GRENA®

CATALOGUE

ORGANIC

BIOSTIMULANTS and FERTILIZERS

ORGANIC BIOSTIMULATION WITH AMINO ACIDS AND POLYAMINES

WHO ARE WE?

GRENA REPRESENTS A UNIQUE REALITY IN THE ITALIAN LANDSCAPE FOR THE PRODUCTION OF ORGANIC FERTILIZERS, ORGANO-MINERAL FERTILIZERS AND BIOSTIMULANTS BASED ON AMINO ACIDS, PEPTIDES AND POLYAMINES

Unique for the processing system: **THP® (Thermal Hydrolysis Process)**

Unique for the use of renewable sources: **organic substance of animal origin**

Unique for the amount of amino acids present: **biostimulants by nature**

Unique for polyamines contained: **natural antistress**

Unique for the results obtained: **growth, quantity, and taste**

These 5 items represent the solid foundations of Grena products, something to always rely on when recommeding products for different crops.
In particular, always specify that the **THP® processing system stands for thermal hydrolysis; therefore, it is a guarantee that no chemical element enters the production cycle, but it is pure and simple wet cooking** of the organic matrix.

ECO-CERTIFICATION & AUTHORIZATION

GRENA s.r.l. applies the production methods for use in organic farming laid down in the European Commission (EC) Regulation No. 834/2007 and No. 889/2008 with any subsequent amendments and additions.

Our products undergo annual certification and are thus listed in the major inputs lists for organic farming: Agrios, FiBL, InfoXgen, BCS Öko-Garantie, ECOCERT, IMO Control and SHC.

GRENA is present in most of Europe, and also in Bosnia and Herzegovina, Serbia, Morocco, Lebanon, Iran, and in the Dominican Republic. We are always exploring new international markets; if you are interested, get in touch!

Analyses, authorizations and certification documents are available upon request.

The company is part of the task group "Organic and organo-mineral fertilizers and soil amendments" in the association of Italian fertilizer producers (Assofertilizzanti) inside the federation of chemical industries in Italy (Federchimica).

All listed products are authorized by the Ministry of Health and of Agricultural, Food and Forestry Policies (MIPAAF, Italy: Registration No. 255/07).
The GRENA fertilizer production plant is compliant with and registered under EC Regulation No. 1069/09:

- production facility: ABP58PROCP2;
- technical products: ABP58UFERT2.

The information provided in this catalogue serves as guidelines only. For the correct use of our products, please consult a specialist and always read the care instructions on the labels. While GRENA s.r.l. guarantees the quality of its products if correctly stored and with the packaging intact, the company is not liable for any damages or partial results deriving from incorrect use, or any use that is not in compliance with the guidelines of Good Agricultural Practice (GAP) and/or any use which is inconsistent with the recommended instruction.

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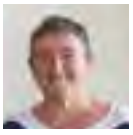

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WHY USE GRENA® PRODUCTS?

FOR SUSTAINABLE AGRICULTURAL PRODUCTION

Farming is going through one of its toughest moments: the market requests increasingly higher product quality in terms of taste and sustainability while continued synthetic fertilizer overuse has deteriorated soil health and quality. In light of new, responsible environmental regulations the challenge in modern agriculture is still to produce "bigger and better", but in a sustainable fashion. GRENA organic biostimulants with fertilizer function:

- convey macro and microelements in a ecosystem-compatible way and activate the soil's natural regeneration from the get-go without compromising on yield
- mediate a diverse supply of organic matter activating the microflora of the root zone to guarantee natural authenticity of aromas
- integrate perfectly into existing agricultural practice.

FOR THE FOCUS ON RENEWABLE SOURCES

Over the past few years, GRENA has worked tirelessly to make the production of our fertilizers sustainable.
The effort, both of economic resources and of human capital, has been and continues to be considerable, but it goes hand in hand with our wish for constant improvement. We can guarantee an environmentally sustainable production.
Something that has never changed is our focus on the use of renewable resources, **in full compliance with the principles of the circular economy:** as the organic substance of animal origin from which all Grena products originate.

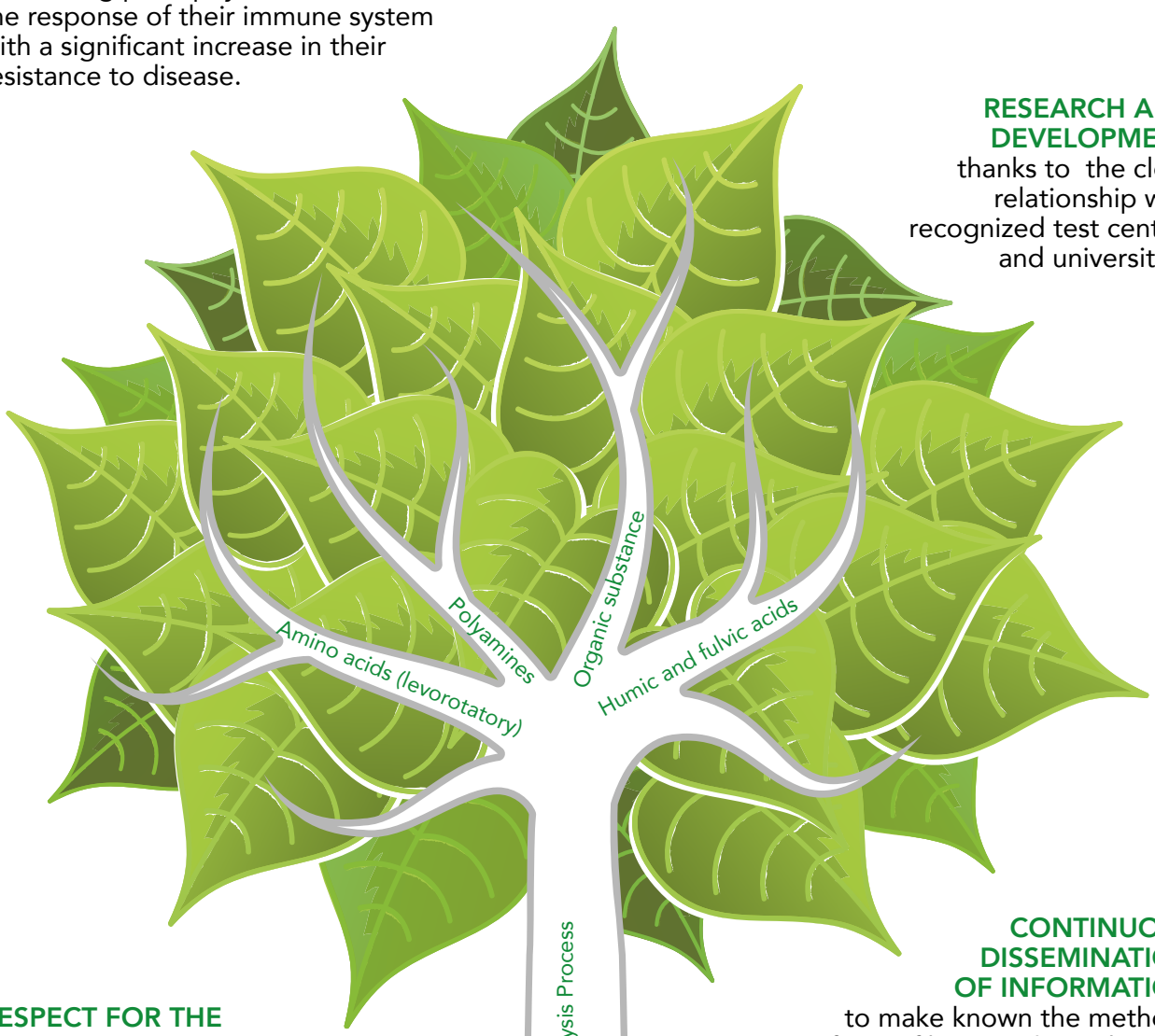
FOR PRODUCTS OBTAINED USING TECHNIQUES WITH LOW ENVIRONMENTAL IMPACT

In Grena, we give great importance to reducing emissions into the atmosphere through rigorous and constant controls of the efficiency of our production.
The thermal energy needs of the production, according to the THP® Grena method, are satisfied by clean sources. Furthermore, excess thermal energy is shared via district heating lines to the surrounding structures.

GRENA MISSION

INNOVATION IN ORGANIC FERTILIZATION
products that ensure bigger and better yield while respecting nature using lower doses or that, intervening in stressful situations and stimulating plant phytoalexins, increase the response of their immune system with a significant increase in their resistance to disease.

RESEARCH AND DEVELOPMENT
thanks to the close relationship with recognized test centres and universities.



RESPECT FOR THE ENVIRONMENT
through technologically advanced systems, rigorous control of emissions, waste prevention systems and constant checks and analyzes.

CONTINUOUS DISSEMINATION OF INFORMATION
to make known the methods of use of biostimulants through conferences and meetings and bring the agricultural world closer to university research for a rational use of resources in agriculture.

THP® Thermal Hydrolysis Process of proteins

Organic matter of animal origin, thoroughly selected at the source for a mixture of organic elements, in order to obtain the maximum number of amino acids and peptides

THE GRENA METHOD

THP® (THERMAL HYDROLYSIS PROCESS)
ETHP® (EVAPORATION THERMAL HYDROLYSIS PROCESS)

THE IMPORTANCE OF THE HYDROLYSIS OF PROTEINS to obtain amino acids and polyamines in a natural way without the addition of any chemical and ensuring the absolute absence of antibiotics, infesting seeds, pathogenic germs.

The Grena production process (THP®) by **wet thermal hydrolysis** is based on the European directives rendered in Reg. 1069/2009 of the Italian law.
The heat treatment of the organic matter of animal origin is carried out in autoclaves that use indirect steam as a thermal vector. It is precisely through these cooking and cooling cycles (for the duration of five hours) and subsequent sterilization (133°C at 3 bar pressure) that hydrolysis takes place. It releases amino acids and peptides from large proteins while the applied thermal energy assists the formation and extraction of polyamines.
The subsequent aggregation of some amino acids produces the formation of peptides and carboxylic groups then found in Grena products.
During the thermal process, the moisture present in the cooking liquid evaporates (ETHP®). Autoclaves are kept in a slight depression by suction of the condensed steam (cooling and/or pyrolysis) to obtain the finished liquid product: **liquid extract of polyamines.**

Quality control check-up: at GRENA, incoming raw materials as well as our own finished products are subject to continuous monitoring through weekly analyses that are carried out in certified and accredited external laboratories. (Accredia - the Italian Certification Body).

STRENGTHS OF ORGANIC SUBSTANCE

In addition to organic nitrogen, GRENA products are characterized by the presence in percentage of macro-elements of organic origin, such as phosphorus (from animal residues, especially fish), and Potassium and meso-elements like calcium (derived from eggshells), and **micro-elements such as Iron, magnesium, manganese, molybdenum, copper and boron, naturally occurring** in mg/kg.

The main strength:

1. The basic organic matrix **contains amino acids, which are derived from protein hydrolysis.** Amino acids are an excellent nutrition for the soil flora and therefore using them allows micro-organisms living in soil to ensure its vitality.

2. **The mode of action in the soil: nutrients are released gradually,** this is the case with nitrogen that needs the carbonization of the organic substance, which is constant and gradual, to be released.

3. **They do not compound salinity** that could cause crop problems (especially with vegetables, such as salads, or strawberries).

4. **The humidity is at 7%**, to obtain a good pellet product.

5. Most of them are available also in the micro version.

6. Fortnightly analysis and monitoring of incoming materials **guarantee the absence of antibiotics, infesting seeds and pathogenic germs** thanks to the autoclave cooking.

7. **GRENA Organic fertilisers, solid and liquid biostimulants, and organic organo-minerals do not contain phosphites.**

GRENA FERTILIZERS CONTAIN NATURALLY BIOSTIMULATING AMINO ACIDS

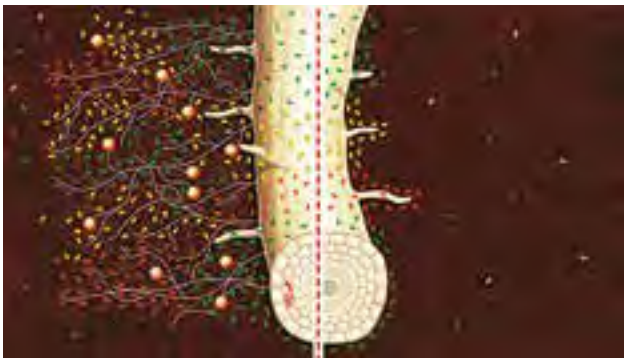
The main activities that make amino acids biostimulants:

1. **Increase root proliferation,** promoting the synthesis of plant hormones and different symbiotic processes (e.g. root nodules, mycorrhizae) which contribute to the growth of the root system and consequently increase the plant's capacity of anchoring and absorbing nutrients.

