beneficials)
- Organic farming certified
- 0.0 Residue: 0 residues - 0 days of preharvest interval

Crops

PRIMTAL WF is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Radicular and/or foliar applications.

General applications rate:

Foliar: 1 – 1,5 l/ha and application.

Radicular: 1,5 – 2,5 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	1 - 1,5	1,5 - 2,5	Every 7 - 10 days
 Leaf vegetables	1 - 1,5	1,5 - 2,5	Every 7 - 10 days
 Citrus and subtropical crops	1 - 1,5	1,5 - 2,5	Every 10 - 15 days
 Fruit trees, olive trees and vines	1 - 1,5	1,5 - 2,5	Every 10 - 15 days
 Extensive and ornamental	1 - 1,5	1,5 - 2,5	Every 10 - 15 days

Compatibilities

PRIMTAL WF is compatible with most fertilizers and agrochemical products known, although it is advisable to perform a previous test. Do not mix with mineral oils, copper, sulphur and acid reaction products

PRIMTAL RS

Immunological Activator - "Stress-free technology"

<u>GUARANTEED CONTENTS:</u>	<u>% w/w</u>	<u>% w/v</u>
Potassium (K ₂ O) water-soluble:	10,00	12,00

* Also available in **ECO** version (certified by ECOCERT)



pH= 7,5 ± 1
1 l = 1,2 kg.



Properties

PRIMTAL RS is one of the products of the new and innovative range based on "priming", an activating mechanism of the immune system of plant that does not generate stress, developed by ARTAL together with the "University of Castellón (Spain) - Integration Group metabolism and cell signalling - Plant physiology area".

PRIMTAL RS is an immunological activator that contains plant-specific metabolites based on priming to increase the responsiveness of their immune system in the presence of mites.

PRIMTAL RS features:

- Activates different defense routes at the same time
- Hinders the appearance of resistances
- Does not generate stress
- Compatible with biological control (beneficials)
- 0.0 Residue: 0 residues - 0 days of preharvest interval

Crops

PRIMTAL RS recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.

Doses and directions for use

Radicular application.






General application rates:

Vegetables: **Radicular:** 3 litros/ha and application.

Application frequency: every 7 - 10 days

Fruit trees: **Radicular:** 2,5 - 5 litros/ha and application.

Application frequency: every 10 - 15 days

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	2,5 - 3	Every 7 - 10 days
 Leaf vegetables	2,5 - 3	Every 7 - 10 days
 Citrus and subtropical crops	2,5 - 5	Every 10 - 15 days
 Fruit trees, olive trees and vines	2,5 - 5	Every 10 - 15 days
 Extensive and ornamental	1,5 - 2,5	Every 10 - 15 days

Compatibilities

PRIMTAL RS compatible with most fertilizers and agrochemical products known, although it is advisable to perform a previous test.

PRIMTAL FG

CE

Immunological Activator - "Stress-free technology"

GUARANTEED CONTENTS:	% p/p	% p/v
Boron (B) water-soluble:	1,00	1,06
Molybdenum (Mo) water-soluble:	1,00	1,06



Control ECOCERT SA F-32600

Suitable product to use in Organic Farming according to (EC) regulations nº 2018/848 and 2021/1165



pH= 6,8
1 l = 1,06 kg.



Properties

PRIMTAL FG is one of the products of the new and innovative range based on "priming", an activating mechanism of the immune system of plant that does not generate stress, developed by ARTAL together with the "University of Castellón (Spain) - Integration Group metabolism and cell signalling - Plant physiology area".

PRIMTAL FG is an immunological activator that contains plant-specific metabolites based on priming to increase the responsiveness of their immune system in the presence of botrytis.

PRIMTAL RS features:

- Activates different defense routes at the same time
- Hinders the appearance of resistances
- Does not generate stress
- Compatible with biological control (microorganisms)
- Organic farming certified
- 0.0 Residue: 0 residues - 0 days of preharvest interval

Crops

PRIMTAL FG is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Radicular and/or foliar applications.

General application rates:

Foliar: 2 - 2,5 l/ha and application.

Radicular: 2,5 - 3 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 2,5	2,5 - 3	Every 7 - 10 days
 Leaf vegetables	2 - 2,5	2,5 - 3	Every 7 - 10 days
 Citrus and subtropical crops	2 - 2,5	2,5 - 3	Every 10 - 15 days
 Fruit trees, olive trees and vines	2 - 2,5	2,5 - 3	Every 10 - 15 days
 Extensive and ornamental	2 - 2,5	2,5 - 3	Every 10 - 15 days

Compatibilities

PRIMTAL FG is compatible with most fertilizers and agrochemical products known, except mineral oils and alkaline reaction products, although it is advisable to perform a previous test.



*Physiological
inducers*

VEGEAMINO

Vegetal amino acids

<u>GUARANTEED CONTENTS:</u>	<u>% w/w</u>	<u>% w/v</u>
Free Amino acids:	20,00	24,80
Total Nitrogen (N):	3,20	3,97
Organic Nitrogen:	3,20	3,97
Present Amino acids: ASP – VAL – GLU (14%) – PHE – SER – ILE – GLY (5%) – LEU – THR – LYS – ARG – HIS – ALA – PRO – TYR – MET		



pH= 6,0 (1%)
1 l = 1,24 kg.



Properties

VEGEAMINO is a bioactivator made of free amino acids obtained by hydrolysis of vegetal proteins which activates the physiology and hormonal processes.

- Stimulates the plant's chlorophyll function and accelerates the vegetative development of the crops.
- Improves and activates the assimilation of trace elements, empowering their effect if used together.
- Reinforces the action of fungicides and insecticides, so it is recommended to mix them.

VEGEAMINO is specially recommended before and after sprouting because it promotes and speeds up the crop development, reinforcing the plants vigour and improving their resistance to certain diseases. It is also recommended to promote the crop development during its first stages (young plants or recently transplanted), during critical stages of growth and to face stress situations.

Crops

VEGEAMINO is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.

Doses and directions for use






Radicular and/or foliar applications.

General application rates:

Foliar: 2 – 3 l/ha and application. Apply every 15 – 21 days.

Radicular: 2 – 4L/Ha and application. Apply every 15 – 21 days.

It is advisable to apply it together to a nutritional product adapted to the needs of crop.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 2,5	2 - 3	2 – 4 applications, active growth and along with phytosanitary products
 Leaf vegetables	2 - 2,5	2 - 3	2 – 4 applications, active growth and along with phytosanitary products
 Citrus and subtropical crops	2 - 3	2,5 - 4	Pre blooming, petal fall and fattening
 Fruit trees, olive trees and vines	2 - 3	2,5 - 4	Sprouting, pre blooming, fruit formation and ripening
 Extensive and ornamental	2 - 3	2,5 - 4	2–4 applications, along with herbicides; post-emergency; at beginning and end of tillering

Compatibilities

VEGEAMINO is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Don't mix with mineral oils, sulphur nor copper solutions, except on olive trees, where it can be used along with copper.

AMINOTAL

Free Amino acids 15%

GUARANTEED CONTENTS:	% w/w	% w/v
Free Amino acids:	15,00	16,80
Total Nitrogen (N):	4,50	5,04
Ammoniacal Nitrogen:	1,80	2,02
Organic Nitrogen:	2,60	2,91
Present Amino acids:		
ASP – VAL – GLU (5,5%) – PHE – SER – ILE – GLY – LEU – THR – LYS – ARG – HIS – ALA – PRO – TYR – HYP – MET		



pH (10%)= 6,8
1 l = 1,12 kg.



Properties

AMINOTAL is a bioactivator based on free amino acids obtained by acid hydrolysis of proteins of low molecular weight. It is fastly absorbed since it acts incorporating itself to the sap thus improving the assimilation of other mineral nutrients (nitrogen, phosphorus, potassium, microelements, etc.). In addition, it reinforces the action of fungicides, insecticides, and contact herbicides so its application together is recommended. The elements that it contains act as activators of the biological processes of the plant and as a source of quick nitrogen supply. Its balanced aminogram allows its use at any time in the crop development.

AMINOTAL is specially recommended in cold periods, as it promotes and speeds up the crop development, reinforcing the plants vigour and improving their resistance to cold and certain diseases. It is also recommended to promote the crop development during its first stages (young plant or recently transplanted), during critical stages of growth and to face stress situations.

Crops

AMINOTAL is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Radicular and/or foliar applications.

General application rates:

Foliar: – 3 l/ha and application. Apply every 15 – 21 days.

Radicular: 2 – 4 l/ha and application. Apply every 15 – 21 days.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 2,5	2 - 3	2 – 5 applications, active growth and along with phytosanitary products
 Leaf vegetables	2 - 2,5	2 - 3	2 – 4 applications, active growth and along with phytosanitary products
 Citrus and subtropical crops	2 - 3	2,5 - 4	Pre blooming, petal fall and fruit setting
 Fruit trees, olive trees and vines	2 - 3	2,5 - 4	Sprouting, pre blooming, fruit setting and veraison (Envero)
 Extensive and ornamental	2 - 3	2,5 - 4	2–4 applications, along with herbicides; post-emergency; at beginning and end of tillering

Compatibilities

AMINOTAL is compatible with most of the available fertilizers and phytosanitary products known, although it is convenient to carry out a previous test. Do not mix with alkaline solutions or containing cupric compounds or oils; it can be regularly applied with copper on olive trees; if mixed with sulphur, the lowest rate should be used.

