



BIO STIMULANT
and FERTILIZERS
FLUID ORGANIC



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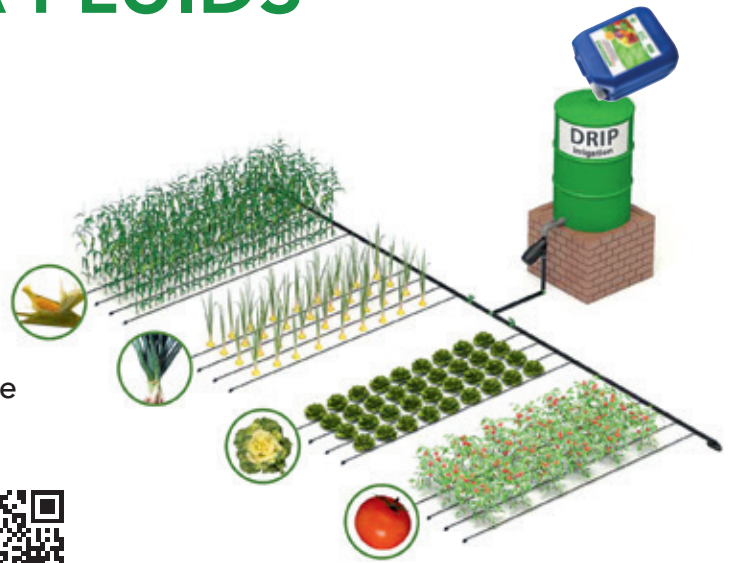
GRENA FLUIDS

FERTIGATION AND FOLIAR USE

Grena liquid products can be easily used for fertigation and foliar use, depending on crops, nutritional needs, deficiencies, or stress.

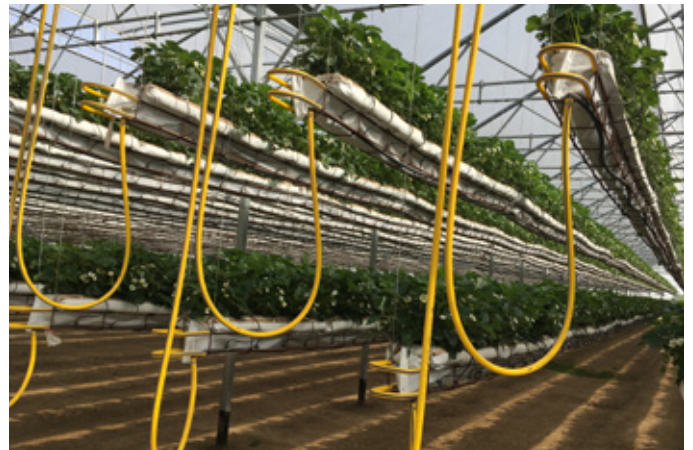
HIGH MIXABILITY

Grena liquid products are compatible and mixable with the products used in the defense plans.



See the video on our youtube channel **GRENA FERTILIZZANTI**

<https://youtu.be/HL2EyLFif1Y>



WHY ARE POLYAMINES SO IMPORTANT?



An increased presence of polyamines gives better resistance to stress caused by drought and especially in soils with high salinity. They are excellent in cases of post-transplant stress and also in case of adverse climatic conditions (radical asphyxia, frost, hail, and weeding).



They play a key role in the correct development of the structure of the flower promoting cell division, growth and maturation of the reproductive organs as well as of the fruit.



Increased flower attractiveness to pollinators.



Showing repellent qualities to mammals such as deer and boar.



Increases the natural production of phytoalexins, the true immune system of the plant against pathogen attacks.

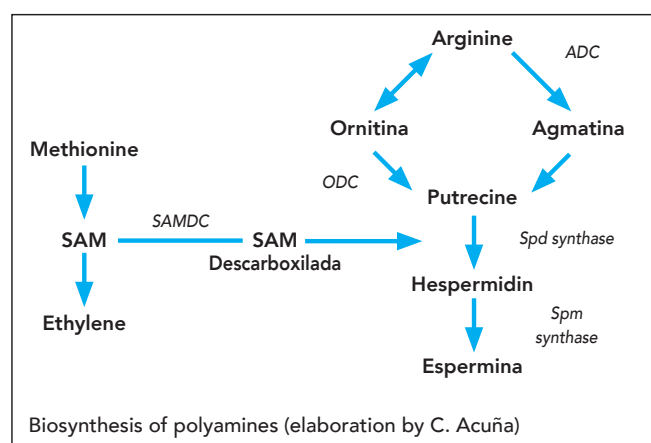


POLYAMINES LIQUID EXTRACT

A research carried out by Catalina Acuña at the University of Costa Rica highlights the importance of polyamines as essential molecules for plant development.