2. **Increase the chelating effect** in relation to macro-elements (N, P, K), meso- (Mg, Ca) and micro-elements (B, Co, Cu, Fe, Mn, Mo, Zn) present in the soil or provided by GRENA fertilizer, **to facilitate root absorption.**

3. **Feed plants** with a form of nitrogen that is energetically advantageous, because the plant prefers amino acids rather than other forms of nitrogen.

4. **Stimulate the activity of micro-organisms in the soil,** which in turn promotes the production of organic matter that increases absorption of the nutritional elements.



RHIZOSPHERE WITH GRENA FERTILIZER

RHIZOSPHERE WITH CONVENTIONAL FERTILIZER

Root comparison

ROOT TREATED

ROOT NOT TREATED

Colour quality comparison

PLANT TREATED

PLANT NOT TREATED

GRENA products are more effective thanks to the presence of amino acids of animal origin, that perform not only a nutritional action on plants, but also a biostimulating activity on microorganisms that live near the roots.
They interact with the root system, increasing its proliferation.
The plants are therefore able to assimilate nutrients, made available by micro-organisms in the soil thanks to amino acids.

FUNCTION OF AMINO ACIDS

Aspartic Acid	Nitrogen reserve, complexing activity, precursor of new amino acids
Glutamic Acid	Resistance to different environmental stresses, nitrogen reserve, increase of germinability, strengthening of photosynthetic activity and of chlorophyll content, complexing activity, regulation of stomatal opening, precursor of new amino acids, takes action in the resistance mechanisms of the plant in adverse situations, promotes the uptake of inorganic nitrogen
Alanine	Fragrance and flavour precursor, strengthening of photosynthetic activity and of chlorophyll content, regulation of stomatal opening
Arginine	Root development, nitrogen reserve, flavour precursor, induces the synthesis of related hormones
Phenylalanine	Colour precursor
Glycine	This is the main amino acid with chelating action. It is fundamental for the formation of chlorophyll. It takes action in the resistance of the plant in adverse situations. Flavour precursor, strengthening of photosynthetic activity and of chlorophyll content, complexing activity
Isoleucine	Fragrance precursor
Histidine	Antioxidant capacity
Leucine	Fragrance precursor
Lysine	Resistance to different environmental stresses, strengthening of photosynthetic activity and of chlorophyll content, regulation of stomatal opening
Methionine	Root development, precursor of plant hormones, antioxidant capacity, regulation of stomatal opening. Precursor of ethylene, stimulates the development of sprouts and increases the quality and quantity of production. Precursor of growth factors such as spermine and spermidine
Proline	Resistance to different environmental stresses. Nitrogen reserve, flavour precursor, increase of pollen germinability, strengthening of photosynthetic activity and of chlorophyll content, takes action on osmoregulation, management of stomatal opening
Serine	Resistance to different environmental stresses
Tyrosine	Resistance to different environmental stresses
Threonine	Antioxidant capacity
Tryptophan	Precursor of plant hormones (auxins)
Valine	Resistance to different environmental stresses. Fragrance precursor, antioxidant capacity

Supply of precursors responsible for:
- **Flavourings** *(e.g., alanine, isoleucine, leucine, and valine),*
- **Colour** *(e.g., phenylalanine is the precursor of anthocyanins biosynthesis)*
- **Sapore** *(e.g., arginine, alanine, glycine, and proline).*

AMINO ACIDS CONTAINED IN GRENA MATRIX

GRENA organic matrix naturally contains levorotatory amino acids and peptides (aggregated amino acids), true promoters of radical proliferation.
Once in the soil they directly improve the nutrient supply to plants and soil organisms.

The radical proliferation increases the surface of the roots and allows a faster and more efficient absorption of nutrients with **less energy expenditure for the plant.**

The functions of the amino acids are expressed differently because different, are their abilities from which the plant benefits: where **arginine** is a root development stimulator, **lysine** offers resistance to environmental stress.
Others may also be precursors of flavourings such as the amino acids **alanine** and **valine** or they have chelating properties like **glycine.**
some such as **glutamic acid** or **methionine** are so important that they are indispensable for their multi capacity to act on plant wellness.
The list of amino acids present in the organic matrix Grena is in the table on the side. Glutamic acid, alanine and leucine are present not only in the levorotatory form but also in their free form, which is immediately available for plants.

AMINO ACIDS IN THE GRENA MATRIX	
GROUP 1	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	**3.25 g/100 g**
Alanine	**2.05 g/100 g**
Arginine	**1.73 g/100 g**
Phenylalanine	1.13 g/100 g
Glycine	**1.89 g/100 g**
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	**1.13 g/100 g**
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	**1.61 g/100 g**
AMINO ACID GROUP 2	
Cysteine and cystine	0.38 g/100 g
Methionine	**0.39 g/100 g**
AMINO ACID GROUP 3	
Tryptophan	0.19 g/100 g
FREE AMINO ACIDS	
Glutamic Acid (free)	0.12 g/100 g
Alanine (free)	0.24 g/100 g
Leucine (free)	0.11 g/100 g

NATURALLY CONTAINED MICRO-ELEMENTS IN GRENA PRODUCTS AND CHELATING PROPERTIES OF AMINO ACIDS

All Grena products naturally contain meso- and micro-elements that derive directly from the starting organic substance of animal origin.

The diversification of the natural contribution of micro- and meso-elements brings balance to plant nutrition, ensuring a strong and balanced vegetative development.
Thanks to the high quantity of **amino acids, peptides, humic acids, fulvic acids,** carboxylic acids, the various formulations of GRENA products are able to bind easily to the nutrients present in the soil.

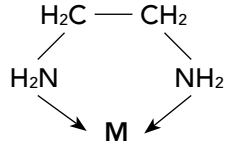
MICRO-ELEMENTS IN THE GRENA MATRIX

Calcium (Ca)	9.90 %
Magnesium (Mg)	0.19 %
Iron (Fe)	661 mg/kg
Boron (B)	4.62 mg/kg
Cobalt (Co)	0.17 mg/kg
Copper (Cu)	5.75 mg/kg
Manganese (Mn)	37.2 mg/kg
Molybdenum (Mo)	0.92 mg/kg
Zinc (Zn)	67.2 mg/kg

CHELATING ACTION OF AMINO ACIDS

Chelation (see diagram on the side) is a chemical process able to increase absorption through the roots of the nutrients already present in soil or brought by Grena products.
Amino acids stimulate the root proliferation allowing to absorb nutrients with faster speed precisely due to the higher absorbing surface. This makes more efficient the absorption of nutrients from the soil, especially those not very mobile such as iron and phosphates.

Chelation is a chemical reaction where usually a metallic atom, behaving as Lewis acid, is bound by a reagent called **chelating** through more than one **coordinating link**
The structure of the resulting compound constitutes a very stable complex that sees the central atom being surrounded by pincers by the chelating, as if it were tight between the claws of a crab (hence the term chelation).
The chelant is often defined as a **polydentate binder** (specifically, bidentate, tridentate, etc.).
The most used chelating agent is **Ethylenediaminetetraacetate**, best known with the acronym of EDTA which is a carboxylic acid; in particular, it is a tetracarboxylic acid with two electronic doublets (Lewis donors) belonging to hydrolysed proteins. These characteristics make the ethylenediaminetetraacetate anion $EDTA^{4-}$ a hexadentate binder.



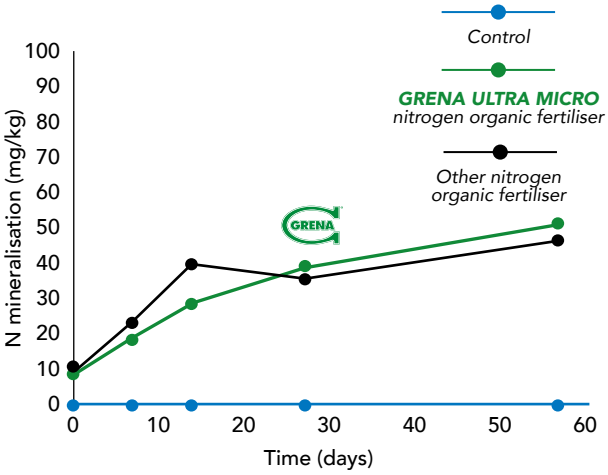
Chelation of a metal atom
by an ethylenediamine molecule.

MINERALISATION CURVE OF GRENA PRODUCTS

Organic nitrogen (protein and non-protein) present in organic fertilisers may only be used by plants because of mineralisation processes capable of transforming it into nitrogen ammoniacal first, then nitric.
These processes are carried out through different stages of matrix degradation and depend on the metabolism of numerous micro-organisms that populate the soils.
For example, the initial phase of degradation of protein nitrogen occurs by extracellular microbial proteases capable of hydrolysing the peptide bonds that lead to the formation of polypeptides that, in turn, will form amino acids.
The global process of the mineralization of protein nitrogen, which leads to the release of ammoniacal nitrogen in the first place, proceeds in three sequential phases: amination, ammonification and nitrification.

NITROGEN MINERALISATION (N)

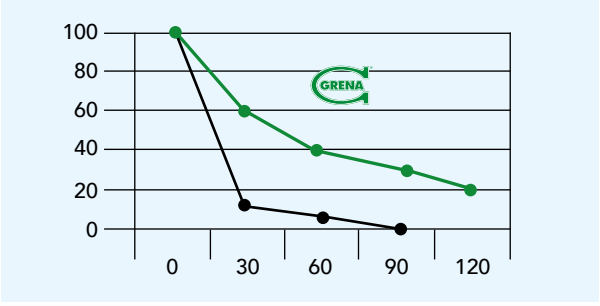
Results of the test on the product Grena Ultra Micro at the University of Bologna (Department of Agricultural Sciences) followed by Professor Claudio Ciavatta.
Regarding N, the examination of the test results shows that nitrate is released gradually during the first four weeks of incubation, after that its concentration in the system under study has remained constant at around 110 mg/kg of soil. The mineralised N, calculated as the difference between the inorganic N of the treated soil and that of the unpaved soil, showed an effective mineralisation of the added N, which in the soil treated with Grena Ultra Micro reaches about 50 mg/kg at the end of incubation (8 weeks), a value corresponding to 50% of the total added N (which was 100 mg/kg). It is important to note that this release is gradual and covers the entire incubation period.



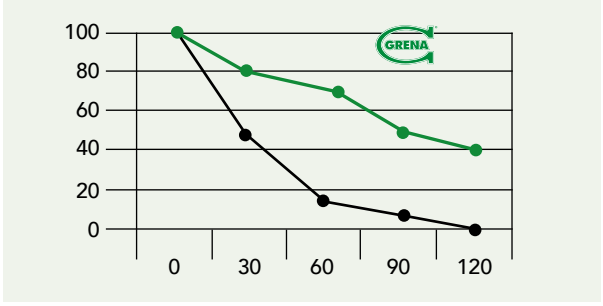
Grena Ultra Micro has shown an effective mineralization of the N reaching good percentages (50%) in a gradual way and in contained times of 28 days.

SLOW RELEASE: LONG-TERM EFFECTIVENESS

All Grena products contain amino acids, the best source of organic nitrogen.
The amino acids provide an immediate release of organic nitrogen, while the peptides and denatured proteins provide the long-term slow release (2-4 months).



Long term availability of **Nitrogen** in the soil using GRENA organic fertilizers compared with a common mineral fertilizer

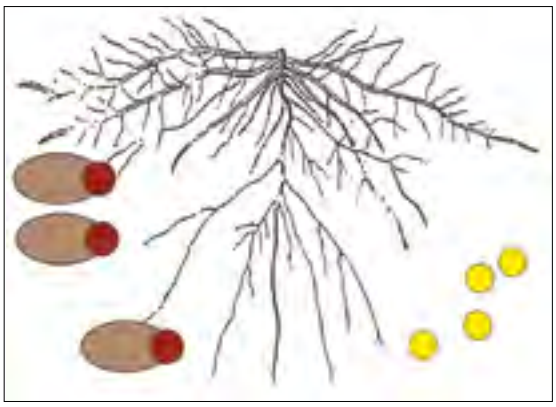


Long term availability of **Phosphorous** in the soil using GRENA organic fertilizers compared with a common mineral fertilizer

Key: *other product* ***GRENA***

HUMIC AND FULVIC ACIDS NATURALLY CONTAINED IN GRENA PRODUCTS

The action of stimulation of amino acids results in increasing efficiency in synergy with the **humic and fulvic acids naturally present** in Grena products.
Their presence increases the length of the root system by determining the production of a greater quantity of secondary and lateral roots.
Humic and fulvic acids are promoters of organo-minerals complex formation, in fact they bind with chemical elements present in the soil such as phosphorus, iron and magnesium, which would otherwise be insoluble.
It allows the combination of these elements with the macro-, meso-, and micro-elements present in the soil giving rise to bonds **called "humates"** which in the soil increase the amount of the elements in solution, allowing the roots of the plants their absorption.