AMINOTAL SUPER

High concentration free Amino acids

GUARANTEED CONTENTS:	% w/w	% w/v
Free Amino acids:	30,00	36,90
Total Nitrogen (N):	9,00	11,07
Ammoniacal Nitrogen:	3,60	4,43
Organic Nitrogen:	5,20	6,40
Present Amino acids:		
ASP – VAL – GLU (11,1% p/p) – PHE – SER – ILE – GLY – LEU – THR – LYS – ARG – HIS – ALA – PRO – TYR – MET		



pH (10%)= 6,8
1 l = 1,23 kg.



Properties

AMINOTAL Super is a bioactivator based on free amino acids obtained by acid hydrolysis of proteins of low molecular weight. It is fastly absorbed since it acts incorporating itself to the sap thus improving the assimilation of other mineral nutrients (nitrogen, phosphorus, potassium, microelements, etc.). In addition, it reinforces the action of fungicides, insecticides and contact herbicides so its application together is recommended. The elements that it contains act as activators of the biological processes of the plant and as a source of quick nitrogen supply. Its balanced aminogram allows its use at any time in the crop development.

AMINOTAL Super is specially recommended in cold periods, as it promotes and speeds up the crop development, reinforcing the plants vigour and improving their resistance to cold. It is also recommended to promote the crop development during its first stages (young plant or recently transplanted), during critical stages of growth and to face stress situations.

Crops

AMINOTAL Super is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Radicular and/or foliar application.

General application rates:

Foliar: 1 – 1,5 l/ha and application. Apply every 15 – 21 days.

Radicular: 1 – 2 l/ha and application. Apply every 15 – 21 days.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	1 - 1,5	1 - 2	2 - 4 applications in active growth and together with phytosanitary
 Leaf vegetables	0,5 - 1	1 - 2	2 - 4 applications in active growth and together with phytosanitary
 Citrus and subtropical crops	1 - 1,5	1 - 2	In pre-flowering, petal fall and during setting
 Fruit trees, olive trees and vines	0,5 - 1,5	1 - 2	In budding, pre-flowering, fruit setting and veraison
 Extensive and ornamental	1 - 1,5	1 - 2	2 - 4 applications together with herbicides; post-emergency; start and end of tillering

Compatibilities

AMINOTAL Super is compatible with most of the available fertilizers and phytosanitary products known, although it is convenient to carry out a previous test. Do not mix with alkaline solutions or containing cupric compounds or oils; it can be regularly applied with copper on olive trees; if mixed with sulphur, the lowest rate should be used.

NEMARTAL

Root strengthener



GUARANTEED CONTENTS:	% w/w	% w/v
Boron (B) water-soluble:	0,50	0,59
Copper (Cu) water-soluble:	2,00	2,36
Copper* (Cu) complexed:	2,00	2,36
Molybdenum (Mo) water-soluble:	0,10	0,12

*Complexing Agent: Lignosulfonic Acid.

It also contains organic compounds and precursors of brassinolides.



pH= 2,6
1 l= 1,18 kg



Control ECOCERT SA F-32600

Suitable product to use in Organic Farming according to (EC) regulations nº 2018/848 and 2021/1165

Properties

NEMARTAL is a physiological inducer 0.0 Residue, the result of an exhaustive development process carried out by the R + D + i department of Artal Smart Agriculture, based on microelements, organic compounds and precursors of brassinolides.

NEMARTAL is specially formulated to strengthen the roots of plants and achieve a well-developed, structured and operational root system even in the presence of nematodes.

NEMARTAL does not have a nematicidal or nematostatic effect. It acts directly on the meristematic tissues that are responsible for plant growth, strengthening the root system, allowing plants to increase both the number of fruits collected and the total production harvested.

NEMARTAL application:

- Reactivates / regenerates the root system slowed down by stress factors
- Increases the endogenous resistance of the plant to adversity
- Stimulates the development of the primary and secondary meristematic tissues of the root
- Increases the number of internodes in horticultural crops
- Increases yield (kg / ha)

Crops





NEMARTAL is recommended for any type of crop: fruit trees (pip and pit), citrus and vegetables.

Doses and directions of use

Radicular application.

General application rates:

Radicular: 2 – 3 l/ha and application.

CULTURE	DOSES L/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	2 - 2,5	Every 15 days since transplant
 Leaf vegetables	2 - 2,5	Every 15-20 days since transplant
 Citrus and subtropical crops	2,5 - 5	Monthly applications from sprouting up to 30 days before harvest
 Fruit trees, olive trees and vines	2,5 - 5	Monthly applications from sprouting up to 30 days before harvest

Compatibilities

NEMARTAL is compatible with most of the phytosanitary products known, except mineral oils and alkaline reaction products, although it is advisable to carry out a previous test.

ENRAIZAL

Root development inducer – “Booster” effect

GUARANTEED CONTENTS:

	% w/w	% w/v
Free Amino acids:	4,20	4,83
Total Nitrogen (N):	6,00	6,90
Organic Nitrogen:	0,82	0,94
Nitric Nitrogen:	0,95	1,09
Ureic Nitrogen:	4,23	4,86
Phosphorus (P ₂ O ₅) water-soluble:	2,00	2,30
Potassium (K ₂ O) water-soluble:	4,00	4,60

Contains also ≤ 0.1% w/w:

Boron (B); Manganese (Mn) and Zinc (Zn)

Present Amino acids:

ASP – VAL – GLU – PHE – SER – ILE – GLY (3%) – LEU – THR – LYS (1%)
– ARG – HIS – ALA – PRO – TYR – MET



pH= 5,0
1 l = 1,15 kg.



Properties

ENRAIZAL is an amino acids-based product enriched with NPK and micronutrients. It contains derivatives of purine bases that give its biostimulant activity; when applied after transplantation it promotes root growth and mycorrhizal colonization.

Its application is recommended since transplant or when encouraging rooting is desirable. It also has a positive effect in stress situations (drought, frost, deficiency states, hail, ...) or when it is necessary to boost growth and development of the crop in the early stages.

CROPS

ENRAIZAL is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both foliar and radicular applications.

General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2.5 – 5 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 4	2,5 - 5	5 – 10 days after transplanting and 10 – 15 days later
 Leaf vegetables	2 - 4	2,5 - 5	5 – 10 days after transplanting and 10 – 15 days later
 Citrus and subtropical crops	2,5 - 4	2,5 - 5	1 – 2 applications in preflowering
 Fruit trees, olive trees and vines	2,5 - 4	2,5 - 5	1 – 2 applications in preflowering
 Extensive and ornamental	1 - 1,5	----	1 – 2 applications since transplant

Compatibilities

ENRAIZAL is compatible with most fertilizers and phytosanitary products known, although it is convenient to perform a previous test. Do not mix with mineral oils, sulphur or cupric broths except on olive trees, wherein the mixture with cupric compounds may be advisable. Do not apply on plum trees and cut flowers.

SUPER SET CE

Flowering & setting improver – Hormones-free

GUARANTEED CONTENTS:	% w/w	% w/v
Potassium (K ₂ O) water-soluble:	10,00	13,20
Phosphorus (P ₂ O ₅) water-soluble:	10,00	13,20
Boron (B) water-soluble:	1,00	1,32
Molybdenum (Mo) water-soluble:	3,00	3,96



pH= 7,0
1 l = 1,32 kg.



Properties

SUPER SET is a special liquid fertilizer, hormones-free, specially developed to naturally improve flowering and fruit setting. It is a rapid absorption and assimilation enriched formula, based on phosphorus, potassium, molybdenum and boron.

SUPER SET contains an exclusive tri-monomeric combination of high pollination and germination power that together to phosphorous, potassium, molybdenum and boron works:

- Lengthening the pollen tube favouring flower fertilization
- Increasing the germination of the pollen grain improving its quality
- Improving flowering and favouring fruit setting

Crops

SUPER SET is recommended for fruit trees (pip and pit fruits) and in those crops where we want to improve the setting of fruits such as citrus, vegetables, etc.




Doses and directions for use

Both foliar and radicular applications.

General application rates:

Foliar: 1 – 3 l/ha and application. Apply every 15 – 20 days.

Radicular: 2.5 – 5 l/ha and application. Apply every 15 – 20 days.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 3	2,5 - 5	Since first setting, every 10 – 15 days
 Citrus and subtropical crops	2 - 3	2,5 - 5	2 – 3 applications: preflowering and post flowering
 Fruit trees, olive trees and vines	2 - 2,5	2 - 3	2 – 3 applications: preflowering and post flowering

Compatibilities

SUPER SET is compatible with most fertilizers and phytosanitary products known, although it is advisable to perform a previous test. Do not mix with mineral oils, or products of highly acidic or highly alkaline reaction. It is recommended not to mix with coppers except for olive trees.

MOBILE K Ripening inducer

GUARANTEED CONTENTS:	% w/w	% w/v
Potassium (K ₂ O) water-soluble:	20,00	27,00



pH= 7,5
1 l = 1,35 kg.



Properties

MOBILE K is a liquid fertilizer based on high mobility organic potassium of fast absorption and assimilation by the plant. Its exclusive bicarboxylic combination provides a greater degree of translocation of nutrients and sugars.

MOBILE K is specially developed to improve the quality, appearance, size and uniformity of fruits.

MOBILE K is especially recommended for:

- Fattening and ripening of fruits
- During times of increased absorption difficulty, for example, low temperatures
- For nutrition and / or correction of Potassium deficiency states

MOBILE K by its buffer effect (neutral pH) facilitates mixtures with other fertilizers and / or phytosanitary products.

Crops

MOBILE K is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both foliar and radicular applications.

General application rates:

Foliar: 1,5 – 3 l/ha and application.