But what is the origin of polyamines?

They are molecules biosynthesized from amino acids: when an amino acid is broken down, the resulting molecules are polyamines. In IDROGRENA, we find the presence of 2-PHE and Spermine. 2-Phenylethylamine is biosynthesized from the phenylalanine amino acid, while spermine is biosynthesized from the arginine amino acid.



EFFECTS OF POLYAMINES

It is the natural presence of organic polyamines within its composition that makes the liquid extract GRENA a biostimulant.

The polyamines present as Phenylethylamine derived from the amino acid Phenylalanine, it provides and amplifies the properties, this also applies to spermine, deriving from the amino acid Arginine, so we will have as positive effects: resistance to environmental stress, root development, nitrogen reserve, flavouring, colouring, regulation of the opening of the stomata, antioxidant capacity.



Recent studies on polyamines show that they are used by the plants themselves in situations of stress, the spermine represents an essential factor of growth.

It is responsible for transmitting the defense activation signal against pathogens.

One of the main lines of plant defense is represented by phytoalexins, compounds derived from fungotoxics and synthesized ex novo by plants to eradicate pathogenic infections; they are therefore already present in plants in good health and in the absence of diseases.

Therefore, by stimulating a higher production of phytoalexin, the Grena liquid extract strengthens the immune system of plants. In fact, polyamines contribute positively to the development and ripening process of the fruit, ensuring a healthy and robust crop growth.

GRENA liquid products are ideal for any nutritional deficiency,
find the one that best suits your crop and...

IMPROVE YOUR HARVEST

A HELP FOR THE

FLOWERING

FRUIT SETTING

HIGH MIXABILITY

DISERBO

GREATER RESISTANCE AGAINST

WIND STRESS

CLIMATIC CHANGES

THE RISK OF ROOT ASPHYXIA

FROST or HAILSTORM



POLYAMINES ARE BOOKMARKS IN THE GENETIC CODE

All processes in the plant are directed by the DNA library contained in the cellular nuclei. Polyamines fulfill an essential stabilizing function when the genetic code is copied, read or interpreted such as during plant growth, the development of flowers and fruit as well as crucial adaption to environmental stress.

Polyamine action can be compared to the work of an attentive librarian: placing bookmarks in the chapters currently relevant, taking important paragraphs to the printer and making sure the copies are good. In terms of molecular cell biology, polyamines are involved in "DNA stabilization, chromatin modulation, transcription, mRNA stabilization and translation".

Suffice to understand that maintaining their polyamine-librarians costs the plant energy and protein building blocks (amino acids), a regular application of Idrogrena reduces the plant investment and will have a noteworthy effect when the plant is under stress.

IDROGRENA Universal

ORGANIC LIQUID NITROGEN BIOSTIMULANT



RICH IN POLYAMINES



IDROGRENA is recommended for water anti-stress, carrier in protective treatments in soilless crops

**FREE FROM PHOSPHITES,
HEAVY METALS and
CHROMIUM VI**

SOURCE
Polyamine liquid extract

SPECIFIC WEIGHT: 1.032 g/l

Density: watery fluid
Colour: brown

Packaging available:
5 L - 25 L - 200 L - 1000 L



IDROGRENA is a fluid organic biostimulant rich in **polyamines (2-Phe and spermine)**. The effectiveness of the product is given by the rapid availability of organic compounds which can be immediately absorbed by the plant as well as by the useful microorganisms at root level.

IDROGRENA is therefore considered ideal for use in foliar and irrigation applications (e.g. drip irrigation). **The polyamines, once in contact with the roots, promote cellular reproduction and the issue of numerous secondary roots.**

The distillation process makes it **free of salts and creates no phytotoxicity.**

IDROGRENA ensures a constant and balanced biostimulation of crops for all the vegetative-productive arc, stimulating the plant immune system with a higher production of phytoalexin by the plant.

Polyamines in IDROGRENA perform key role, including **anti-stress effect**:

- post transplantation,
- water,
- radical asphyxia,
- environmental adversity (frost and hail),
- increase of the Brix (°Bx).