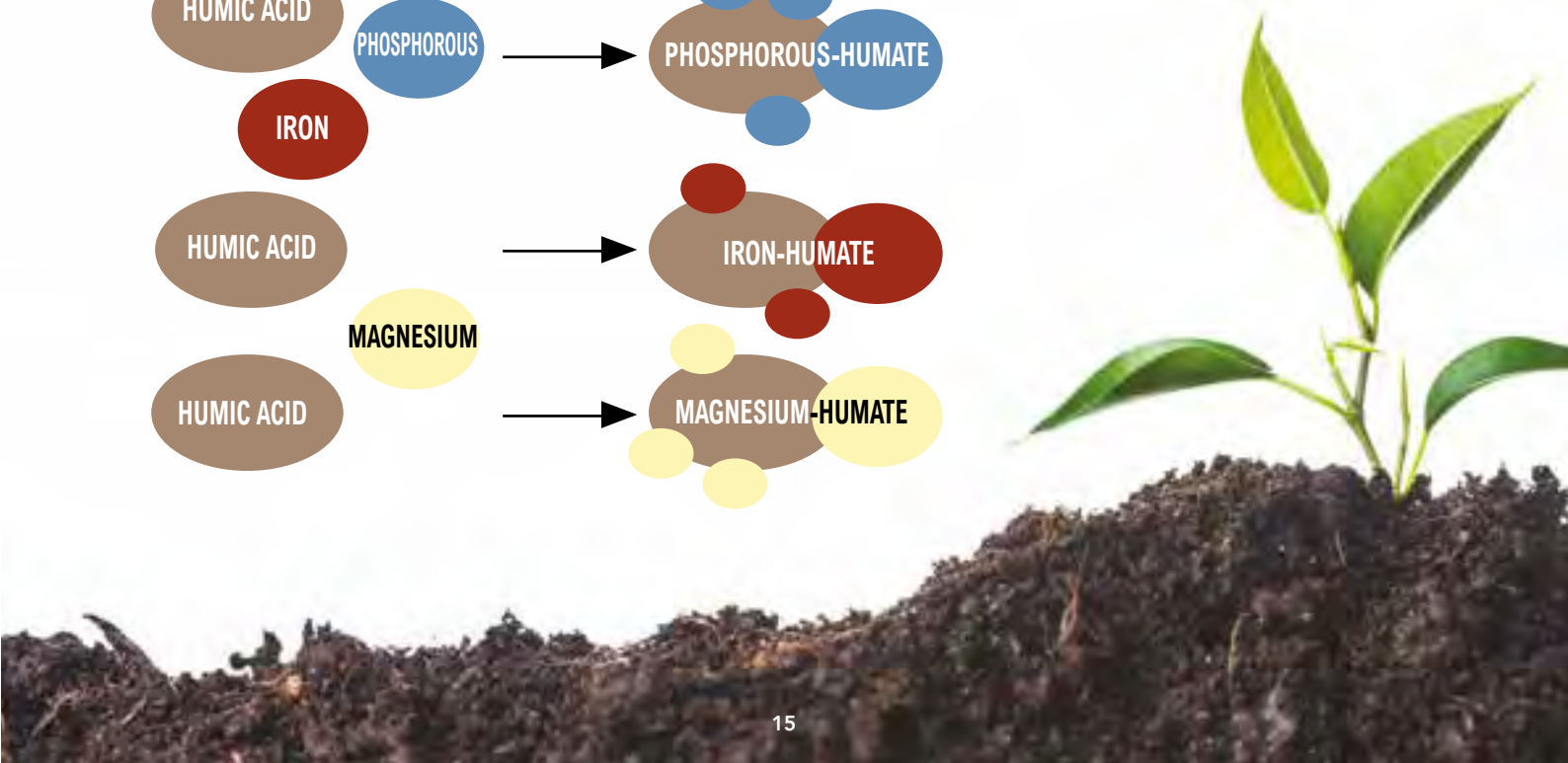


Calcareous soil, pH > 7:

= GRENA Humic-Iron: assimilable

= Iron in the soil: not assimilable

In presence of humic and fulvic acids, the response to nutritional stress by vegetables is improved.

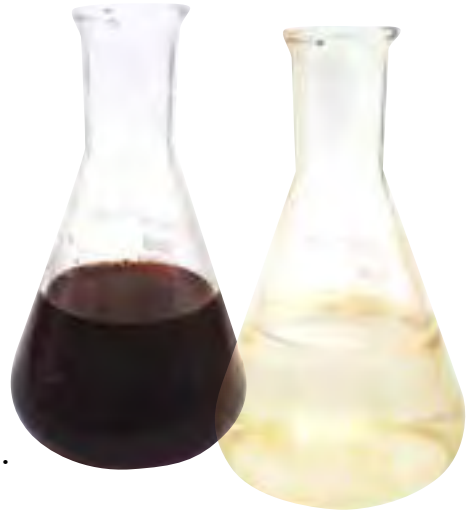


SHAPE AND SIZE OF GRENA PRODUCTS

4 mm pellet for a distribution of Grena products on land intended for further tillage that will allow the pellets to be buried.

2 mm micro flakes are obtained from crumbling pellets for surface distribution on grassy soils of vineyards and orchards, over fields that will not undergo further forms of tillage, on golf courses and gardens.

GRENA LIQUIDS

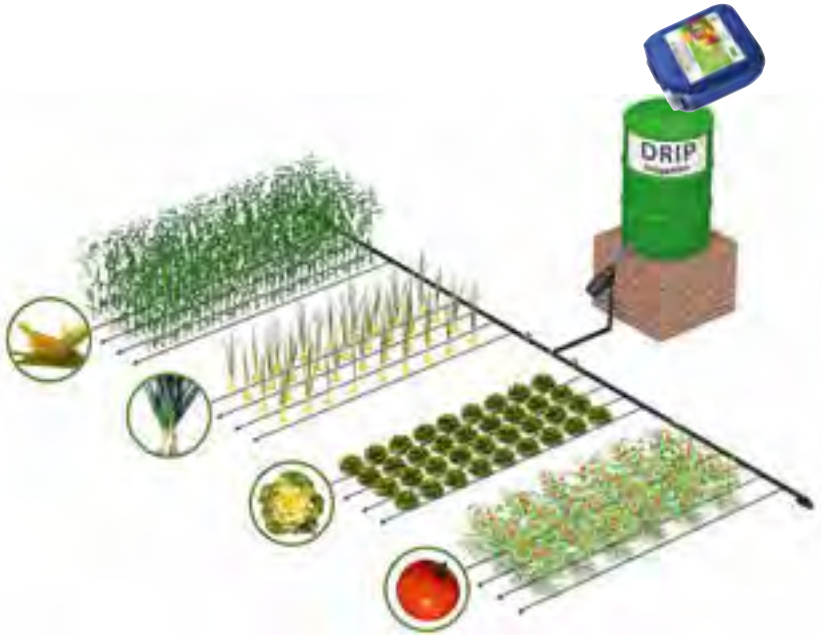


FERTIGATION AND FOLIAR USE

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 and protection plans.
(Tests carried out by: ALSIA Test Centre/Agrobios Metapontum, 2018)



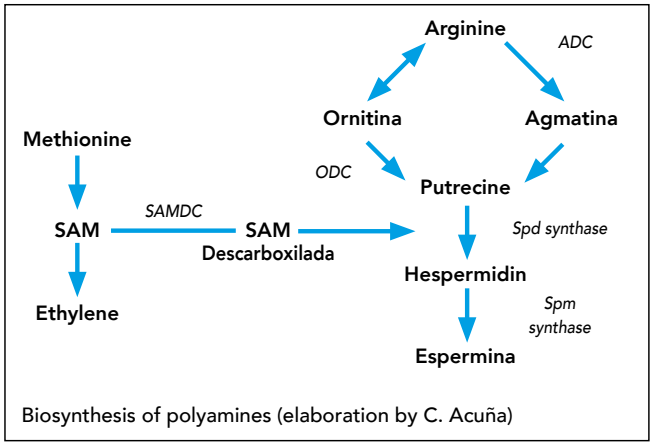
SYNERGY FROM THE COMBINED USE OF AMINO ACIDS AND POLYAMINES

In order to obtain the best performance, the best method is **the administration of amino acids combined with polyamines,** as one integrates with the other in a perfect balance of nutritional resources for plants.
The increased radical proliferation induced by amino acids in the phenological phase at the beginning of the season continues to be supported by the biostimulating activity of polyamines, which are administered in very small doses, but with fortnightly frequency during the vegetative and productive phases.
They allow to keep active and constant the nutrition of the plant, avoiding the moments of stress in the flowering and fruit setting phases, as well as in case of drought stress, unavoidable in the summer months. Amino acids also have antioxidant effects with a clear mitigation of abiotic stress (e.g. drought) to which we can respond even more energetically with the use of our liquid distillate.

LIQUID EXTRACT OF POLYAMINES

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.



Biosynthesis of polyamines (elaboration by C. Acuña)

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 flower structure by 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 IN GRENA PRODUCTS

POLYAMINES IN IDROGRENA	
Spermine	**3.6 mg/kg**
2-Phenylethylamine (2-PHE)	**2.4 mg/kg**

AMINO ACIDS IN THE GRENA MATRIX		
GROUP 1		
Aspartic Acid	2.51	g/100 g
Glutamic Acid	3.25	g/100 g
Alanine	2.05	g/100 g
Arginine	**1.73**	**g/100 g**
Phenylalanine	**1.13**	**g/100 g**
Glycine	1.89	g/100 g
Hydroxyproline	0.45	g/100 g
Isoleucine	1.24	g/100 g
Histidine	0.63	g/100 g
Leucine	2.20	g/100 g
Lysine	1.13	g/100 g
Proline	1.70	g/100 g
Serine	1.74	g/100 g
Tyrosine	0.65	g/100 g
Threonine	1.18	g/100 g
Valine	1.61	g/100 g
AMINO ACIDS GROUP 2		
Cysteine and Cystine	0.38	g/100 g
Methionine	0.39	g/100 g
AMINO ACIDS GROUP 3		
Tryptophan	0.19	g/100 g
FREE AMINO ACIDS		
Glutamic Acid (free)	0.12	g/100 g
Alanine (free)	0.24	g/100 g
Leucine (free)	0.11	g/100 g

EFFECTS OF POLYAMINES

It is the natural presence of organic polyamines within its composition that makes the recent studies liquid extract GRENA a biostimulant.
The presence of 2-PHE also provides and amplifies the same positive effects as Spermine: resistance to enviromental stresses, nitrogen reserves, improved flavouring and colouring, regulation of stomata opening, anti-oxidant effect.

One of the main lines of plant defense is represented by phytoalexins, compounds derived from fungotoxics and synthesized from scratch by plants to eradicate pathogenic infections; they are therefore already present in plants in good health and in the absence of diseases.
By stimulating a higher production of phytoalexins, our Grena liquid extract strengthens the immune system of plants. Polyamines contribute positively to the development and ripening process of the fruit, ensuring a healthy and robust crop growth.

SOILLESS CROPS

Soilless farming systems (SFS), such as hydroponics, aquaponics and aeroponics, have become popular as an alternative to traditional soil farming (TSF). They are a pioneering

SOME ADVANTAGES OF SFS:

a) Agricultural production can be de-coupled from problematic soil conditions with the roots developing in an isolated environment;

b) They free up the cultivation of the soil, thus eliminating problems related to soil fatigue;

c) Nutrient delivery can be standardised and minutely adjusted for the demand of specific phenological phases;

d) They allow to grow horticultural species under standardised growing conditions;

e) Agronomic yield is increased and early ripening is encouraged;

f) Extended length of the growing season and but with shortened duration of a single cycle;

g) The opportunity to cultivate horticultural species with a high seeding density.