Radicular: 2,5 – 5 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 3	2 - 3	Every 10 - 15 days, since fruit setting
 Leaf vegetables	2 - 3	2 - 3	Every 10 - 15 days at moments of more absorption difficulty
 Citrus and subtropical crops	2,5 - 5	2,5 - 5	2 - 3 applications, fattening and ripening
 Fruit trees, olive trees and vines	2,5 - 5	2,5 - 5	2 - 3 applications, fattening and ripening
 Extensive and ornamental	1 - 1,5	---	1 - 2 applications in the moments of more absorption difficulty

Compatibilities

MOBILE K is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test.

MAJESTO

Ripening inducer with amino acids

GUARANTEED CONTENTS:	% w/w	% w/v
Free Amino acids:	6,00	7,89
Total Nitrogen (N):	1,00	1,32
Organic Nitrogen:	1,00	1,32
Phosphorus (P ₂ O ₅) water-soluble:	6,00	7,89
Potassium (K ₂ O) water-soluble:	7,00	9,21
It also contains: 20% Mono, di-polysaccharides		
Present Amino acids:		
ASP – VAL – GLU (4,21%) – PHE – SER – ILE – GLY (1,50%) – LEU – THR – LYS – GLN – ARG – HIS – ALA – PRO – TYR – HYP – MET – ASN – CYS		



pH= 7,4
1 l = 1,315 kg.



Not available for the European Union

Properties

MAJESTO is a special fertilizer that acts in different plant physiological processes stimulating its growth and development; either from the development of roots and mycorrhization after the transplant, as well as in the ripening of fruit, since it favours sugars formation improving the quality of production.

Crops

MAJESTO is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both foliar and radicular applications.

General applications rates:

Foliar: ,5 – 1,5 l/ha and application.

Radicular: 1,5 – 2,5 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	0,5 - 1,5	1,5 - 2,5	Every 10 – 15 days since transplant
 Leaf vegetables	0,5 - 1,5	1,5 - 2,5	Every 10 – 15 days since transplant
 Citrus and subtropical crops	1 - 1,5	2 - 2,5	In pre-flowering, flowering and fattening
 Fruit trees, olive trees and vines	1 - 1,5	2 - 2,5	In pre-flowering, flowering and fattening
 Extensive and ornamental	0,5 - 1	---	1 – 2 applications after transplant

Compatibilities

MAJESTO is compatible with most agrochemical products known, although it is advisable to perform a test. Do not mix with mineral oils, Nor products of alkaline reaction.

ARTALMAX FRUIT

**Ripening inducer – Hormones-free
Increases caliber & size**

GUARANTEED CONTENTS:	% w/w	% w/v
Potassium (K ₂ O) water-soluble:	10,00	13,00
Polysaccharides:	20,00	26,00
Auxin precursors:	3,50	4,55
Chlorides <0,3%		



pH=5,0
1 l = 1,3 kg.



Properties

ARTALMAX FRUIT is a special liquid fertilizer, hormones-free, particularly developed to fatten and increase caliber and size of fruits and vegetables, and naturally improve their sugar content (Brix). Formula of rapid absorption and assimilation by the crop, based on bicarboxylic potassium of last generation, polysaccharides, growth natural promoters and auxin precursors.

ARTALMAX FRUIT acts:

- Promoting cell division and thickening
- Improving texture and protection
- Lengthening the durability (shelf-life or post-harvest life)
- Increasing sugar content (Brix)
- Increasing calibre and fruit fill

Crops

ARTALMAX FRUIT is recommended in all fruit crops where it is intended to increase the caliber, fruit filling and its sugar content (degrees Brix).




Doses and directions for use

Both foliar and radicular applications.

General application rates:

Foliar: 2 – 3 l/ha and application.

Radicular: 2.5 – 5 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 3	2,5 - 5	Every 10 – 15 days from fruit setting
 Citrus and subtropical crops	2,5 - 3	2,5 - 5	In pre-flowering, in fruit setting and 15 - 20 days after the 2nd application
 Fruit trees, olive trees and vines	2,5 - 3	2,5 - 5	In pre-flowering, in fruit setting and 15 - 20 days after the 2nd application

Compatibilities

ARTALMAX FRUIT does not alkalize the pH of the treatment broth, so it favours the mixtures with the majority of phytosanitaires, including mineral oils; it is compatible with most fertilizers and phytosanitary products known, although it is advisable to perform a test. Do not mix with products of highly acidic or highly alkaline reaction.

+PROD

CE

Increases production – Improves quality

<u>GUARANTEED CONTENTS:</u>	<u>% w/w</u>	<u>% w/v</u>
Copper (Cu) water-soluble:	1,80	2,25
Manganese (Mn) water-soluble:	0,80	1,00
Zinc (Zn) water-soluble:	0,60	0,75



Control ECOCERT SA F-32600

Suitable product to use in Organic Farming according to (EC) regulations n° 2018/848 and 2021/1165



pH=2,5
1 l = 1,25 kg.



Properties

+PROD is a product developed by the R&D&I department of Artal Smart Agriculture, tested and verified by different universities and research centres.

Its formula is based on natural organic compounds, microelements and metabolic fuels that favour the generation and transport of photoassimilates needed for production.

Its application on a regular basis increases the production and improves the quality of the crops (precocity, homogeneous size and colour, longer post-harvest life ...).

Crops

+PROD is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both foliar and radicular applications.

General application rates:

Foliar: 2 – 3 l/ha and application.

Radicular: 2.5 – 5 l/ha and application.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	2 - 4	Every 15 days since 1st setting until end of cycle
 Leaf vegetables	2 - 4	Every 15 – 21 days since transplant.
 Citrus and subtropical crops	2 - 4	2 – 3 applications, sprouting, pre-blooming and fattening.
 Fruit trees, olive trees and vines	2 - 4	2 – 3 applications, sprouting, pre-blooming and fattening.
 Extensive and ornamental	---	1 – 2 applications since transplant

Compatibilities

+PROD is compatible with most fertilizers and agrochemical products known, although it is advisable to perform a previous test. Do not mix with mineral oils.

ALGATON

Seaweed extracts – *Ascophyllum Nodosum*

<u>GUARANTEED CONTENTS:</u>	<u>% w/w</u>	<u>% w/v</u>
Total Nitrogen (N):	6,00	7,68
Nitric Nitrogen:	0,80	1,02
Ureic Nitrogen:	5,20	6,66
Phosphorus (P ₂ O ₅) water-soluble:	3,00	3,84
Potassium (K ₂ O) water-soluble:	10,00	12,80
Molybdenum (Mo) water-soluble:	0,30	0,38
Mannitol:	0,50	0,64

* Also available in **ECO** version (certified by ECOCERT)



pH=10
1 l = 1,28 kg.



Properties

ALGATON is an NPK fertilizer with molybdenum, based on natural extracts of marine algae. This product has a high stimulating power, since its content in seaweed extracts provides a high proportion of natural phytohormones (cytokinines, auxins, gibberellins, etc.), carbohydrates, alginic acid, mannitol, laminarin...

Once applied, permeates the cellular tissues and has an influence in the plant's physiological processes, stimulating its growth and flowering.

ALGATON is recommended as a stimulant of the plant's metabolic activity as it promotes the processes related to blooming, fruit formation and fruit ripening, also helping to get over adverse conditions or stress situations. It also favours the fruits homogeneity and their transport resistance

Crops

ALGATON is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both foliar and radicular applications.

General application rates:

Foliar: 2 – 3 l/ha and application. Apply every 15 – 20 days.

Radicular: 2.5 – 5 l/ha and application. Apply every 15 – 20 days.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 3	2 - 4	Every 15 – 20 days since first setting
 Leaf vegetables	2 - 3	2 - 4	Every 15 – 20 days since transplant
 Citrus and subtropical crops	2 - 3	2 - 4	Apply in flowering, setting and ripening
 Fruit trees, olive trees and vines	2 - 3	2 - 4	Apply in flowering, setting and ripening
 Extensive and ornamental	1 - 2	---	1 – 2 applications from transplant

Compatibilities

ALGATON is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, copper, sulphur or acid reaction products.

FOSFITAL EXTRA

Potassium phosphite 30-20

GUARANTEED CONTENTS:	% w/w	% w/v
Phosphorus* (P ₂ O ₅) water-soluble:	30,00	42,00
Potassium (K ₂ O) water-soluble:	20,00	28,00
*In the form of phosphite ion		

Not available for the European Union



pH= 4
1 l = 1,40 kg.



Properties

FOSFITAL Extra is a product in liquid form, water-soluble, with a double function on plants. On the one hand, it acts as a powerful nutrient, stimulating fruit ripening due to its content of potassium. On the other hand, the presence of phosphorus in the form of ion PHOSPHITE, acts stimulating the self-defence mechanisms of plants.

The application of **FOSFITAL Extra** is recommended when the consumption of these elements is more important, such as the formation of the root system, flowering, fruit setting, fattening and ripening. It prevents water-related diseases and rot in horticultural crops.

Crops

FOSFITAL Extra is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops to favour growth and fattening of fruits.

Doses and directions for use






Both foliar and radicular applications.

General application rates:

Foliar: 2 – 3 l/ha and application.

Radicular: 2 – 4 l/ha and application.

It is recommended to apply in rainy and high humidity periods.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	2 - 3	Every 15 – 20 days since transplant
 Leaf vegetables	2 - 3	Every 15 – 20 days since transplant
 Citrus and subtropical crops	2 - 4	2 – 3 applications: spring sprouting and fattening
 Fruit trees, olive trees and vines	2 - 4	2 – 3 applications: spring sprouting and fattening
 Extensive and ornamental	1 - 1,5	2 – 3 applications

Compatibilities

FOSFITAL Extra is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, sulphur or products containing copper. In the latter case, after the application of a copper compound, wait at least 15 days before applying this product.