IDROGRENA used as a carrier in weeding anticipates the times and allows better final control of the most resistant species.

ORGANIC POLYAMINES

6 mg/kg

MESO- AND MICRO-ELEMENTS NATURALLY PRESENT IN THE LIQUID MATRIX

Boron (B)	0,1 mg/kg
Calcium (Ca)	24,2 mg/kg
Iron (Fe)	22,5 mg/kg
Magnesium (Mg)	4,9 mg/kg
Manganese (Mn)	0,1 mg/kg
Copper (Cu)	0,1 mg/kg
Zinc (Zn)	1,5 mg/kg



CROP	TIMING*	DOSAGE/HA per application*
All the crop	pre-flowering to harvest every 20 days (min. 3/4 applications)	5-6 L/ha 10-12 L/ha
Hydroponic and substrate cultures	pre-flowering throughout the entire production cycle	5-6 L/ha

ENERGY Micro Mix IDROGRENA



WITH MESO- AND MICRO-ELEMENTS

**FLUID ORGANIC BIOSTIMULANT
ENRICHED WITH MESO- AND MICRO-ELEMENTS**



ENERGY IDROGRENA has high mixability. It attracts pollinating insect and is particularly suitable in pre-flowering and fruit set

ENERGY is a liquid extract with polyamines, **naturally biostimulant**, enriched with meso- and micro-elements.

Unique in the liquid landscape for the co-presence of 1% Calcium and Iron and biogenic amines, which exert a complexing power towards micro-elements.

Boron (B) intensifies the assimilation and translocation of micro-elements already activated by the EDTA agent, in order to activate fundamental metabolic processes at the base of plant welfare.

ENERGY is an excellent carrier of products with foliar action and helps increase physiological activities of the plant.

Metabolic processes, phenological phases and specific actions of micro-elements:

- **Fe + Ca, (1% EDTA)**, respiration, chlorophyll, photosynthesis, nitrogen fixation, metabolism of protein, nitrate reduction, increased tissue resistance;
- **Zn, (0,5% EDTA)**, auxin metabolism, germination, pigment synthesis and fruit colouring;
- **B, (0,5%)** pollen granule development, fruit set, cell division, metabolism of phytohormones, meristematic growth, protein synthesis, sugar transport.

**FREE FROM PHOSPHITES,
HEAVY METALS and
CHROMIUM VI**

SOURCE

Polyamine liquid extract

SPECIFIC WEIGHT: 1.12 g/l

Density: watery fluid

Colour: dark red

Packaging available:

5 L - 25 L - 200 L - 1000 L



ORGANIC POLYAMINES

6,6 mg/kg

MESO- AND MICRO-ELEMENTS NATURALLY PRESENT IN THE LIQUID MATRIX

Boron (B)	0,1 mg/kg
Calcium (Ca)	24,2 mg/kg
Iron (Fe)	22,5 mg/kg
Magnesium (Mg)	4,9 mg/kg
Manganese (Mn)	0,1 mg/kg
Copper (Cu)	0,1 mg/kg
Zinc (Zn)	1,5 mg/kg



CROP	TIMING*	DOSAGE/HA per application*
All the crops	alongside protection treatments	3 L/ha (250-300 cc/100 L of water)
Atmospheric adversity (frost, hailstorm, drought etc.)	a few days before or immediately after the atmospheric event	3 L/ha

IDRO K GRENA



WITH 7% OF K₂O

**ORGANO-MINERAL LIQUID FERTILIZER
WITH NATURAL BIOSTIMULANT POLYAMINES**



IDRO K GRENA have high mixability, with 7% of potassium and is an help for the floration and ripening

IDRO K GRENA is a product that combines the biostimulating properties of polyamines along with the nutritional properties of Potassium. As the use of Potassium is allowed in Organic Agriculture, therefore applications of IDRO K GRENA is possible on all crops whether in conventional or organic farming.

Polyamines play an important role within the plant in different stages such as: cell multiplication, growth, flowering and fruit ripening.

On the other hand, potassium plays a primary role in the formation of proteins and blooming, while during the maturation processes it increase the fruit quality, taste, colour and consistency of the fruit texture.

Polyamines together with Potassium are considered to be important in the plant responses against environmental stress.

For these reasons IDRO K GRENA can be introduced as an important product that can be used in many phenological phases like: **flowering and ripening**, in addition to its assistance to the plant in the osmoregulation of stomata.