(excerpt translated from Manuela Casale, Giuseppe Pignata, Silvana Nicola, "La fertilizzazione nei sistemi colturali fuori suolo" (pp. 367-368), in Carlo Grignani (ed.), Fertilizzazione sostenibile.)

SFS therefore represent an interesting approach to agriculture, characterised by high innovation and forward-looking technology: improved exploitation of inputs is linked with greater growth efficiency and better exploitation of the available surfaces.

It is equally true that crops grown in soilless farming systems (SFS) can be subjected to greater climatic stresses than those cultivated via traditional soil farming (TSF). In fact, among its many actions, the soil has the beneficial effect of mediating the effects of climate - such as humidity and temperature changes - that plants must endure. In soilless systems, there are many advantages, but the lack of buffering between crops and climate that soil can provide may lead to abiotic stresses that reduce the benefits of SFS use.

IDROGRENA is perfectly suited to support the swift sequence of developmental efforts demanded from the plant in SFS and alleviate the associated stresses. Polyamines facilitate growth processes and create a significant advantage in the phases of TRANSPLANT, FLOWERING, FRUIT SET and MATURATION, when the energy requirements of the crop in SFS are at their highest.

LIQUID FERTILIZERS

Liquid organic fertilizers with high miscibility for use in fertigation or foliar, for every type of cultivation, from farming in open-field to greenhouses, but also on vineyard and orchards.

Fast assimilation of nutrients because they are already dissolved in water and do not need decomposition, humidity, or rain processes.

Rich in naturally contained polyamines that strengthen the immune system of plants by encouraging growth, ripening of fruits and the strength of the plant to overcome the stress to which it is subjected (environmental or phenological).

LIQUID ORGANIC AND ORGANO-MINERAL FERTILIZERS

IDROGRENA UNIVERSAL
BIOSTIMULANT

water and heat anti-stress

ENERGY MICROMIX IDROGRENA
BIOSTIMULANT

with meso and micro-elements

IDRO K GRENA

with 7% of potassium (K_2O)

IDROGRENA PLUS N8

frost protection

IDROGRENA Universal

PERMITTED IN ORGANIC FARMING BIO

ORGANIC LIQUID NITROGEN

IDROGRENA is an organic liquid fertilizer 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 roles, including **anti-stress effects:**

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

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

FREE FROM PHOSPHITES, HEAVY METALS AND CHROMIUM VI

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

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

CROP	TIMING*	DOSAGE/HA per application*
Vineyards, olive groves and orchards	pre-flowering to harvest every 20 days (min. 3/4 applications)	5-6 L/ha + 10-12 L/ha
Strawberries, soft fruits etc.	pre-flowering throughout the entire production cycle	5-6 L/ha + 10-12 L/ha
Open field crops	pre-flowering throughout the entire production cycle	5-6 L/ha + 10-12 L/ha
Straw cereals	pre-flowering throughout the entire production cycle	5-6 L/ha + 10-12 L/ha
Greenhouse vegetable crops	pre-flowering throughout the entire production cycle	5-6 L/ha + 10-12 L/ha
Hydroponic and substrate cultures	pre-flowering throughout the entire production cycle	10-12 L/ha

*guidelines only, for the correct use of our products, please consult a specialist.

ENERGY MicroMix IDROGRENA

PERMITTED IN ORGANIC FARMING

BIO

ORGANIC LIQUID FERTILIZER ENRICHED WITH MESO- AND MICRO-ELEMENTS

ENERGY is a liquid extract with polyamines, 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.

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

FREE FROM PHOSPHITES, HEAVY METALS AND CHROMIUM VI

SOURCE
Polyamine liquid extract, meso- and micro-elements

SPECIFIC WEIGHT: 1.12 g/l

Density: *watery fluid*
Colour: dark red

Packaging available:
1 L - 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*
Vineyards and olive groves	alongside protection treatments	3 L/ha (250-300 cc/100 L of water)
Orchards (pome fruits, stone fruits, citrus fruits etc.)	alongside protection treatments	3 L/ha (250-300 cc/100 L of water)
Strawberries, soft fruits etc.	pre- and post-flowering	3 L/ha (250-300 cc/100 L of water)
Greenhouse vegetable crops	pre- and post-flowering	3 L/ha (250-300 cc/100 L of water)
Open field crops	pre- and post-flowering	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

*guidelines only, for the correct use of our products, please consult a specialist.

IDRO K GRENA

PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL LIQUID FERTILIZER WITH POLYAMINES

IDRO K GRENA has high mixability, with 7% of potassium and helps for flowering and ripening

IDRO K GRENA is a product that combines the 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.

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 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 is more effective in foliar applications.

FREE FROM PHOSPHITES, HEAVY METALS AND CHROMIUM VI

SOURCE
Polyamine liquid extract and potassium

SPECIFIC WEIGHT: 1.12 g/l

Density: *watery fluid*
Colour: cloudy

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

ORGANIC POLYAMINES

11 mg/kg

COMPOSITION

Total nitrogen (N)	3%
Potassium oxide (K_2O) soluble in water with 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

CROP	TIMING*	DOSAGE/HA per application*
Vineyards	flowering to early veraison (2/4 treatments)	5 L/ha
Olive groves	flowering and hardening of the core (2 treatments)	5 L/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	start of veraison to ripening (2/4 treatments)	5 L/ha
Strawberries, soft fruits etc.	from fruit setting to ripening (every 10 days)	3-5 L/ha
Greenhouse vegetable crops	from mid-cycle to maturation (every 10 days)	3 L/ha
Open field crops	from mid-cycle to maturation (every 4/5 days)	5 L/ha
Cereal crops	from mid-cycle to maturation (1/2 treatment)	8 L/ha

*guidelines only, for the correct use of our products, please consult a specialist.

IDROGRENA PLUS N8

ORGANO-MINERAL NITROGEN LIQUID FERTILIZER WITH POLYAMINES

IDROGRENA PLUS has high mixability, with 8% of nitrogen

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 best used by foliar applications, .
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, anti frost or rising temperatures with heat, can preserve crops from more serious damage.
It can be used 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. A further application for all those situations that apply a benefit added to the benefits of polyamines.
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 during:

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

FREE FROM PHOSPHITES, HEAVY METALS AND CHROMIUM VI

SOURCE
Polyamine liquid extract and urea

SPECIFIC WEIGHT: 1.036 g/l

Density: *watery fluid*
Colour: cloudy

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

ORGANIC POLYAMINES
30 mg/kg

COMPOSITION	
Total nitrogen (N)	8%
Organic nitrogen (N)	0.3%
Ureic nitrogen (N)	7.7%

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

APPLICATION	TIMING*	DOSAGE/HA per application*
All the crops	a few days before or immediately after the atmospheric event	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
Adverse weather conditions (frost, hailstorm, drought etc.)	a few days before or immediately after the atmospheric event	6-8 L/ha

*guidelines only, for the correct use of our products, please consult a specialist.

Spreading is easy, fast and practical!

Sieved many times, does not contain powders.

MICRO PRODUCT

Micro flakes 2 mm are obtained from crumbling pellets for a distribution on grassy land of vineyards and orchards, steep soils or over fields that will not undergo further form of tillage, without any need to bury. The distribution of the micro flakes facilitates the mineralisation of organic nitrogen and allows a reduction of doses for a more homogeneous distribution.

ORGANIC ECO-PRODUCTS MICRO

NATURGRENA
for strictly organic crops

GRENA ULTRA
for grassy crops (without tillage)

PRODUCTS WITH FEATHERMEAL

NATURGRENA

PERMITTED IN ORGANIC FARMING BIO

ORGANIC NITROGEN FERTILIZER

The basic content of the refined organic substance, composed exclusively of feather meal, is what makes NATURGRENA stand out as a suitable product in areas where organic farming regulations are more stringent.

Feathermeal contains levorotatory (left-handed) amino acids, and also free amino acids. These have even more mobility and they encourage root proliferation in plants, ensuring a greater absorption of macro-nutrients (N, P, K) already mineralized in the soil.

The high content of organic substance and amino acids from feather meal makes NATURGRENA a biological activator of the soil promoting a rapid root development

NATURGRENA is registered with Agrios in Trentino Alto Adige, with Fibl in Germany and with BCS Öko-Garantie for worldwide biological certification

FREE FROM PHOSPHITES, HEAVY METALS AND CHROMIUM VI

SOURCE
Feathermeal

Physical state: micro 2 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS	
Aspartic Acid	2.56 g/100 g
Glutamic Acid	4.59 g/100 g
Alanine	1.74 g/100 g
Arginine	2.42 g/100 g
Phenylalanine	1.40 g/100 g
Glycine	2.55 g/100 g
Hydroxyproline	0.15 g/100 g
Isoleucine	1.40 g/100 g
Histidine	0.38 g/100 g
Leucine	2.73 g/100 g
Lysine	1.11 g/100 g
Proline	2.53 g/100 g
Serine	3.26 g/100 g
Tyrosine	1.08 g/100 g
Threonine	1.50 g/100 g
Valine	2.09 g/100 g
Cysteine and Cystine	0.82 g/100 g
Methionine	0.36 g/100 g
Tryptophan	0.23 g/100 g

MICRO-ELEMENTS	
B	1.16 mg/kg
Co	0.221 mg/kg
Fe	644 mg/kg
Mn	54.1 mg/kg
Mo	0.639 mg/kg
Zn	115 mg/kg

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.08 g/100 g
Glycine	0.02 g/100 g
Isoleucine	0.02 g/100 g
Leucine	0.02 g/100 g
Lysine	0.01 g/100 g
Proline	0.01 g/100 g
Serine	0.02 g/100 g
Valine	0.02 g/100 g

COMPOSITION	
Organic matter	64%
Organic substance (Cx1.724)	**55%**
Amino acids and proteins (Nx6.25)	37.5%
Humic acids	7.2%
Fulvic acids	2.2%
Humidity	7%
Total nitrogen (N)	**6%**
Organic nitrogen (N)	6%
Phosphoric anhydride (P_2O_5)	1%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	32%
Calcium (CaO) natural origin	**15%**
C/N	5.3
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	600-800 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	700-900 kg/ha
Hops	mid-autumn to late spring	scatter the product in soil preparation	600-800 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	400-500 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA ULTRA MICRO

PERMITTED IN ORGANIC FARMING BIO

ORGANIC NITROGEN FERTILIZER

GRENA ULTRA MICRO to be used in all situations ***where there is no further tillage*** *or for last-minute fertilization, for fast mineralization and low visual impact (golf courses)*

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Meatmeal
and feathermeal

Physical state: micro 2 mm

Packaging available:
25 kg bags - 500 kg bags

GRENA ULTRA MICRO was created for distribution on soils not subject to subsequent tillage **(such as grassy vineyards and orchards)**. The micro-pellet formulation allows natural organic nitrogen to be readily available for plant nutrition. Thanks to the fast mineralization time, **GRENA ULTRA MICRO is also ideal for last-minute fertilisations. The product meets the need for agriculture with a lower environmental impact: obtainable through a significant reduction in dosages, thanks to the natural presence of amino acids and humic and fulvic acids that facilitate the assimilation of nutrients.** With GRENA ULTRA MICRO, the distribution is uniform and of low visual impact, excellent with transplanters.
The presence of calcium enhances the organoleptic qualities of the vegetable tissues as well as increasing of preservability and crispness of the fruit. In vineyards, it promotes the development of regular internodes and a net increase in the final Babo grade. The presence **of silicon SiO_2 leads to thicker peel in fruit and more resistance to harmful insects.**

AMINO ACIDS	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Cu	5.75 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**45%**
Amino acids and proteins (Nx6.25)	37.5%
Humic and fulvic acids	13%
Humidity	7%
Total nitrogen (N)	**6%**
Organic nitrogen (N)	6%
Phosphoric anhydride (P_2O_5)	1%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	26%
Calcium (CaO) natural origin	**15%**
Silicon (SiO_2)	0.33%
C/N	4.3
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards and olive groves	mid-autumn to late spring	localized distribution per row	400-500 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	400-500 kg/ha
Strawberry	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Soft fruits etc.	pre-sowing or pre-transplant	scatter the product in soil preparation	400-500 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Ornamental lawns, golf courses and gardens	mid-summer to late spring	scatter in soil	600-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

THE IMPORTANCE OF NITROGENOUS FERTILIZERS

Organic nitrogenous fertilizers are ideal for crops that love a high nitrogen intake, such as olive, citrus, actinidia and table grapes.
Combining a high nitrogen content with an organic matrix based on laevorotatory amino acids allows plants to assimilate nutrients gradually.