FOSFITAL CALCIUM

Calcium phosphite with boron

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	6,50	8,13
Nitric Nitrogen:	3,25	4,06
Ammoniacal Nitrogen:	3,25	4,06
Phosphorus* (P ₂ O ₅) water-soluble:	11,50	14,38
Calcium (CaO) water-soluble:	4,00	5,00
Boron (B) water-soluble:	0,50	0,63

* In the form of phosphite ion

Not available for the European Union



pH=2
1 l = 1,25 kg.



Properties

FOSFITAL Calcium is a product based on nitrogen, phosphorus, calcium and boron that has a double function on crops: on the one hand, it acts as a nutritional source; in addition, due to the presence of phosphorus in the form of ion FOSPHITE acts as a stimulant of the self-defence mechanisms of plants.

Crops

FOSFITAL Calcium is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops to favour growth and fattening of fruits.






Doses and directions for use

Both foliar and radicular applications.

General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 – 5 l/ha and application.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	2 - 2,5	Since transplant and every 15 -20 days.
 Leaf vegetables	2 - 2,5	Since transplant and every 15 -20 days.
 Citrus and subtropical crops	2,5 - 5	2 - 3 applications: sprouting, and fattening.
 Fruit trees, olive trees and vines	2,5 - 5	2 - 3 applications: sprouting, and fattening.
 Extensive and ornamental	1 - 1,5	2 - 3 applications

Compatibilities

FOSFITAL Calcium is compatible with most of the available fertilizers and phytosanitary products, even though it is advisable to perform a previous test. Do not mix with alkaline products, mineral oils, sulphur or products containing copper. In the latter case, after the application of a copper compound, wait at least 15 days before application

PINOPHYTAL MIX

Self-defense inducer – Pinophytes extracts

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Copper (Cu) water-soluble:	1,50	1,88
Manganese (Mn) water-soluble:	0,50	0,63
Zinc (Zn) water-soluble:	0,50	0,63



Control ECOCERT SA F-32600

Suitable product to use in Organic Farming according to (EC) regulations n° 2018/848 and 2021/1165



pH=2,3
1 l = 1,25 kg.



Properties

PINOPHYTAL MIX is a solution of natural extracts of PINOPHYTES with microelements that favours the synthesis of the phenolic substances and phytoalexins that are created by the plants themselves to face specific situations of stress

- It does not adversely affect crop development
- It does not stain or produce phytotoxicity at the recommended doses
- Completely natural
- Free of residues

Crops

PINOPHYTAL MIX is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Radicular application.

General application rates:

Radicular: :2 – 3 l/ha and application.

It is recommended to make several applications throughout the vegetative cycle.
For foliar application, a previous test on the crop shall be done.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicaire	
 Fruit vegetables	2 – 2,5	2 – 6 applications every 7-10 days
 Leaf vegetables	2 – 2,5	2 – 6 applications every 7-10 days
 Citrus and subtropical crops	2,5 - 3	2 – 4 applications
 Fruit trees, olive trees and vines	2,5 - 3	2 – 4 applications
 Extensive and ornamental crops	1,5 - 2,5	2 – 4 applications

INCOMPATIBILITIES

PINOPHYTAL MIX is compatible with most fertilizers and agrochemical products known, although it is always advisable to perform a previous test. Do not mix with mineral oils.



FERTIORGAN CALCIUM

Saline corrector

www.salinecorrector.com

GUARANTEED CONTENTS:	% w/w	% w/v
Organic matter:	30,00	40,20
Calcium (CaO) water-soluble:	7,50	10,05
Calcium (CaO) complexed by LS:	7,50	10,05
Complexing Agent: Lignosulphonic acid (LS)		
Stable in the pH range: 2 – 10		



pH=3,0 ±1*
1 l = 1,34 kg.



Properties

FERTIORGAN Calcium is a product based on complexed calcium with lignosulphonates and rich in organic matter. It works increasing the soil microbial activity and the cation-exchange capacity (CEC), thus improving its physico-chemical properties, and moving sodium ions (Na) off the clay-humic complex. As a result, the assimilation of other nutrients needed for the plant is reactivated.

The organic matter present in **FERTIORGAN Calcium** is one of the elements that makes this product unique; it comes from northern European conifers, is especially rich in proteins, lipids and sugars and is PEFC certified.

Crops

FERTIORGAN Calcium is specially indicated for crops with salinity problems and for those more sensitive to calcium insufficiency, such as berries, leaf vegetables (lettuce, cabbage...), fruit vegetables (tomato, pepper...), fruits (melon, watermelon...), legumes, cereals, as well as pip and pit fruit trees

Doses and directions for use






Radicular application.

General application rates:

Radicular: 5 – 10 l/ha and application

Apply every 7 – 15 days.

Apply several times along the vegetative cycle until completing 75 – 100 l/ha.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	90 - 100	Every 7-10 days from transplant
 Leaf vegetables	80 - 90	Every 7-10 days from transplant
 Citrus and subtropical crops	80 - 90	Every 15-20 days from sprouting, at flowering and setting
 Fruit trees, olive trees and vines	80 - 90	Every 15-20 days from sprouting, at flowering and setting
 Extensive and ornamental	70 - 75	Every 7-10 days from transplant

Compatibilities

FERTIORGAN Calcium is compatible with most fertilizers and phytosanitary products known, although it is advisable to make a test. Do not mix with mineral oils, products containing sulphur, phosphorus, iron chelates, nor highly acidic or highly alkaline reaction's products.

FERTIORGAN HUMUS

Humic acids coming from Leonardite

GUARANTEED CONTENTS:	% w/w	% w/v
Potassium (K ₂ O) water-soluble:	5,00	5,75
Total humic extract:	15,00	17,25
Humic acids:	8,00	9,20
Fulvic acids:	7,00	8,05



pH=13,2 ±1*
1 l = 1,15 kg.



Properties

FERTIORGAN Humus is a liquid humic amendment from highly humified lignites (Leonardite). It incorporates humic acids resulting from the process of decomposition and transformation of organic matter, increasing the microbial activity of the soil and strengthening the clay-humic complex, as well as increasing the ion exchange capacity of the soil.

FERTIORGAN Humus increases the buffering capacity of the soil and allows the formation of complexes with mineral cations, improving their absorption by the plant.

It is recommended in all the vegetative states of the plant and preferably in the moments of greater vegetative and productive activity of the crops.

Crops

FERTIORGAN Humus is especially recommended in low-organic matter soils and for all types of crops: fruit trees, vegetables, extensive and ornamental.






Doses and directions for use

Radicular application.

General application rates:

Radicular: 5 – 10 l/ha and application, every 7-15 days.

Carry out several applications throughout the vegetative cycle until completing 40-60 l / ha.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	40 - 60	4-7 applications since transplant, every 15-21 days
 Leaf vegetables	25 - 50	4-7 applications since transplant, every 15-21 days
 Citrus and subtropical crops	40 - 60	Early spring and early summer, every 15 days
 Fruit trees, olive trees and vines	40 - 60	Late winter / early spring, every 15 days
 Extensive and ornamental	25 - 30	3-5 applications since transplant, every 15-21 days

Compatibilities

FERTIORGAN Humus is compatible with most known nutritional and phytosanitary products, except products with acid pH. Do not mix with sulphur or mineral oils. Do not mix with herbicides incompatible with the organic matter. *ezclar con aceites minerales ni azufre. No mezclar con herbicidas que sean incompatibles con la materia orgánica.*

FULVITAL

Liquid organic matter

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	2,00	2,46
Organic nitrogen:	1,70	2,09
Potassium (K ₂ O):	4,00	4,92
Organic carbon:	17,40	21,40
Ratio C/N:	10,20	12,55



* Also available in **ECO** version (certified by ECOCERT)

pH = 5 ± 1*
1 l = 1,23 kg.



Properties

FULVITAL is a product made from organic matter coming from the decomposition and transformation process of vegetal material, which works increasing the microbial activity of the soil, improving its physical and chemical properties, and also increasing its cation exchange capacity (CEC), the assimilation of other nutrients that the plant needs and strengthening the clay-humic complex.

FULVITAL promotes the formation of complexes with mineral cations, improving their absorption by the plant, it also enhances the padding capability of the soil.

FULVITAL is specially recommended on soils with low organic matter contents and as a complement in foliar applications of other nutrients, given that it works as a carrier agent in their assimilation by the crop's foliar mass.

Crops

FULVITAL is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Radicular application.

General application rates:

Radicular: 5 – 10 l/ha and application, every 10-15 days.

Carry out several applications throughout the vegetative cycle until completing 80-120 l/ha.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	60 - 80	4-6 applications from transplant, every 10-15 days
 Leaf vegetables	40 - 60	3-5 applications from transplant, every 15-21 days
 Citrus and subtropical crops	60 - 80	From sprouting, every 15-21 days
 Fruit trees, olive trees and vines	60 - 80	From sprouting, every 15-21 days
 Extensive and ornamental	40 - 60	3-5 applications from transplant, every 15-21 days

Compatibilities

FULVITAL is compatible with most of the available fertilizers and phytosanitary products, even though it is advisable to perform a previous test. Do not mix with mineral oils and highly alkaline reaction products or products whose label indicates incompatibility with organic matter.

FERTIORGAN MICROELEMENTS

Organic matter with microelements

GUARANTEED CONTENTS:	% w/w	% w/v
Organic matter:	35,00	42,35
Calcium (CaO) water-soluble:	1,40	1,69
Magnesium (MgO) water-soluble:	1,00	1,21
Boron (B) water-soluble:	0,01	0,01
Iron (Fe) water-soluble:	0,02	0,02
Manganese (Mn) water-soluble:	0,01	0,01
Zinc (Zn) water-soluble:	0,002	0,002

Complexing agent: Lignosulfonic Acid (LS)
Stable in the pH range: 2 – 10



pH=3,4 ±1*
1 l = 1,21 kg.