Last but not least role of IDRO K GRENA is to enhance the translocation of assimilated sugars between the plant organs. The effectiveness of the product is linked to the rapid availability of the organic compounds that they can be immediately absorbed by the plant.

IDRO K GRENA can be more effective by using in foliar applications.

ORGANIC POLYAMINES

11 mg/kg

COMPOSITION

Total Nitrogen (N)	3%
Potassium oxide (K ₂ O) soluble in water low chlorine content	7%

MESO- AND MICRO-ELEMENTS NATURALLY PRESENT IN THE LIQUID MATRIX

Boron (B)	0,1 mg/kg
Calcium (Ca)	24,2 mg/kg
Iron (Fe)	22,5 mg/kg
Magnesium (Mg)	4,9 mg/kg
Manganese (Mn)	0,1 mg/kg
Copper (Cu)	0,1 mg/kg
Zinc (Zn)	1,5 mg/kg

SOURCE
Polyamine liquid extract

SPECIFIC WEIGHT: 1.12

Density: watery fluid
Colour: cloudy

Packaging available:
5 lt - 25 lt - 200 lt - 1000 lt



CROP

TIMING*

DOSAGE/HA per application*

All the crops	flowering to ripening (2/4 treatments)
Cereal crops	from mid-cycle to maturation (1/2 treatments)

3-5 L/ha

8 L/ha

IDROGRENA PLUS

ORGANO-MINERAL LIQUID FERTILIZER
WITH BIOSTIMULANT POLYAMINES



ANTISTRESS



IDROGRENA PLUS has high
mixability, with 8% of nitrogen

FREE FROM PHOSPHITES,
HEAVY METALS and
CHROMIUM VI

SOURCE

Polyamine liquid extract
and urea

SPECIFIC WEIGHT: 1.036

Density: watery fluid
Colour: cloudy

Packaging available:
5 lt - 25 lt - 200 lt - 1000 lt



IDROGRENA PLUS is a liquid organo-mineral **rich in biostimulant polyamines**.

The efficacy of the product is linked to the rapid availability of organic compounds that can be immediately absorbed by the plant and microorganisms useful at the root and soil level. IDROGRENA PLUS is used effectively by foliar applications, **polyamines promote cell reproduction**. If used in a preventive way, Idrogrena Plus **can lower the cryoscopic point** by about 3-4° C and then together with the other systems used, frost-free or rising temperatures with heat, can preserve crops from more serious damage.

The most effective moment of application is certainly a few days before the frost, but its action is also expressed during the frost, if done with timely interventions, such as the morning after the frost, when the temperature returns to be higher than 0, and so on until the end of the frost.

IDROGRENA PLUS stimulates the plant's immune system. This effect of IDROGRENA PLUS is also expressed in a higher production of phytoalexin by the plant itself.

This property makes IDROGRENA PLUS **a useful product for the production of flowering plants and cut flowers**, ensuring a longer flowering life.

The distillation process makes the concentrated product free from salts and does not create phytotoxicity.

The polyamines have important roles and physiological stimulation properties:

- **adverse environmental conditions (frosts, hailstorms);**
- **water stress / or radical asphyxiation status;**
- **weed stress;**
- **crop post-transplant stress;**
- **root proliferation;**
- **growth of microflora in the vicinity of the roots;**
- **availability of nutrients.**

ORGANIC POLYAMINES

30 mg/kg

COMPOSITION

Total Nitrogen (N) 8%

MESO- AND MICRO-ELEMENTS NATURALLY PRESENT IN THE LIQUID MATRIX

Boron (B)	0,1 mg/kg
Calcium (Ca)	24,2 mg/kg
Iron (Fe)	22,5 mg/kg
Magnesium (Mg)	4,9 mg/kg
Manganese (Mn)	0,1 mg/kg
Copper (Cu)	0,1 mg/kg
Zinc (Zn)	1,5 mg/kg



APPLICATION	TIMING*	DOSAGE/HA per application*
All the crops	for through the entire production cycle	2,5 L/ha
Greenhouse vegetable crops	for through the entire production cycle	5 L/ha 10 L/ha
Greenhouse flower crops	for through the entire production cycle	5 L/ha 10 L/ha
Atmospheric adversity (frost, hailstorm, drought etc.)	a few days before or immediately after the atmospheric event	6-8 L/ha