ORGANIC NITROGEN FERTILIZERS with feathermeal

GRENA STAR N8

GRENA OLIVO SPECIAL NP 6-3

recommended for olives groves

GRENA SPRINT CALCIO N6

contains 15% of calcium

GRENA STAR N8

PERMITTED IN ORGANIC FARMING BIO

ORGANIC NITROGEN FERTILIZER WITH FEATHERMEAL

GRENA STAR is ideal for situations of environmental stress

GRENA STAR contains 8% organic nitrogen and **is obtained by mixing in laboratory-tested doses of animal proteins with feathermeal**, it represents a product with remarkable performances.
Thanks to the presence of free amino acids in particular deriving **from keratin contained in the feather, a protein consisting of amino acids, vitamins, and trace elements**, which allow plants to withstand environmental stresses and high salt concentrations in soils.
It is a slow-release product: amino acids provide an immediate release of organic nitrogen, while denatured peptides and proteins provide long-term slow release. GRENA STAR shows an effective nitrogen mineralization reaching 50% gradually and in a time of 28 days.

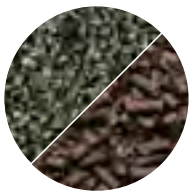
AMINO ACIDS	
Aspartic Acid	3.41 g/100 g
Glutamic Acid	7.02 g/100 g
Alanine	2.29 g/100 g
Arginine	3.94 g/100 g
Phenylalanine	1.60 g/100 g
Glycine	3.15 g/100 g
Hydroxyproline	0.18 g/100 g
Isoleucine	1.79 g/100 g
Histidine	0.45 g/100 g
Leucine	3.75 g/100 g
Lysine	1.49 g/100 g
Proline	3.64 g/100 g
Serine	4.12 g/100 g
Tyrosine	1.62 g/100 g
Threonine	2.16 g/100 g
Valine	2.76 g/100 g
Cysteine and Cystine	1.48 g/100 g
Methionine	0.37 g/100 g
Tryptophan	0.37 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Cu	5.75 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	74%
Organic substance (Cx1.724)	**64%**
Amino acids and proteins (Nx6.25)	50%
Humic and fulvic acids	15%
Humidity	7%
Total nitrogen (N)	**8%**
Organic nitrogen (N)	8%
Organic carbon (C)	37%
Calcium (CaO) natural origin	**10%**
C/N	4.6
Specific weight	0.70 kg/L

FREE FROM PHOSPHITES AND CHROMIUM VI



SOURCE
Meatmeal
and feathermeal

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - spring	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, etc.)	autumn - spring	localized distribution per row	500-600 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1000 kg/ha

*Le dosi suddette sono indicative. Per l'uso corretto dei prodotti, consultare il Tecnico.

GRENA OLIVO SPECIAL NP 6-3

PERMITTED IN ORGANIC FARMING BIO

ORGANIC NITROGEN FERTILIZER

GRENA OLIVO SPECIAL is ideal for the fertilization of olive trees

The remarkable nutritive action of the amino acids contained in GRENA OLIVO SPECIAL **has a decisive action on the increase on the root apparatus and a chelating action** on elements already present in the soil with a prolonged effect over time. The natural nitrogen content in GRENA OLIVO SPECIAL ensures a gradual release, constant and without washout over time for all the productive cycle of the plants. Moreover, the presence of 3% Phosphorus of organic origin together with calcium naturally present strengthen the plant tissues making the plant stronger and increasing the quality of the fruits.
The presence of organic substances plays an important role on the soil structure, activating it biologically.
GRENA OLIVO SPECIAL helps the plant to better face the winter phases, parasitic attacks, the phase of flowering and maturation.

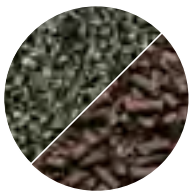
AMINO ACIDS	
Aspartic Acid	2.56 g/100 g
Glutamic Acid	4.59 g/100 g
Alanine	1.74 g/100 g
Arginine	2.42 g/100 g
Phenylalanine	1.40 g/100 g
Glycine	2.55 g/100 g
Hydroxyproline	0.15 g/100 g
Isoleucine	1.40 g/100 g
Histidine	0.38 g/100 g
Leucine	2.73 g/100 g
Lysine	1.11 g/100 g
Proline	2.53 g/100 g
Serine	3.26 g/100 g
Tyrosine	1.08 g/100 g
Threonine	1.50 g/100 g
Valine	2.09 g/100 g
Cysteine and Cystine	0.82 g/100 g
Methionine	0.36 g/100 g
Tryptophan	0.23 g/100 g

MICRO-ELEMENTS	
B	1.16 mg/kg
Co	0.221 mg/kg
Fe	644 mg/kg
Mn	54.1 mg/kg
Mo	0.639 mg/kg
Zn	115 mg/kg

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.08 g/100 g
Glycine	0.02 g/100 g
Isoleucine	0.02 g/100 g
Leucine	0.02 g/100 g
Lysine	0.01 g/100 g
Proline	0.01 g/100 g
Serine	0.02 g/100 g
Valine	0.02 g/100 g

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**45%**
Amino acids and proteins (Nx6.25)	37.5%
Humic and fulvic acids	8%
Humidity	7%
Total nitrogen (N)	6%
Organic nitrogen (N)	**6%**
Phosphoric anhydride (P_2O_5)	**3%**
Total potassium oxide (K_2O)	1%
Organic carbon (C)	26%
Calcium (CaO) natural origin	**15%**
C/N	4.3
Specific weight	0.70 kg/L

FREE FROM PHOSPHITES AND CHROMIUM VI



SOURCE
Meatmeal
and feathermeal

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Olive groves	mid-autumn to late spring	localized distribution per row	800-1200 kg/ha
Vineyards	mid-autumn to late spring	localized distribution per row	400-500 kg/ha
Orchards (pome fruits, stone fruits, etc.)	mid-autumn to late spring	localized distribution per row	400-500 kg/ha

GRENA SPRINT CALCIO N6 +15 CaO

PERMITTED IN ORGANIC FARMING BIO

ORGANIC NITROGEN FERTILIZER

GRENA SPRINT CALCIO is recommended for the fertilisation of orchards, (actinidia) and vineyards

FREE FROM PHOSPHITES AND CHROMIUM VI

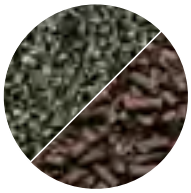
GRENA SPRINT CALCIO is particularly suitable for triggering an increase in the holding capacity of nutrients for biological absorption.
The remarkable presence of amino acids, proteins and humic acids give it a high biostimulating power, favouring an excellent assimilation of the elements and a chelating action towards all macro- and micro-elements in the soil.
The nutritive action is also manifested in the increase of the radical mass, thus amplifying the absorption capacity of the elements.
GRENA SPRINT CALCIO also contributes to the improvement of organoleptic qualities, the resistance of plant tissues, a greater crunchiness of the final product it amplifies soil microbial and fungal activity, even in tougher soils.
The high content of calcium (CaO 15%) gives it a significant corrective action of the soil pH.

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.56 g/100 g
Glutamic Acid	4.59 g/100 g
Alanine	1.74 g/100 g
Arginine	2.42 g/100 g
Phenylalanine	1.40 g/100 g
Glycine	2.55 g/100 g
Hydroxyproline	0.15 g/100 g
Isoleucine	1.40 g/100 g
Histidine	0.38 g/100 g
Leucine	2.73 g/100 g
Lysine	1.11 g/100 g
Proline	2.53 g/100 g
Serine	3.26 g/100 g
Tyrosine	1.08 g/100 g
Threonine	1.50 g/100 g
Valine	2.09 g/100 g
Cysteine and Cystine	0.82 g/100 g
Methionine	0.36 g/100 g
Tryptophan	0.23 g/100 g

MICRO-ELEMENTS	
B	1.16 mg/kg
Co	0.221 mg/kg
Fe	644 mg/kg
Mn	54.1 mg/kg
Mo	0.639 mg/kg
Zn	115 mg/kg

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.08 g/100 g
Glycine	0.02 g/100 g
Isoleucine	0.02 g/100 g
Leucine	0.02 g/100 g
Lysine	0.01 g/100 g
Proline	0.01 g/100 g
Serine	0.02 g/100 g
Valine	0.02 g/100 g

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**45%**
Amino acids and proteins (Nx6.25)	37.5%
Humic and fulvic acids	8%
Humidity	7%
Total nitrogen (N)	**6%**
Organic nitrogen (N)	6%
Organic carbon (C)	26%
Calcium (CaO) natural origin	**15%**
C/N	4.3
Specific weight	0.70 kg/L



SOURCE
Meatmeal
and feathermeal

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Actinidia	Autumn - spring	localized distribution per row	800-1200 kg/ha
Orchards (pome fruits, stone fruits, etc.)	Autumn - spring	localized distribution per row	800-1200 kg/ha
Open field vegetable crops (artichoke)	pre-sowing	scatter the product in soil preparation	600-1000 kg/ha
Cereal crops	pre-sowing	scatter the product in soil preparation	500-600 kg/ha

BIOSTIMULANTS AND ORGANIC FERTILIZERS

slow-release nitrogen

GRENA EXTRA CORNUNGHIA
contains 15% of horn and hoof mix

GRENA SPECIAL
BIOSTIMULANT

contains 3% of phosphorus

GRENA PLUS
recommended for greenhouse vegetables

GRENA SUPER
contains 2% of magnesium

GRENA EXTRA CORNUNGHIA

PERMITTED IN ORGANIC FARMING BIO

ORGANIC NITROGEN FERTILIZER

GRENA EXTRA CORNUNGHIA is recommended for cultivation of aromatic herbs, flower crops and strawberry

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Meatmeal with
horn and hoof mix

Physical state: pellet 4 mm

Packaging available:
25 kg bags

GRENA EXTRA CORNUNGHIA **contains 15% of horn and hoof mix** and it is ideal where the climatic conditions present both high temperatures and high humidity, for example, in greenhouse crops or particularly sunny areas, where the process of mineralisation of organic substance is accelerated.
The mixed in horn and hoof prolongs the release of the elements while keeping the product slow-release, improving the structure of the soil.
Using GRENA EXTRA CORNUNGHIA with aromatic herbs enhances the colour and scent of the leaves.
In plants of basil, it increases the beneficial qualities by improving the presence of vitamins, flavonoids, and antioxidants. An immediate effect found in thyme is the variation of colour to a bright green with pronounced scent.
Using GRENA EXTRA CORNUNGHIA with strawberries in open-field results in a longer production period, with harder and plumper fruit, and longer shelf life.

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Cu	5.75 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**52%**
Amino acids and proteins (Nx6.25)	37.5%
Humic and fulvic acids	14%
Humidity	7%
Total nitrogen (N)	6%
Organic nitrogen (N)	**6%**
Phosphoric anhydride (P_2O_5)	2%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	30%
Calcium (CaO) natural origin	**10%**
C/N	5
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION	DOSAGE/HA*
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1000 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	700-1000 kg/ha
Aromatic herbs	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1000 kg/ha
Strawberry under tunnel	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha
Flower crops	pre-sowing or pre-transplant	scatter the product in soil preparation	700-1000 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA SPECIAL

PERMITTED IN ORGANIC FARMING BIO

ORGANIC BIOSTIMULANT

GRENA SPECIAL is recommended for vegetables and fruit crops

The abundant quantity of amino acids in GRENA SPECIAL provides excellent crop nutrition for the duration of the production cycle, with slow release of the nitrogen contained.
The product also contains 3% P_2O_5 of natural origin, which is immediately available to the soil, while the organic GRENA MATRIX restores the balance of the microbial and bacterial flora to improve the physical characteristics of the soil.
Among the amino acids, the **glutamic acid allows greater resistance to abiotic stress**, enhances the photosynthesis, the level of chlorophyll and with the aspartic acid promotes the assimilation of nitrogen. In addition, the presence of **alanine among free amino acids helps the regulation of the opening of the stomata,** particularly useful in stressful environmental conditions, such as drought.