* Also available in **ECO** version (certified by ECOCERT)

Properties

FERTIORGAN Microelements is a product based on organic matter, from conifers in northern Europe, and enriched with trace elements. It works by increasing the microbial activity of the soil and improving its physico-chemical properties; increases the cation exchange capacity (CEC), the assimilation of other nutrients necessary for the plant and strengthens the clay-humic complex.

FERTIORGAN Microelements is especially recommended in low-organic matter soils, since it works by improving the properties of the soil and the assimilation of other nutrients that are present in it and that are necessary for the correct nutrition of the crops. It can be applied throughout the vegetative cycle, recommending as most effective late winter-early spring.

Crops

FERTIORGAN Microelements is especially recommended in low-organic matter soils and for all types of crops: fruit trees, vegetables, extensive and ornamental.

Doses and directions for use






Radicular application.

General application rates:

Localized irrigation: 5 – 10 l/ha and application, every 7-15 days

Border irrigation: 15-20 l/ha and application, every 15-20 days.

Carry out several applications throughout the vegetative cycle until completing 75-100 l/ha.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Radicular	
 Fruit vegetables	40 - 60	4-7 applications from pre-transplant, every 10-15 days
 Leaf vegetables	25 - 50	4-7 applications from pre-transplant, every 10-15 days
 Citrus and subtropical crops	40 - 60	Early spring and early summer every 15 days
 Fruit trees, olive trees and vines	40 - 60	Late Winter-Early Spring every 15 days
 Extensive and ornamental	25 - 30	3-5 applications from pre-transplant, every 15-21 days

Compatibilities

FERTIORGAN Microelements is compatible with most of the available fertilizers and phytosanitary products, even though it is advisable to perform a previous test. Do not mix with mineral oils or sulphur nor highly acid or alkaline reaction products.

FLOWAL Ca

Calcium deficiency corrector

GUARANTEED CONTENTS:	% w/w	% w/v
Calcium (CaO) water-soluble:	12,00	16,80
Complexed Calcium (CaO) by HGA	12,00	16,80
Complexing agent: Heptagluconic acid		
Stable in the pH range: 3,5 – 12		



pH = 7,5 ± 1
1 l = 1,40 kg.



Properties

FLOWAL Ca is a product based on highly concentrated complexed calcium developed to be used as a source of this element and to correct insufficiencies due to deficiencies or imbalances in the assimilation of calcium. Thanks to its complexing agent, it is quickly absorbed and assimilated by the crop.

FLOWAL Ca has been specially developed for preventive and curative control of various calcium disorders as aseptic blossom-end-rot on tomatoes, cucumbers and olives. It also prevents foliar necrosis on lettuce; Bitter-Pit on apple trees, blackheart on carrots and celery, witches broom roots in nurseries, etc.

Crops

FLOWAL Ca is recommended for all types of crops: fruit trees (pip and pit fruits), vegetables, extensive and ornamental crops.

Doses and directions for use

Both radicular and/or foliar applications.






General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

Apply every 15 – 20 days in vegetables.

Its application is preferably recommended during the main development stages of the fruit.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 2,5	3 - 5	2 – 3 applications
 Leaf vegetables	2 - 2,5	3 - 5	2 – 3 applications
 Citrus and subtropical crops	3 - 4	4 - 6	2 – 3 applications
 Fruit trees, olive trees and vines	2,5 - 3,5	4 - 6	2 – 3 applications
 Extensive and ornamental	2 - 3	3 - 5	2 – 3 applications

Compatibilities

FLOWAL Ca is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, sulphur or alkaline reaction products. It may present problems with fertilizers containing phosphates.

FLOWAL Zn

Zinc deficiency corrector

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Zinc (Zn) water-soluble:	7,00	8,82
Chelating agent: HEEDTA		
Stable in the pH range: 3 – 9		



pH = 3,5
1 l = 1,26 kg.



Properties

FLOWAL Zn is a product based on chelated zinc developed to be used as a source of this element and to correct insufficiencies due to deficiencies or imbalances in the assimilation of zinc. Deficiencies of this element are characterized by the loss of apical dominance, the leaf size reduction, the internervial chlorosis in young leaves and a reduced plant growth.

It is specially developed for the preventive and curative control of Zinc deficiencies manifested in acid, sandy and/or alkaline soils or by the presence of antagonist elements.

Crops

FLOWAL Zn is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.

Doses and directions for use




Both radicular and/or foliar applications.

General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

It is advisable to apply it during the first third of the cycle in vegetables, extensive crops and vines. In citrus and fruit trees before spring and summer buds.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 4	2 - 3	2 - 4 applications
 Leaf vegetables	2 - 4	2 - 3	2 - 4 applications
 Citrus and subtropical crops	2 - 3,5	3 - 5	2 - 4 applications
 Fruit trees, olive trees and vines	2 - 3,5	3 - 5	2 - 4 applications
 Extensive and ornamental	2 - 4	2 - 3	2 - 4 applications

Compatibilities

FLOWAL Zn is compatible with most fertilizers and phytosanitary products known, although it is advisable to make a previous test. Do not mix with mineral oils nor alkaline reaction products.

FLOWAL Mg

Magnesium deficiency corrector

GUARANTEED CONTENTS:	% w/w	% w/v
Magnesium (MgO) water-soluble:	4,00	4,80
Magnesium (MgO) complexed by HGA:	4,00	4,80
Complexing agent: Heptagluconic acid (HGA)		
Stable in the pH range: 1 – 10		



pH=8,5
1 l = 1,2 kg.



Properties

FLOWAL Mg is a product made of complexed magnesium. It has been developed to be used as a source of this element and for correcting insufficiencies due to deficiencies or imbalances in the assimilation of magnesium. Thanks to its complexing agent, it is quickly absorbed and assimilated by the crop.

FLOWAL Mg is specially developed for the preventive and curative control of magnesium deficiencies which take place in acid/sandy soils or because of the presence of antagonist elements.

Crop

FLOWAL Mg is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.

Doses and directions for use






Both radicular and/or foliar applications.

General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

It is recommended to apply it preferably during sprouting and during the main development stages of the fruit. Do not apply during

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 4	3 - 5	2 - 4 applications
 Leaf vegetables	2 - 4	3 - 5	2 - 4 applications
 Citrus and subtropical crops	2 - 3	4 - 6	2 - 4 applications
 Fruit trees, olive trees and vines	2 - 3	4 - 6	2 - 4 applications
 Extensive and ornamental	2 - 4	3 - 5	2 - 4 applications

Compatibilities

FLOWAL Mg is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, sulphur or alkaline reaction products.

FLOWAL Fe

Iron deficiency corrector

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Iron (Fe) water-soluble:	4,10	4,90
Chelating agent: HEEDTA		
Stable in the pH range: 3 – 8		



pH = 4 ± 1
 1 l = 1,195 kg.



Properties

FLOWAL Fe is an iron-based product developed to be used as a source of this element and to correct insufficiencies due to deficiencies or imbalances in its assimilation.

Thanks to its chelating agent, **FLOWAL Fe** is quickly absorbed and assimilated by the crop. It is particularly developed for the preventive and curative control of Iron deficiencies manifested mainly due to soil pH (in alkaline soils) or to the presence of antagonistic elements.

Crops

FLOWAL Fe is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.

Doses and directions for use

Both radicular and/or foliar applications.






General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

Apply every 15 – 20 days in vegetables.

Preferably start the application since sprouting in woody crops; since the sowing in vegetables and in the stages of greater development of crop.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2,5 - 3,5	3 - 5	2 – 4 applications
 Leaf vegetables	3 - 4	3 - 5	2 – 4 applications
 Citrus and subtropical crops	3 - 4	4 - 6	2 – 4 applications
 Fruit trees, olive trees and vines	3 - 4	4 - 6	2 – 4 applications
 Extensive and ornamental	2 - 3		2 – 4 applications

Compatibilities

FLOWAL Fe is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, sulphur, alkaline reaction products nor calcium salts.

NUTRIARTAL

Complexed manganese and zinc

GUARANTEED CONTENTS:	% w/w	% w/v
Manganese (Mn) water-soluble:	4,00	5,40
Manganese (Mn) complexed by GA:	4,00	5,40
Zinc (Zn) water-soluble:	3,50	4,73
Zinc (Zn) complexed by GA:	3,50	4,73
Complexing Agent: Gluconic Acid (GA).		
Stable in the pH range: 3 – 9.		
Anion: Sulphate		



pH = 3
1 l = 1,35 kg.



Properties

NUTRIARTAL is a trace elements complex, with manganese and zinc (100% complexed) balanced formula, developed for its use as a source of these elements and for correcting insufficiencies due to deficiencies or imbalances in the assimilation of these elements.

Thanks to its complexing agent properties, it is quickly absorbed and assimilated by the crop. It is recommended to provide a proper manganese and zinc balance in crops, increasing their potential, given that these trace elements are catalysts for respiratory reaction, take part in photosynthesis and in several enzymatic reactions, among other processes.

Crops

NUTRIARTAL is especially recommended for citrus, but its use is indicated for all types of crops: fruit trees (pip and pit), vegetables, extensive and ornamental crops.

Doses and directions for use

Both radicular and/or foliar applications.






General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

Apply every 15 – 20 days in vegetables.

It is advisable to apply it during sprouting, before blooming and during the main development stages of the crop.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2,5 - 3,5	3 - 5	2 – 4 applications
 Leaf vegetables	2,5 - 3,5	3 - 5	2 – 4 applications
 Citrus and subtropical crops	2,5 - 4	3 - 5	2 – 4 applications
 Fruit trees, olive trees and vines	2,5 - 4	3 - 5	2 – 4 applications
 Extensive and ornamental	1,5 - 2	3 - 5	2 – 4 applications

Compatibilities

NUTRIARTAL Fe is compatible with most of the available fertilizers and phytosanitary products. Do not mix with mineral oils, dinocap and alkaline reaction products.

FLOWAL CaB

Calcium & boron deficiencies corrector

GUARANTEED CONTENTS:	% w/w	% w/v
Calcium (CaO) water-soluble:	10,00	13,80
Calcium (CaO) complexed by GA:	10,00	13,80
Boron (B) water-soluble:	1,00	1,38

Complexing Agent: Gluconic Acid (GA).
Stable in the pH range: 3,5 – 9



pH = 4
1 l = 1,38 kg.



Properties

FLOWAL CaB is a product based on complexed calcium of high concentration and boron, developed to be used as a source of these elements and to correct insufficiencies due to deficiencies or imbalances in the assimilation of these elements. Thanks to its complexing agent, it is absorbed and processed rapidly by the crop.

FLOWAL CaB is specially developed for the control of aseptic BLOSSOM end ROT in tomato, cucumber and olives; cracking because of deficiency in some fruits; leaf necrosis in lettuce; Bitter-Pit in apple; blackheart in carrot and celery; witches broom roots in nurseries, etc.

Crops

FLOWAL CaB is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental

Doses and directions for use






Both radicular and/or foliar applications.

General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

It is advisable to apply it along the whole cycle, preferably at fruit setting and during the main development stages of the fruit.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 2,5	2,5 - 5	2 – 3 applications
 Leaf vegetables	2 - 2,5	2,5 - 5	2 – 3 applications
 Citrus and subtropical crops	3 - 4	3,5 - 5	2 – 4 applications
 Fruit trees, olive trees and vines	2,5 - 3,5	3,5 - 5	2 – 3 applications
 Extensive and ornamental	2 - 3	---	2 – 3 applications

Compatibilities

FLOWAL CaB is compatible with most fertilizers and agrochemical products known, although it is advisable to perform a previous test. Do not mix with mineral oils, copper, sulphur nor alkaline reaction products. It may present problems with fertilizers containing phosphates.

NUTRIARTAL + Fe

Complexed iron, manganese and zinc

GUARANTEED CONTENTS:	%w/w	% w/v
Iron (Fe) water-soluble:	2,00	2,84
Iron (Fe) complexed by GA:	2,00	2,84
Manganese (Mn) water-soluble:	4,00	5,68
Manganese (Mn) complexed by GA:	4,00	5,68
Zinc (Zn) water-soluble:	3,00	4,26
Zinc (Zn) complexed by GA:	3,00	4,26
Complexing Agent: Gluconic Acid (GA).		
Stable in the pH range: 3 – 9.		
Anion: Sulphate		



pH = 2,5 ± 1
1 l = 1,42 kg.



Properties

NUTRIARTAL +Fe is a microelements complex with a balanced formula with iron, manganese and zinc (100% complexed), developed to be used as a source of these elements and to correct insufficiencies due to deficiencies or imbalances in the assimilation of these elements.

Thanks to its complexing agent's properties, it is quickly absorbed and assimilated by the crop. It provides a correct balance of iron, manganese and zinc to crops, increasing their potential, given that these trace elements are catalysts for respiratory reactions and intervene in photosynthesis and in several enzymatic reactions, among other processes.

Crops

NUTRIARTAL +Fe is especially recommended for citrus, but its use is indicated for all types of crops: fruit trees (pip and pit), vegetables, extensive and ornamental crops.

Doses and directions for use

Both radicular and/or foliar applications.


General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

Apply every 15 – 20 days in vegetables.

Apply it along sprouting, before blooming and at main development stages of the crop.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 4	3 - 5	2 - 4 applications
 Leaf vegetables	2 - 4	3 - 5	2 - 4 applications
 Citrus and subtropical crops	2 - 4	3 - 5	2 - 4 applications
 Fruit trees, olive trees and vines	2 - 4	3 - 5	2 - 4 applications
 Extensive and ornamental	2 - 4	2 - 3	2 - 4 applications

Compatibilities

NUTRIARTAL +Fe is compatible with most of the available fertilizers and phytosanitary products known. Do not mix with mineral oils, dinocap and alkaline reaction products.

NUTRIARTAL + Mg

Complexed magnesium, manganese and zinc

GUARANTEED CONTENTS:	% w/w	% w/v
Magnesium (MgO) water-soluble:	2,50	3,43
Magnesium (MgO) complexed by GA:	2,50	3,43
Manganese (Mn) water-soluble:	2,50	3,43
Manganese (Mn) complexed by GA:	2,50	3,43
Zinc (Zn) water-soluble:	2,50	3,43
Zinc (Zn) complexed by GA:	2,50	3,43
Complexing Agent: Gluconic Acid (GA).		
Stable in the pH range: 3 – 9.		
Anion: Sulphate		



pH = 3 ± 1
1 l = 1,37 kg.



Properties

NUTRIARTAL +Mg is a microelements complex with a balanced formula of magnesium, manganese and zinc (100% complexed), developed to be used as a source of these elements and to correct insufficiencies due to deficiencies or imbalances in the assimilation of these elements.

It provides a correct balance of magnesium, manganese and zinc to crops, increasing their potential, given that these microelements are catalysts for respiratory reactions, intervene in photosynthesis and in several enzymatic reactions, among other processes. Thanks to the properties of its complexing agent, it is quickly absorbed and assimilated by the crop.

Crops

NUTRIARTAL +Mg is especially recommended for citrus, but its use is indicated for all types of crops: fruit trees (pip and pit), vegetables, extensive and ornamental crops.

Doses and directions for use

Both radicular and/or foliar applications.






General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

Apply every 15 – 20 days in vegetables.

It is advisable to apply it during sprouting, before blooming and during the main development stages of the crop.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2,5 - 3,5	3 - 5	2 – 4 applications
 Leaf vegetables	2,5 - 3,5	3 - 5	2 – 4 applications
 Citrus and subtropical crops	2,5 - 5	3 - 5	2 – 4 applications
 Fruit trees, olive trees and vines	2,5 - 5	3 - 5	2 – 4 applications
 Extensive and ornamental	1,5 - 2	2 - 3	2 – 4 applications

Compatibilities

NUTRIARTAL +Mg is compatible with most of the available fertilizers and phytosanitary products known. Do not mix with mineral oils, dinocap and alkaline reaction products.

MICROPONIC

Mix of chelated microelements

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Boron (B) water-soluble:	0,35	0,49
Copper (Cu) water-soluble:	0,40	0,56
Iron (Fe) water-soluble:	3,50	4,87
Manganese (Mn) water-soluble:	2,50	3,48
Molybdenum (Mo) water-soluble:	0,05	0,07
Zinc (Zn) water-soluble:	3,00	4,17
Chelating Agent: HEEDTA		
Stable in the pH range: 3 – 8		

* Also available in **ECO** version (certified by ECOCERT)



pH = 2,5 ± 1
1 l = 1,39 kg.



Properties

MICROPONIC is a mix of microelements with a balanced formula and particularly rich in iron, zinc and manganese, that keeps a correct nutritional balance, avoiding imbalances or correcting microelements deficiency states. Due to its acid reaction and the properties of the chelating agent, it is rapidly absorbed and assimilated by the crop.

Crops

MICROPONIC is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.

Doses and directions for use

Both radicular and/or foliar applications.






General application rates:

Foliar: 2 – 4 l/ha and application.

Radicular: 2,5 -- 5 l/ha and application.

Apply every 15 – 20 days in vegetables.

Its application is recommended along the whole cycle, preferably at sprouting and during the stages of main development of the crop.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2,5 - 4	2 - 3	2 – 4 applications
 Leaf vegetables	2,5 - 4	2 - 3	2 – 4 applications
 Citrus and subtropical crops	3 - 4	3 - 5	2 – 4 applications
 Fruit trees, olive trees and vines	3 - 4	3 - 5	2 – 4 applications
 Extensive and ornamental	2,5 - 4	2 - 3	2 – 4 applications

Compatibilities

MICROPONIC is compatible with most fertilizers and agrochemical products known, although it is advisable to perform a previous test. Do not mix with mineral oils and alkaline reaction products.

FOLIARTAL 17-7-6 +T.E.

NPK fertilizer with micronutrients

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	14,00	17,08
Nitric Nitrogen:	1,30	1,59
Ureic Nitrogen:	12,70	15,49
Phosphorus (P ₂ O ₅) water-soluble:	6,00	7,32
Potassium (K ₂ O) water-soluble:	5,00	6,10
Contains also ≤ 0.1% w/w:		
Boron (B); Copper (Cu); Iron (Fe); Manganese (Mn), Molybdenum (Mo) and Zinc (Zn)		
Chlorides < 0,3%		



pH = 2,3 ± 1
1 l = 1,22 kg.



Properties

FOLIARTAL 17-7-6 + T.E. is an NPK liquid foliar fertilizer fastly absorbed and assimilated by the crop, rich in nitrogen and with microelements, specially designed for foliar application as a source of the elements present on its formula. Its application notably improves the vegetation of the treated crop during the first stages, promoting sprouting and supplying the necessary elements in the crop's active development periods.

FOLIARTAL 17-7-6 + T.E. is recommended as a complement for basal dressing, especially when the crop's nitrogen nutritional needs are higher, such as sprouting, pre-blooming and fruit formation.

Crops

FOLIARTAL 17-7-6 + T.E. is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both radicular and/or foliar applications.

General application rates:

Foliar: 2 – 3 l/ha and application.