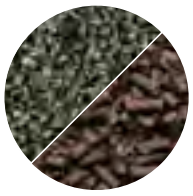
AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4,62 mg/kg
Fe	661 mg/kg
Mn	37,2 mg/kg
Zn	67,2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**47%**
Amino acids and proteins (Nx6.25)	31%
Humic and fulvic acids	9%
Humidity	7%
Total nitrogen (N)	5%
Organic nitrogen (N)	**5%**
Phosphoric anhydride (P_2O_5)	3%
Total potassium oxide (K_2O)	1.3%
Organic carbon (C)	27%
Calcium (CaO) natural origin	**10%**
C/N	5.5
Specific weight	0.70 kg/L

FREE FROM PHOSPHITES AND CHROMIUM VI



SOURCE
Meatmeal
and feathermeal

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION	DOSAGE/HA*
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	700-1000 kg/ha
Citrus fruits	Autumn - winter	localized distribution per row	600-1000 kg/ha
Orchards and vineyards	Autumn - winter	localized distribution per row	600-1000 kg/ha
Potatoes and asparagus	pre-sowing or pre-transplant	scatter the product in soil preparation	400-600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA PLUS

PERMITTED IN ORGANIC FARMING BIO

ORGANIC FERTILIZER

GRENA PLUS is an organic fertilizer with nitrogen slow release

GRENA PLUS **is a pelletized product ideal for soil preparation.**
Its composition offers a gradual release of the elements with a constant mineralisation over time and does not bring excessive salinity to the soil.
Rich in humic and fulvic acids, GRENA PLUS fertilizer stimulates the formation of highly available and stable complexes facilitating the passage of nutrients from the soil to the roots.
The naturally present calcium in the product increases the resistance of plant tissues, as well as the increase of freshness and conservation of crops, especially in the presence of problematic environmental conditions (high temperatures, drought, etc.).

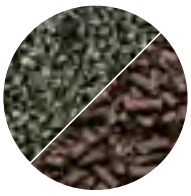
AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4,62 mg/kg
Fe	661 mg/kg
Cu	5.75 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**46%**
Amino acids and proteins (Nx6.25)	25%
Humic and fulvic acids	9%
Humidity	7%
Total nitrogen (N)	**4%**
Organic nitrogen (N)	4%
Phosphoric anhydride (P_2O_5)	1%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	27%
Calcium (CaO) natural origin	**10%**
C/N	6.7
Specific weight	0.70 kg/L

FREE FROM PHOSPHITES AND CHROMIUM VI



SOURCE
Meatmeal

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	700-1000 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	600-1000 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-1000 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-1000 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA SUPER +2 MgO

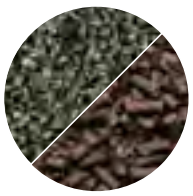
PERMITTED IN ORGANIC FARMING BIO

ORGANIC FERTILIZER NP

GRENA SUPER is recommended for open field crops, broccoli, garlic, onions, potatoes etc...

GRENA SUPER naturally contains levorotatory amino acids, meso-elements such as calcium (15%) and micro-elements. GRENA SUPER is recommended for basic fertilisation, in particular for leaf vegetables or with tap root, but also for fibrous root crops such as garlic, onion or leek. The product ensures a high intake of organic compounds that encourage improvement in soil fertility and a continuous availability of essential nutrients for quality production.
GRENA SUPER is a product with a balanced supply of nitrogen and phosphorus (NP), in fact, 3% nitrogen and 2% phosphorus are particularly suitable for all vegetables growing underground such as carrots, radish, red turnips, beets or parsnip. It also suitable for broccoli, savoy cabbages, salad greens and radicchio (chicory), both in the open field and in tunnels, as well as fennel and celery, where the content of phosphorus and natural calcium fortifies the cell walls. **The presence of 2% magnesium helps prevent nutritional deficiencies** of crops and ensures better physiological processes. The presence of amino acids such as **alanine, isoleucine and leucine which are precursors of aromas and arginine which is a precursor of taste**, combined with the stimulation of methionine allows a better development of buds and increases the quality and quantity of production.

FREE FROM PHOSPHITES AND CHROMIUM VI



SOURCE
Meatmeal

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**38%**
Amino acids and proteins (Nx6.25)	18%
Humic and fulvic acids	11%
Humidity	7%
Total nitrogen (N)	3%
Organic nitrogen (N)	**3%**
Phosphoric anhydride (P_2O_5)	2%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	22%
Calcium (CaO) natural origin	**15%**
Magnesium oxide (MgO)	**2%**
C/N	7.3
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION	DOSAGE/HA*
Orchards and vineyards	Autumn - spring	localized distribution per row	600-1000 kg/ha
Olive groves	Autumn - spring	localized distribution per row	600-1200 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha
Onions	pre-sowing or pre-transplant	scatter the product in soil preparation	700-800 kg/ha
Potatoes	pre-sowing or pre-transplant	scatter the product in soil preparation	1000-1500 kg/ha
Beets	pre-sowing	scatter the product in soil preparation	400-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

CORRECTIVE - ACTION FORMULATION

Plants are subject to the morphological situation of the soil in which they are located; to avoid nutritional deficiencies it is recommended to take preventive action with the use of GRENA special formulations, to solve iron deficiencies or pH problems of sub-acid or sub-alkaline soil.

SPECIAL ORGANIC FERTILIZERS

corrective - action formulations

SUPERFERRO + ZOLFO

SUPERZOLFO

SUPERFERRO

SUPER CALCIO + 5 MgO

GRENA SUPERFERRO +S

PERMITTED IN ORGANIC FARMING BIO

THP® PROCESS

ORGANIC CORRECTIVE - ACTION FERTILIZER NP

GRENA SUPERFERRO +S is recommended for the basic fertilisation of crops that require action of varying degree: iron chlorosis and excessive limestone are two cases in which it is important to take action with GRENA SUPERFERRO +S.

It has an excellent corrective action against alkaline soils, balancing the pH; in this way, it helps the plant roots to assimilate the iron humate compounds. This is produced from the interaction between Iron and the GRENA matrix with its humic and fulvic acids and amino acids.

GRENA SUPERFERRO +S ensures a high intake of organic compounds for the general improvement of soil fertility and continuous availability of essential nutrients.

GRENA SUPERFERRO +S is recommended for vineyards, orchards or treating fruit of the forest for iron deficiencies and in alkaline soils

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Meatmeal, sulphur and iron sulphate

Physical state: pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS	
Aspartic Acid	1.71 g/100 g
Glutamic Acid	2.71 g/100 g
Alanine	1.16 g/100 g
Arginine	1.21 g/100 g
Phenylalanine	0.83 g/100 g
Glycine	1.71 g/100 g
Hydroxyproline	0.17 g/100 g
Isoleucine	0.83 g/100 g
Histidine	0.34 g/100 g
Leucine	1.58 g/100 g
Lysine	1.00 g/100 g
Proline	1.16 g/100 g
Serine	1.14 g/100 g
Tyrosine	0.64 g/100 g
Threonine	0.89 g/100 g
Valine	1.13 g/100 g
Cysteine and Cystine	0.44 g/100 g
Methionine	1.10 g/100 g
Tryptophan	0.25 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**48%**
Amino acids and proteins (Nx6.25)	18%
Humic and fulvic acids	10%
Humidity	7%
Total nitrogen (N)	3%
Organic nitrogen (N)	**3%**
Phosphoric anhydride (P_2O_5)	2%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	28%
Sulphuric anhydride (SO_3)	**20%**
Total iron (Fe)	**3%**
Calcium (CaO)	**8%**
C/N	**9.3**
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - spring	localized distribution per row	600-800 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	autumn - spring	localized distribution per row	600-800 kg/ha
Strawberries, soft fruits etc.	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA SUPERZOLFO

PERMITTED IN ORGANIC FARMING BIO

ORGANIC CORRECTIVE - ACTION FERTILIZER NP

GRENA SUPERZOLFO **performs an excellent corrective action against alkaline soils by balancing the pH, allowing plants a better assimilation of nutrients in the soil and, especially in calcareous soils, avoiding ferric chlorosis.** In fact, alkaline soils inhibit the process of assimilation of microelements.
GRENA SUPERZOLFO brings sulphur (S) also as nutrition. The product ensures a high intake of organic compounds that encourage a general improvement in soil fertility and a continuous availability of essential nutrients.

GRENA SUPERZOLFO is recommended to correct high soil pH (>8): fruits of the forest, raspberries, currants, etc.

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Meatmeal and sulphur

Physical state: pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS	
Aspartic Acid	1.71 g/100 g
Glutamic Acid	2.71 g/100 g
Alanine	1.16 g/100 g
Arginine	1.21 g/100 g
Phenylalanine	0.83 g/100 g
Glycine	1.71 g/100 g
Hydroxyproline	0.17 g/100 g
Isoleucine	0.83 g/100 g
Histidine	0.34 g/100 g
Leucine	1.58 g/100 g
Lysine	1.00 g/100 g
Proline	1.16 g/100 g
Serine	1.14 g/100 g
Tyrosine	0.64 g/100 g
Threonine	0.89 g/100 g
Valine	1.13 g/100 g
Cysteine and Cystine	0.44 g/100 g
Methionine	1.10 g/100 g
Tryptophan	0.25 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**48%**
Amino acids and proteins (Nx6.25)	18%
Humic and fulvic acids	11%
Humidity	7%
Total nitrogen (N)	3%
Organic nitrogen (N)	**3%**
Phosphoric anhydride (P_2O_5)	2%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	28%
Sulphuric anhydride (SO_3)	**30%**
Calcium (CaO)	**8%**
C/N	**9.3**
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - spring	localized distribution per row	600-800 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	autumn - spring	localized distribution per row	600-800 kg/ha
Strawberries, soft fruits etc.	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA SUPERFERRO

PERMITTED IN ORGANIC FARMING

BIO

ORGANIC CORRECTIVE - ACTION FERTILIZER NP

GRENA SUPERFERRO is particularly suitable for soils with iron deficiency as it contains GRENA organic matrix and iron from iron sulphate. The presence of humic and fulvic acids allows stability in the mineralisation process which, in their absence, would occur more quickly and give rise to leaching. Humic and fulvic acids are in fact responsible for the formation of complexes; for example, humic acid with iron becomes a humic iron compound. The humic iron compound is recognized by the plant and is therefore more assimilable. Naturally contained amino acids are in turn activators of root proliferation and chelation. That allows the root system to absorb mineralised NPK in the soil and promote the production of organic compounds to increase the absorption of nutrients including iron. This is why fertilisation with GRENA SUPERFERRO is essential to treat and prevent ferric chlorosis:

- to treat because iron is immediately available
- to prevent the creation of iron reserves for the subsequent phenological phases of the plant.

GRENA SUPERFERRO is recommended for vineyards, orchards, berries and for treating iron deficiencies of gardens and lawns

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Meatmeal and iron sulphate

Physical state: pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS	
Aspartic Acid	1.71 g/100 g
Glutamic Acid	2.71 g/100 g
Alanine	1.16 g/100 g
Arginine	1.21 g/100 g
Phenylalanine	0.83 g/100 g
Glycine	1.71 g/100 g
Hydroxyproline	0.17 g/100 g
Isoleucine	0.83 g/100 g
Histidine	0.34 g/100 g
Leucine	1.58 g/100 g
Lysine	1.00 g/100 g
Proline	1.16 g/100 g
Serine	1.14 g/100 g
Tyrosine	0.64 g/100 g
Threonine	0.89 g/100 g
Valine	1.13 g/100 g
Cysteine and Cystine	0.44 g/100 g
Methionine	1.10 g/100 g
Tryptophan	0.25 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**38%**
Amino acids and proteins (Nx6.25)	18%
Humic and fulvic acids	**10%**
Humidity	7%
Total nitrogen (N)	3%
Organic nitrogen (N)	**3%**
Phosphoric anhydride (P_2O_5)	2%
Total potassium oxide (K_2O)	1%
Organic carbon (C)	22%
Sulphuric anhydride (SO_3)	7%
Total iron (Fe)	**3%**
C/N	7.3
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - spring	localized distribution per row	600-800 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	autumn - spring	localized distribution per row	600-800 kg/ha
Strawberries, soft fruits etc.	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA SUPERCALCIO + MgO

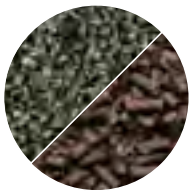
PERMITTED IN ORGANIC FARMING

BIO

ORGANIC CORRECTIVE - ACTION FERTILIZER NP +20 CaO

GRENA SUPER CALCIO +MgO is recommended for nutritional deficiencies of Calcium and Magnesium

FREE FROM PHOSPHITES AND CHROMIUM VI



SOURCE
Meatmeal and dolomite

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

GRENA SUPER CALCIO + MgO is a fertilizer with **levorotatory** amino acids and a good supply of meso-elements.
The presence of amino acids and humic and fulvic acids creates complexed bonds with the magnesium and calcium present.