Radicular: 2,5 – 5 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	1,5 - 3	2,5 - 5	2 – 3 applications since transplant
 Leaf vegetables	1,5 - 3	2,5 - 5	2 – 3 applications since transplant
 Citrus and subtropical crops	2 - 3,5	3,5 - 5	2 – 3 applications in sprouting, pre-flowering and petals fall
 Fruit trees, olive trees and vines	2 - 3,5	3,5 - 5	2 – 3 applications in sprouting, pre-flowering and setting
 Extensive and ornamental	1,5 - 3	---	2 – 3 applications

Compatibilities

FOLIARTAL 17-7-6 + T.E. is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils nor very alkaline reaction products.

FOLIARTAL 9-27-9 +T.E.

NPK fertilizer with micronutrients

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	7,00	9,24
Ammoniacal Nitrogen:	4,20	5,54
Ureic Nitrogen:	2,80	3,70
Phosphorus (P ₂ O ₅) water-soluble:	21,00	27,72
Potassium (K ₂ O) water-soluble:	7,00	9,24
Contains also ≤ 0.1% w/w:		
Boron (B); Copper (Cu); Iron (Fe); Manganese (Mn) and Molybdenum (Mo)		
Low in chloride		



pH = 6,5
1 l = 1,32 kg.



Properties

FOLIARTAL 9-27-9 +T.E. is a liquid NPK foliar fertilizer fastly absorbed and assimilated by the crop. It is rich in phosphorus and with micronutrients, and it is specially designed for foliar application as a source of the elements present on its formula. Its application notably improves the vegetation of the treated crop and supplies the necessary nutrients to promote fruits formation.

FOLIARTAL 9-27-9 +T.E. is recommended as a complement for basal dressing, especially when the crop's phosphorus nutritional needs are higher, such as pre-blooming, blooming and fruit formation.

Crops

FOLIARTAL 9-27-9 +T.E. is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both radicular and/or foliar applications.

General application rates:

Foliar: 2 – 3 l/ha and application.

Radicular: 2,5 – 5 l/ha and application.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	1,5 - 3	2,5 - 5	2 – 3 applications since transplant
 Leaf vegetables	1,5 - 3	2,5 - 5	2 – 3 applications since transplant
 Citrus and subtropical crops	2 - 3,5	3,5 - 5	2 – 3 applications in sprouting, preflowering and petals fall
 Fruit trees, olive trees and vines	2 - 3,5	3,5 - 5	2 – 3 applications in sprouting, preflowering and setting
 Extensive and ornamental	1,5 - 3	---	2 – 3 applications

Compatibilities

FOLIARTAL 9-27-9 +T.E. is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils nor alkaline reaction products.

FOLIARTAL 10-5-12 + T.E.

NPK fertilizer with micronutrients

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	8,00	9,76
Ureic Nitrogen:	8,00	9,76
Phosphorus (P ₂ O ₅) water-soluble:	4,00	4,88
Potassium (K ₂ O) water-soluble:	10,00	12,20
Contains also ≤ 0.1% w/w:		
Boron (B); Copper (Cu); Iron (Fe); Manganese (Mn) and Molybdenum (Mo)		
Low in chloride		



pH = 2,5 ± 1
1 l = 1,22 kg.



Properties

FOLIARTAL 10-5-12 + T.E. is a foliar liquid NPK fertilizer with microelements, of rapid absorption and assimilation by the crop, specially designed for foliar application as a source of the elements contained in its formula. Its application significantly improves the vegetation of the treated crop, as well as the quality, appearance, size and uniformity of fruits.

FOLIARTAL 10-5-12 + T.E. is recommended as a complement for basal dressing, especially when the nutritional needs of the crop are higher.

Crops

FOLIARTAL 10-5-12 + T.E. is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both radicular and/or foliar applications.

General application rates:

Foliar: 2 – 3 l/ha and application.

Radicular: 2,5 – 5 l/ha and application

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2,5 - 3	2,5 - 5	2 – 3 applications, fattening and ripening
 Leaf vegetables	2,5 - 3	2,5 - 5	2 – 3 applications, fattening and ripening
 Citrus and subtropical crops	2,5 - 4	3,5 - 5	2 – 3 applications, fattening and ripening
 Fruit trees, olive trees and vines	2,5 - 4	3,5 - 5	2 – 3 applications, fattening and ripening
 Extensive and ornamental	2,5 - 3	4 - 5	2 – 3 applications

Compatibilities

FOLIARTAL 10-5-12 + T.E. is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils nor alkaline reaction products.

FOLIARTAL 13-13-13 +T.E.

NPK fertilizer with micronutrients

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	10,20	13,06
Ammoniacal Nitrogen:	0,50	0,64
Ureic Nitrogen:	9,70	12,42
Phosphorus (P ₂ O ₅) water-soluble:	10,20	13,06
Potassium (K ₂ O) water-soluble:	10,20	13,06
Contains also ≤ 0.1% w/w:		
Boron (B); Copper (Cu); Iron (Fe); Manganese (Mn), Molybdenum (Mo) and Zinc (Zn)		
Low in chloride		



pH = 8 ± 1
1 l = 1,28 kg.



Properties

FOLIARTAL 13-13-13 + T.E. is a liquid foliar fertilizer that provides the elements nitrogen, phosphorus and potassium in a highly balanced way to the plant. It can be mixed with water in any proportion without leaving any residue, and can be applied using any irrigation system

FOLIARTAL 13-13-13 + T.E. is recommended as a complement to basal dressing, particularly in times when the crop nutrients' needs are higher like pre-flowering, fruit setting and fruit formation.

Crops

FOLIARTAL 13-13-13 + T.E. is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both radicular and/or foliar applications.

General application rates:

Foliar: 2 – 3 l/ha and application

Radicular: 2,5 – 5 l/ha and application

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2,5 - 4	2,5 - 5	2 – 3 applications since transplant
 Leaf vegetables	2,5 - 4	2,5 - 5	2 – 3 applications since transplant
 Citrus and subtropical crops	2,5 - 5	3,5 - 5	2 – 3 applications in sprouting, pre-flowering and petal fall
 Fruit trees, olive trees and vines	2,5 - 3	3,5 - 5	2 – 3 applications in sprouting, pre-flowering and setting
 Extensive and ornamental	1,5 - 3	4 - 5	2 – 3 applications

Compatibilities

FOLIARTAL 13-13-13 + T.E. is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils nor alkaline reaction products.

FOLIARTAL K50

Potassium solution

GUARANTEED CONTENTS:	% w/w	% w/v
Potassium (K ₂ O) water-soluble:	33,00	50,16
Chlorides < 0,3%		



pH = 11,4 ± 1
 1 l = 1,52 kg.



Properties

FOLIARTAL K-50 is a liquid foliar fertilizer of fast absorption and assimilation by the crop; it is rich in potassium and specially developed as a source of this. Thanks to the elements in its formula, the absorption and assimilation of potassium is enabled. Its application enhances the quality, appearance, size and uniformity of fruits.

FOLIARTAL K-50 is recommended as a complement for basal dressing, particularly when the crop's potassium nutritional needs are higher, such as sprouting, fattening and ripening of the fruits. Its application is also recommended whenever it is needed to correct insufficiency states due to deficiency or imbalance in the assimilation of potassium.

Crops

FOLIARTAL K-50 is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops






Doses and directions for use

Both radicular and/or foliar applications.

General application rates:

Foliar: 2 - 3 l/ha and application

Radicular: 2,5 - 5 l/ha and application

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	2 - 2,5	2,5 - 5	2 - 3 applications from setting
 Leaf vegetables	2 - 2,5	2,5 - 5	2 - 3 applications from setting
 Citrus and subtropical crops	2,5 - 3	3,5 - 5	2 - 3 applications in fattening and ripening
 Fruit trees, olive trees and vines	2,5 - 5	3,5 - 5	2 - 3 applications in fattening and ripening
 Extensive and ornamental	1,5 - 2	---	2 - 3 applications

Compatibilities

FOLIARTAL K-50 is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, sulphates nor acid reaction products.

FOLIARTAL N30

Nitrogen with micronutrients

CE

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	24,00	29,88
Ammoniacal Nitrogen:	6,00	7,47
Nitric Nitrogen:	6,00	7,47
Ureic Nitrogen:	12,00	14,94
Contains also $\leq 0.1\%$ w/w:		
Boron (B); Copper (Cu); Manganese (Mn), Molybdenum (Mo) and Zinc (Zn)		



pH = 7,5 \pm 1
 1 l = 1,245 kg.



Properties

FOLIARTAL N30 is a liquid fertilizer rich in nitrogen with trace elements, recommended as a complement to basal dressing and in fertigation, indicated in the prevention and control of deficiencies or imbalances in the assimilation of nitrogen.

It favours the vegetative development and as it contains nitrogen in 3 different forms, the supply, as well fast (nitric) as prolonged (ammoniacal and ureic) is guaranteed.

Crops

FOLIARTAL N30 is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops

Doses and directions for use






Both radicular and/or foliar applications.

General application rates:

Foliar: 3 – 5 l/ha and application, 2 or 3 applications

Radicular: 2,5 – 5 l/ha and application, 2 or 3 applications

It is particularly recommended when the crop needs more nitrogen input, such as active growth stages.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	3 - 4	2,5 - 4	2 - 3 applications
 Leaf vegetables	3 - 4	2,5 - 4	2 - 3 applications
 Citrus and subtropical crops	3,5 - 5	3,5 - 5	2 - 4 applications
 Fruit trees, olive trees and vines	3,5 - 5	3,5 - 5	2 - 3 applications
 Extensive and ornamental	3 - 4	---	2 - 3 applications

Compatibilities

FOLIARTAL N30 is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils or alkaline reaction products. Do not mix with other NPK fertilizers in fertirrigation

FOLIARTAL Boron

Boron deficiency corrector

CE

GUARANTEED CONTENTS:	% p/p	% p/v
Boron (B) water-soluble:	10,00	13,20
Boron Ethanolamine		



pH = 7,5 ± 1
1 l = 1,32 kg.



Properties

FOLIARTAL Boron is a liquid foliar fertilizer rich in boron, that is quickly absorbed and assimilated by the crop. It has been specially developed as a source of this element. Its application stimulates the growth of cambium tissues and apical meristems; it promotes calcium mobility and assimilation, as well as pollen production and fertilization.

FOLIARTAL Boron is recommended for the preventive and curative control of insufficiency states due to deficiency or imbalance in the assimilation of boron.

Crops

FOLIARTAL Boron is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Both radicular and/or foliar applications.

General application rates:

Foliar: 2,5 – 5 l/ha and application

Radicular: 4 – 5 l/ha and application

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Fruit vegetables	1,5 - 3	2,5 - 5	2 - 3 applications since transplant
 Leaf vegetables	1,5 - 3	2,5 - 5	2 - 3 applications since transplant
 Citrus and subtropical crops	2 - 3,5	3,5 - 5	2 - 3 applications in sprouting, preflowering and petals fall
 Fruit trees, olive trees and vines	2 - 3,5	3,5 - 5	2 - 3 applications in sprouting, preflowering and setting
 Extensive and ornamental	1,5 - 3	---	2 - 3 applications

Compatibilities

FOLIARTAL Boron is compatible with most phytosanitary products known, except mineral oils, alkaline reaction products, calcium salts, sulphates and products containing these elements. It is advised to apply alone or carry out a previous test.

FOLIARTAL L - 24 CE

Foliar Calcium & Boron – Special post-harvest

GUARANTEED CONTENTS:	% p/p	% p/v
Calcium (Ca) water-soluble:	18,20	24,75
Boron (B) water-soluble:	0,14	0,19



pH = 4,6
1 l = 1,36 kg.



Properties

FOLIARTAL L - 24 is a liquid foliar fertilizer of fast absorption and assimilation by the crop; rich in calcium and with boron, it is specially developed as a source of these elements. Its application promotes the quality of the fruits and prevents nutritional imbalances due to calcium deficiency. It is recommended as a complementary source of calcium and boron for those crops needing large inputs of these nutrients. It avoids BITTER PIT in apple trees, fruit cracking and blossom end rot in vegetables crops.

Crops

FOLIARTAL L - 24 is recommended for all types of crops: fruit trees (pip and pit fruits), citrus, vegetables, extensive and ornamental crops.






Doses and directions for use

Foliar application.

General application rates:

Foliar: 2,5 – 5 l/ha and application.

In Post-harvest: apply by Dréncher at a rate of 5 l in 1000l of water keeping the fruit in contact with the solution for 20 – 40 seconds.

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Foliar	
 Fruit vegetables	2,5 - 3,5	4 – 5 applications from setting
 Leaf vegetables	2,5 - 3,5	4 – 5 applications from setting
 Citrus and subtropical crops	3 - 5	4 – 5 applications from setting
 Fruit trees, olive trees and vines	3,5 - 5	4 – 5 applications from setting
 Extensive and ornamental	2,5 - 3,5	4 – 5 applications from setting

Compatibilities

FOLIARTAL L - 24 is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, nor alkaline reaction products.

ARTAL Vine

Special fertilizer for Vines

GUARANTEED CONTENTS:	% w/w	% w/v
Free Amino acids:	5,00	6,50
Total Nitrogen (N):	1,60	2,08
Organic Nitrogen:	0,60	0,78
Ammoniacal Nitrogen:	1,00	1,30
Magnesium (MgO) water-soluble:	1,00	1,30
Complexed Magnesium (MgO) by AG	1,00	1,30
Boron (B) water-soluble	0,50	0,65
Copper (Cu) water-soluble	0,20	0,26
Iron (Fe) water-soluble	2,00	2,60
Complexed Iron (Fe) by AG	2,00	2,60
Manganese (Mn) water-soluble	0,10	0,13
Present Amino acids:		
ALA – ARG – ASP – GLU (1,9%) – GLY – HIP – ILE – LEU – LYS – PHE		
PRO – SER – THR – VAL		



pH = 2,5 ± 1
1 l = 1,3 kg



Properties

ARTAL Vine is a fertilizer with a high stimulating power, with a formula based on amino acids obtained by acid hydrolysis of proteins and microelements. It is particularly developed to meet the nutritional demands and stimulate the physiological processes of vineyards (especially flowering and fruit setting).

Crops

ARTAL Vine is a product particularly formulated to be applied on vines.

Doses and directions for use

Both radicular and/or foliar applications.


General application rates:

Foliar: 2,5– 5 l/ha and application

Radicular: 4 – 6 l/ha and application

is indicated for vineyard application throughout the crop cycle, being recommended above all in pre-flowering and after setting as well as to overcome moments of stress: pests, diseases, hail ...

Foliar application is recommended although it can also be applied by any irrigation system.

CROP	DOSES l/ha		APPLICATIONS / FREQUENCY
	Foliar	Radicular	
 Viña	2,5 - 5	4-6	2-4 applications in preflowering, setting and after periods of stress

Compatibilities

ARTAL Vine, because of its acid pH, is compatible with most of phytosanitary products known except mineral oils, sulphur and cupric broths. A previous test is always recommended.

ARTAL Grain

Special fertilizer for extensive crops

GUARANTEED CONTENTS:	% w/w	% w/v
Free Amino acids:	10,00	12,20
Total Nitrogen (N):	3,00	3,66
Organic Nitrogen:	3,00	3,66
Boron (B) water-soluble:	1,00	1,22
Molybdenum (Mo) water-soluble:	1,00	1,22
Zinc (Zn) water-soluble:	0,50	0,61
Present Amino acids:		
ASP – SER – GLU (2,5%) – VAL – GLY (5%) – HIS – ALA –		
LYS (2%) – ILE – LEU		



pH = 5,5
1 l = 1,22 kg.



Properties

ARTAL Grain is a liquid foliar fertilizer based on free amino acids, nitrogen and microelements specially selected to favour the vegetative growth. It can be applied throughout the growing cycle, especially in those moments where there is a greater energy expenditure and to recover plants from a stressful situation.

ARTAL Grain is recommended to:

- Improve crop yield and quality
- Provide micronutrients
- Enhance resistance to stress

Crops


ARTAL Grain has been specially developed for extensive crops: soybean, corn, wheat, sorghum, sunflower, sugar cane, rice, etc..

Doses and directions for use

Foliar application.

General application rates:

Foliar: 1 - 2,5l/ha in 1-2 applications

CROP	DOSES l/ha	APPLICATIONS / FREQUENCY
	Foliar	
 Extensive crops	1 - 2,5	1st Treatment: At tillering stage 2nd Treatment: In preflowering

Compatibilities

ARTAL Grain, is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to apply alone, or to make a previous test. Do not mix with oils, alkaline nor cupric solutions, except on olive trees, where it can be used together with copper. Do not apply on plum trees and cut flowers.

REDUCTAL Plus

pH reducer with surfactant effect

GUARANTEED CONTENTS:	% w/w	% w/v
Total Nitrogen (N):	3,00	3,45
Ureic Nitrogen:	3,00	3,45
Phosphorus (P ₂ O ₅) water-soluble:	15,00	17,25



pH = 2
1 l = 1,15 kg.



Properties

REDUCTAL Plus is a pH reducer based on nitrogen and phosphorus that can also be used as adjuvant for the preparation of the broths used in foliar treatments when the waters are of alkaline pH.

REDUCTAL Plus has 3 main effects:

1. **WATER CONDITIONER (acidifying):** Provides a quick and effective reduction in the acidity of fertilizers and/or pesticides broths.
2. **SURFACTANT:** Reduces the surface tension of the drop, improving the penetration of sprayed broths.
3. **ENHANCER OF PHYTO APPLICATIONS:** Increases assimilation and effectiveness of active matters employed

Crops

REDUCTAL Plus is recommended for all crops: fruit trees (pip and pit), citrus, vegetables, extensive and ornamental crops.

Doses and directions for use

1. Add water to the tank up to 3/4 of the volume.
2. Add REDUCTAL Plus until the optimum pH is reached.
3. Add the products to apply.
4. Complete the volume of water to the final measure, stir the mixture to start the application.

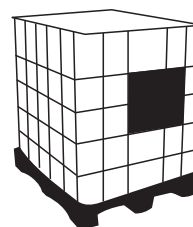
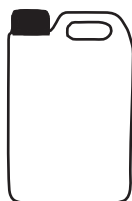
Initial PH	Desired end pH	Doses ml/1000L
10	9	50 - 100
9	8	100 - 150
8	7	200 - 250
7	6	300 - 350
6	5,5	250 - 300
5,5	5	100 - 150

Compatibilities

REDUCTAL Plus is compatible with most of the available fertilizers and phytosanitary products known, even though it is advisable to perform a previous test. Do not mix with mineral oils, very alkaline reaction products nor calcium products.

LOGISTICS

PACKAGING



	1 L	5 L	20 L	1.000 L
Capacity	1 L	5 L	20 L	1.000 L
Units/box	12x1	4x5	-----	-----
Units/pallet	720	160	32/48	1
Boxes/pallet	60	40	-----	-----
Litres/pallet	720	800	640/960	1.000
Boxes sizes (mm)	365x270x273	390x270x310	-----	-----
Pallets sizes (mm)	1200x1000x1800	1200x1000x1415	1200x1000x910/1295	1200X1000X1170



www.artal.net

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