Calcium is very important:
- **to give elasticity to the cell wall,** as it reduces the cracking of the fruits which is the cause of a qualitative deterioration, especially in conditions of high humidity;
- **to give resistance to apical rot** on peppers and tomatoes (especially San Marzano and Beefsteak / Cuore di Bue tomatoes) and **tip burn** on salads;
- **to improve shelf-life.**

Magnesium is important because:
- **improves fruit colouring** (carotene production),
- **allows better chlorophyll photosynthesis.**

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**41%**
Amino acids and proteins (Nx6.25)	25%
Humic and fulvic acids	8%
Humidity	7%
Total nitrogen (N)	**4%**
Organic nitrogen (N)	3,5%
Phosphoric anhydride (P_2O_5)	2%
Organic carbon (C)	24%
Calcium (CaO) natural origin	**20%**
Total magnesium oxide (MgO)	**5%**
C/N	6
Specific weight	0.70 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	mid-autumn to late winter	localized distribution per row	400-500 kg/ha
Table grapes	mid-autumn to late winter	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late winter	localized distribution per row	600-800 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	1000-1200 kg/ha
Tomatoes	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1200 kg/ha

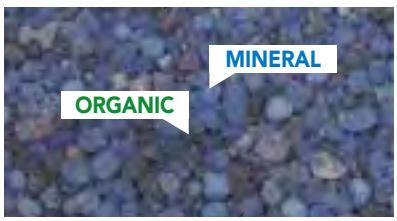
*guidelines only, for the correct use of our products, please consult a specialist.

GRENA ORGANO-MINERALS

Organo-mineral fertilizers represent the solution to one of the main defects of mineral fertilizers: **leaching.** By adding the NPK mineral nutrients to the GRENA organic substance it is possible to obtain an organo-mineral product by reaction, where macro-elements tie to organic complexes (amino acids, humic and fulvic acids) and increase the amount of soluble elements in the soil, allowing plant roots to absorb them.

Grena organo-minerals are **obtained by reaction.** NPK macro-elements are inextricably linked to the organic matter making them **not washable** and slow release.

ORGANO-MINERALS OBTAINED BY MIXING
with 13% of organic substance



GRENA ORGANO-MINERAL OBTAINED BY REACTION
with 31% of organic substance

ORGANO-MINERAL ECO-FERTILIZERS

with nitrogen slow release

GRENA NOBEL 3.0.20 S

GRENA BASE 3.8.8 S

GRENA TECH 3.10.5 S +2 MgO

GRENA BALANCE 4.3.3 S

GRENA VERDE 4.5.8 S

GRENA LIFE 4.6.10 S +2 MgO

GRAN SEMINA 4.10

GRENA TURF 8.3.3

GRENA NOBEL 3.0.20 S

PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER NK WITH POTASSIUM SULPHATE

GRENA NOBEL 3.0.20 is an organo-mineral fertilizer NK particularly suitable for vineyards and orchards where the amount of phosphorus in the soil is high.
Through the Grena organic substance it conveys nitrogen from amino acids contained in both animal proteins and feathermeal.
The high intake of biological potassium allows the formation of sugars, resulting in a quality production. The organic substance in GRENA NOBEL is among the richest and most dense of amino acids essential to life. They allow the formation of peptides, indispensable promoters of root proliferation, aroma, resistance to environmental stress. They are antioxidants by nature and promoters of photosynthetic activity and chlorophyll content, as well as cell division during flowering. Particularly suitable for the production of grapes for quality wines.

Also available FERTIGRENA 3.0.20 CL with potassium chloride

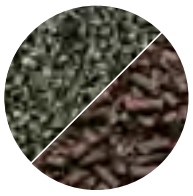
FREE FROM PHOSPHITES AND CHROMIUM VI

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Cu	5.75 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**24%**
Amino acids and proteins (Nx6.25)	20%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	**3%**
Organic nitrogen (N)	3%
Total potassium oxide (K_2O)	**20%**
Organic carbon (C)	20%
Calcium (CaO) natural origin	**8%**
C/N	6.6
Specific weight	0.85 kg/L



SOURCE
Organic: Meatmeal and feathermeal
Mineral: potassium sulphate

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	500-600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA BASE 3.8.8 S

PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER NPK WITH POTASSIUM SULPHATE

GRENA BASE 3.8.8 is an organo-mineral fertilizer NPK particularly suitable for vineyards and orchards.
Through the Grena organic substance conveys nitrogen derived from amino acids of animal origin and from feathermeal.
The function of nitrogen is accentuated by the presence of phosphorus (natural phosphorites) allowing the development of robust cell walls. Potassium, in very soluble form and always of biological derivation, allows the formation of sugars in the fruit, culminating in a quality production.

GRENA BASE is recommended for basic autumn fertilizations

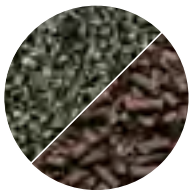
FREE FROM PHOSPHITES AND CHROMIUM VI

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**34%**
Amino acids and proteins (Nx6.25)	20%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	**3%**
Organic nitrogen (N)	3%
Phosphoric anhydride (P_2O_5)	8%
Total potassium oxide (K_2O)	8%
Organic carbon (C)	20%
Calcium (CaO) natural origin	**8%**
C/N	6.6
Specific weight	0.85 kg/L



SOURCE
Organic: Meatmeal and feather meal
Mineral: soft ground rock phosphate and potassium sulphate

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	500-600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA TECH 3.10.5 S +2 MgO

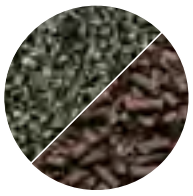
PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER NPK WITH POTASSIUM SULPHATE

GRENA TECH is recommended for soils with phosphorus deficiencies

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Organic: meatmeal and feathermeal
Mineral: soft ground rock phosphate, potassium sulphate and dolomite



Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

It is an organo-mineral fertilizer consisting of the union of biological mineral fertilizers with the GRENA organic matrix, rich in proteins, amino acids, humic and fulvic acids.
The levorotatory amino acids in the GRENA organic matrix are the promoters of the development of the secondary roots of the plants and promote the absorption of the nutrients contained directly inside GRENA TECH and those mineralised in the soil.
The naturally present micro-elements are able to catalyse the physiological processes of the plants, allowing to make up for any deficiencies.
The presence of potassium sulphate - in a very soluble form and available for root absorption - promotes the formation of sugars and is therefore essential to ensure high quality productions.
Magnesium provides a considerable input for all vegetable and fruit crops, in order to prevent nutritional deficiencies and ensure the best physiological processes.

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**34%**
Amino acids and proteins (Nx6.25)	20%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	3%
Organic nitrogen (N)	**3%**
Phosphoric anhydride (P_2O_5)	**10%**
Total potassium oxide (K_2O)	**5%**
Organic carbon (C)	20%
Sulphuric anhydride (SO_3)	6%
Magnesium oxide (MgO) of mineral origin	**2%**
Calcium (CaO) natural origin	**8%**
C/N	6.6
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	500-600 kg/ha
Greenhouse vegetable crops	mid-autumn to late spring	scatter the product in soil preparation	400-500 kg/ha
Open field crops (beets)	mid-autumn to late spring	scatter the product in soil preparation	400-500 kg/ha
Flower crops	mid-autumn to late spring	scatter the product in soil preparation	400-500 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA BALANCE 4.3.3

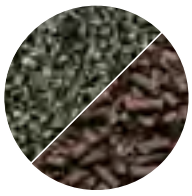
PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER NPK

GRENA BALANCE is recommended for vegetables crops

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Organic: meatmeal and feather meal
Mineral: soft ground rock phosphate and potassium sulphate



Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

A new innovative natural fertilizer, obtained from Thermal Hydrolysis of proteins rich in amino acid, humic and fulvic acids. High content of amino acid leads this product to be suitable for spring-autumn fertilizing applications, where it helps immediate root generation and propagation. This empowers the root system to absorb the essential nutrients faster therefore to stimulating the total plant growth. **GRENA BALANCE has been known to on the one hand, enable the reduction of total annual fertiliser consumption and on the other hand increase the farm productivity.**
The use of this product is recommended for those producers who are willing to step up sustainable agriculture and farm input efficiency management. As an additional value GRENA BALANCE contains 47% organic substance which it ensures the soil chemical and physical enhancement. Several applications of GRENA BALANCE increase the soil carbon saturation as containing high level of organic carbon (27%). This in particular increase the soil beneficial microorganisms' symbiosis at Rhizosphere level which cause under/aboveground growth increment, through high nutrients efficiency.

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	2.51 g/100 g
Glutamic Acid	3.25 g/100 g
Alanine	2.05 g/100 g
Arginine	1.73 g/100 g
Phenylalanine	1.13 g/100 g
Glycine	1.89 g/100 g
Hydroxyproline	0.45 g/100 g
Isoleucine	1.24 g/100 g
Histidine	0.63 g/100 g
Leucine	2.20 g/100 g
Lysine	1.13 g/100 g
Proline	1.70 g/100 g
Serine	1.74 g/100 g
Tyrosine	0.65 g/100 g
Threonine	1.18 g/100 g
Valine	1.61 g/100 g
Cysteine and Cystine	0.38 g/100 g
Methionine	0.39 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.12 g/100 g
Alanine	0.24 g/100 g
Leucine	0.11 g/100 g

MICRO-ELEMENTS	
B	4.62 mg/kg
Fe	661 mg/kg
Mn	37.2 mg/kg
Zn	67.2 mg/kg

COMPOSITION	
Organic matter	60%
Organic substance (Cx1.724)	**47%**
Amino acids and proteins (Nx6.25)	25%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	4%
Organic nitrogen (N)	**4%**
Phosphoric anhydride (P_2O_5)	**3%**
Total potassium oxide (K_2O)	3%
Organic carbon (C)	27%
C/N	6.7
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	mid-autumn to last winter	localized distribution per row	800-1200 kg/ha
Olive groves	mid-autumn to last winter	localized distribution per row	600-1000 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to last winter	localized distribution per row	600-800 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1000 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	700-1000 kg/ha
Canapa	autumn - spring	scatter the product in soil preparation	1200 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA VERDE 4.5.8 S +2 MgO +18 CaO

PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER

GRENA VERDE 4.5.8 S (18 CaO) is obtained by reaction between the organic matrix and mineral materials: soft ground rock phosphate, potassium sulphate and dolomite; all are allowed in organic farming.
The balanced allocation of organic nitrogen, phosphorus and potassium, makes GRENA VERDE an excellent product for the maintenance in the autumn-winter period.
The presence of CaO activates the amino acids in the organic GRENA matrix, thus supporting the growth of plants and enhancing the taste of the fruit, while simultaneously building up the defenses of the plant.

GRENA VERDE is recommended for the fertilization in the autumn-winter period

FREE FROM PHOSPHITES AND CHROMIUM VI

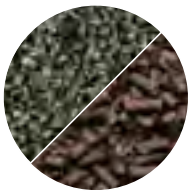
AMINO ACIDS	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**41%**
Amino acids and proteins (Nx6.25)	25%
Humic and fulvic acids	11%
Humidity	7%
Total nitrogen (N)	4%
Organic nitrogen (N)	**4%**
Phosphoric anhydride (P_2O_5)	**5%**
Total potassium oxide (K_2O)	**8%**
Organic carbon (C)	24%
Magnesium oxide (MgO) mineral origin	**2%**
Sulphuric anhydride (SO_3)	13%
Calcium (CaO) natural origin	**18%**
C/N	6
Specific weight	0.85 kg/L

SOURCE
Organic: meatmeal and feathermeal
Mineral: soft ground rock phosphate, potassium sulphate and dolomite



Physical state: micro 2 mm - pellet 4 mm

Packaging available:
10 kg bags - 25 kg bags - 500 kg big bags

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	600-800 kg/ha
Greenhouse vegetable crops	mid-autumn to late spring	scatter the product in soil preparation	800-1000 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA LIFE 4.6.10 S +2 MgO

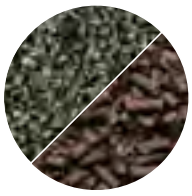
PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER WITH POTASSIUM SULPHATE

GRENA LIFE is recommended for the fertilization in the autumn-winter period

FREE FROM PHOSPHITES AND CHROMIUM VI

SOURCE
Organic: meatmeal and feathermeal
Mineral: soft ground rock phosphate, potassium sulphate and dolomite



Physical state: micro 2 mm - pellet 4 mm

Packaging available:
10 kg bags - 25 kg bags - 500 kg big bags

The balanced allocation of organic nitrogen, phosphorus and potassium makes GRENA LIFE **an excellent product** for the fertilization in the autumn-winter period.
The presence of mineral magnesium activates the amino acids in the organic GRENA matrix, thus supporting the growth of plants and enhancing the taste of the fruit, while building up the defences of the plant.
GRENA LIFE is available in micro-pellets (2 mm). The small size **allows for a significant reduction in quantities and a homogeneous** distribution with low visual impact.
This is an important feature **on grassy orchards and vineyards**, or ornamental lawns and sport fields. Guaranteed totally free of weed seeds, coliform bacteria, antibiotics, pathogens.

AMINO ACIDS	
Aspartic Acid	1.71 g/100 g
Glutamic Acid	2.99 g/100 g
Alanine	1.13 g/100 g
Arginine	1.55 g/100 g
Phenylalanine	0.95 g/100 g
Glycine	1.67 g/100 g
Hydroxyproline	0.14 g/100 g
Isoleucine	0.94 g/100 g
Histidine	0.24 g/100 g
Leucine	1.78 g/100 g
Lysine	0.69 g/100 g
Proline	1.68 g/100 g
Serine	2.00 g/100 g
Tyrosine	0.73 g/100 g
Threonine	0.99 g/100 g
Valine	0.33 g/100 g
Cysteine and Cystine	0.61 g/100 g
Methionine	0.27 g/100 g
Tryptophan	0.19 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**39%**
Amino acids and proteins (Nx6.25)	20%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	4%
Organic nitrogen (N)	**4%**
Phosphoric anhydride (P_2O_5)	**6%**
Total potassium oxide (K_2O)	**10%**
Organic carbon (C)	23%
Sulphuric anhydride (SO_3)	9%
Magnesium oxide (MgO) mineral origin	**2%**
Calcium (CaO) natural origin	**15%**
C/N	5.7
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	600-800 kg/ha
Greenhouse vegetable crops	mid-autumn to late spring	scatter the product in soil preparation	800-1000 kg/ha
Open field crops (beets)	mid-autumn to late spring	scatter the product in soil preparation	800-1000 kg/ha
Flower crops	mid-autumn to late spring	scatter the product in soil preparation	800-1000 kg/ha
Ornamental lawns and gardens	mid-autumn to late spring	scatter the product in soil preparation	800-1200 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRAN SEMINA 4.10

PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER NP

GRAN SEMINA is an organo-mineral fertilizer NP whose GRENA organic matrix, rich in amino acids, favours root proliferation, promotes some mycorrhizae and, through the **naturally present humic and fulvic acids promotes the formation of the phosphorus humic complex increasing the availability of phosphorus in the soil.**
The high percentage of phosphorus promptly acts at the beginning of the growing phase, giving extra strength to the plant.
The amino acids in GRAN SEMINA anticipate flowering because it facilitates the process of energy metabolism and synthesis reactions, increases resistance to cold and to parasitic diseases. Thanks to the naturally present microelements, GRAN SEMINA increases the metabolism of auxins and germination, especially on cereals.

GRENA GRAN SEMINA is recommended for cereals and grains

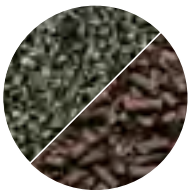
FREE FROM PHOSPHITES AND CHROMIUM VI

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**39%**
Amino acids and proteins (Nx6.25)	20%
Humic and fulvic acids	6%
Humidity	7%
Total nitrogen (N)	4%
Organic nitrogen (N)	**4%**
Phosphoric anhydride (P_2O_5)	**10%**
Organic carbon (C)	23%
Calcium (CaO) natural origin	**8%**
C/N	5.7
Specific weight	0.85 kg/L



SOURCE
Organic: meatmeal and feathermeal
Mineral: soft ground rock phosphate

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Rapeseed	on second harvest	scatter the product in soil preparation	400-450 kg/ha
Wheat and rye	autumn - winter	scatter the product in soil preparation	400-450 kg/ha
Corn	pre-sowing or pre-transplant	scatter the product in soil preparation	400-450 kg/ha
Beets	autumn - winter	scatter the product in soil preparation	500-600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRENA TURF 8.3.3

PERMITTED IN ORGANIC FARMING BIO

ORGANO-MINERAL FERTILIZER NPK

GRENA TURF is ideal for turf rolls and golf courses

GRENA TURF 8.3.3 is particularly suitable to trigger an increase in the retention capacity of nutrients for biological absorption.
The slow-release organic nitrogen present together with the natural presence of calcium (CaO) contributes to the resilience of plant tissues while also providing a corrective action to the pH of the soil.
The distinctive presence of amino acids, promote root proliferation by increasing the absorption capacity of nutrients. They also boost the assimilation of the NPK macro- and micro-elements present in the soil.
The balanced distribution of phosphorus and potassium makes GRENA TURF 8.3.3 an excellent product for lawn maintenance in the autumn-winter period.
GRENA TURF 8.3.3 is available in micro pellets for a homogeneous distribution with low visual impact, ideal on ornamental lawns and sports fields.

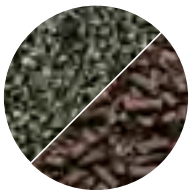
AMINO ACIDS	
Aspartic Acid	2.56 g/100 g
Glutamic Acid	4.59 g/100 g
Alanine	1.74 g/100 g
Arginine	2.42 g/100 g
Phenylalanine	1.40 g/100 g
Glycine	2.55 g/100 g
Hydroxyproline	0.15 g/100 g
Isoleucine	1.40 g/100 g
Histidine	0.38 g/100 g
Leucine	2.73 g/100 g
Lysine	1.11 g/100 g
Proline	2.53 g/100 g
Serine	3.26 g/100 g
Tyrosine	1.08 g/100 g
Threonine	1.50 g/100 g
Valine	2.09 g/100 g
Cysteine and Cystine	0.82 g/100 g
Methionine	0.36 g/100 g
Tryptophan	0.23 g/100 g

MICRO-ELEMENTS	
B	1.16 mg/kg
Co	0.221 mg/kg
Fe	644 mg/kg
Mn	54.1 mg/kg
Mo	0.639 mg/kg
Zn	115 mg/kg

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.08 g/100 g
Glycine	0.02 g/100 g
Isoleucine	0.02 g/100 g
Leucine	0.02 g/100 g
Lysine	0.01 g/100 g
Proline	0.01 g/100 g
Serine	0.02 g/100 g
Valine	0.02 g/100 g

COMPOSITION	
Organic matter	64%
Organic substance (Cx1.724)	**52%**
Amino acids and proteins (Nx6.25)	50%
Humic and fulvic acids	17,2%
Humidity	7%
Total nitrogen (N)	**8%**
Organic nitrogen (N)	8%
Phosphoric anhydride (P_2O_5)	3%
Potassium oxide (K_2O)	3%
Organic carbon (C)	30%
Calcium (CaO) natural origin	**15%**
C/N	2.9
Specific weight	0.85 kg/L

FREE FROM PHOSPHITES AND CHROMIUM VI



SOURCE
Organic: meatmeal and feathermeal
Mineral: soft ground rock phosphate, potassium sulphate

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Turf rolls	Autumn - winter	scatter the product in soil preparation	600-1000 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.



FERTILIZERS NPK, NP and NK for conventional agricolture

The wide choice of NPK fertilizers for conventional agriculture proposed by Grena allows to find the right balance of macro-nutrients in relation to the needs of crops.
The mineral fertilizers added and mixed by reaction to the organic Grena matrix of animal origin generate a very strong bond between the NPK elements and the laevorotatory amino acids making the Grena organo-minerals slow release without washout.

CONVENTIONAL ORGANO-MINERAL FERTILIZERS NPK - NP - NK

with nitrogen slow release

FERTIGRENA 4.0.12

FERTIGRENA 5.13.8 S

GRAN VIGNETO 7.5.12

GRAN VIGNETO 7.5.12 S

FERTIGRENA 7.5.12 S +Fe

FERTIGRENA 7.12.6

FERTIGRENA 10.20

FERTIGRENA N12 SPRINT

GRENA STARTER 12.5.6

FERTIGRENA 12.5.6 S

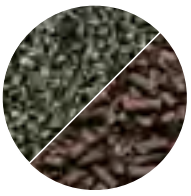
FERTIGRENA 4.0.12

ORGANO-MINERAL FERTILIZER NK
PHYTOSTIMULANT OBTAINED BY REACTION

FERTIGRENA 4.0.12 is ideal for basic fertilisation of vineyards

FERTIGRENA 4.0.12 is an organo-mineral fertilizer NK particularly suitable for vineyards and orchards where the of phosphorus in the soil is high.
The high intake of organic potassium in the product allows the formation of sugars for a quality production.
The amount of organic substance is high in this organo-mineral fertilizer and with humic and fulvic acids it integrates the nutritive effect of amino acids with the formation of humic compounds that will allow the assimilation of potassium.
Just this aggregation by reaction of the mineral with the organic substance allows to have a fertilizer without washout once spread in the soil, a particularly important feature in the periods of intense autumn and spring rain, when the product is usually scattered.

FREE FROM CHROMIUM VI



SOURCE
Organic: meatmeal
Mineral: ammonium sulphate and potassium chloride

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**39%**
Amino acids and proteins (Nx6.25)	20%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	**4%**
Organic nitrogen (N)	2%
Ammoniacal nitrogen (N)	2%
Potassium oxide (K_2O) soluble in water	**12%**
Organic carbon (C)	23%
Calcium (CaO) natural origin	**8%**
C/N	5.7
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	mid-autumn to late spring	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	mid-autumn to late spring	localized distribution per row	500-600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

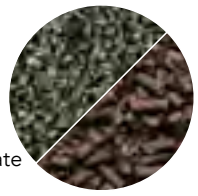
FERTIGRENA 5.13.8 S +3 MgO +8 CaO

ORGANO-MINERAL FERTILIZER NPK WITH POTASSIUM SULPHATE PHYTOSTIMULANT OBTAINED BY REACTION - LOW CHLORINE CONTENT

FERTIGRENA 5.13.8 S +3 MgO is recommended for basic fertilisation of orchards and vineyards with phosphorus deficiencies

FERTIGRENA 5.13.8 is an organo-mineral fertilizer ideal for basic fertilisation (orchards and vineyards, in pre-sowing), it is **suitable for all situations where the soils need a greater supply of phosphorus and magnesium.**
As organo-mineral, FERTIGRENA 5.13.8 is constituted by the union of mineral fertilizer and organic matrices of high quality (proteins, amino acids, humic acids and fulvic acids derived from thermal hydrolysis) that promote the root development of the plants.
The micro-nutrients play a catalyst action on the physiological processes of plants, allowing to make up for any shortcomings.
The presence of potassium helps the formation of sugars and is therefore crucial in getting high-quality productions. Magnesium in FERTIGRENA 5.13.8 S helps to prevent nutritional deficiencies of crops. The calcium and sulphur prevent possible deficiencies, and also lead to an increase in production quality.

FREE FROM CHROMIUM VI



SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, diammonium (DAP), potassium sulphate and dolomite

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX

Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS

Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS

B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION

Organic matter	40%
Organic substance (Cx1.724)	**28%**
Amino acids and proteins (Nx6.25)	13%
Humic and fulvic acids	8.5%
Humidity	7%
Total nitrogen (N)	**5%**
Organic nitrogen (N)	2%
Ammoniacal nitrogen (N)	3%
Phosphoric anhydride (P_2O_5)	**13%**
Potassium oxide (K_2O) soluble in water	**8%**
Organic carbon (C)	16%
Sulphate anhydride (SO_3)	8%
Magnesium oxide (MgO) of mineral origin	**3%**
Calcium (CaO) natural origin	**8%**
C/N	3.2
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - winter	localized distribution per row	800-1000 kg/ha
Orchards (pome fruits, stone fruits etc.)	autumn - winter	localized distribution per row	800-1000 kg/ha
Citrus fruits	autumn - winter	localized distribution per row	800-1000 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1000 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	800-1000 kg/ha

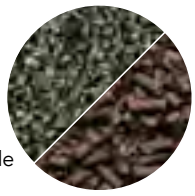
*guidelines only, for the correct use of our products, please consult a specialist.

GRAN VIGNETO 7.5.12 +2 MgO +8 CaO

ORGANO-MINERAL FERTILIZER NPK
PHYTOSTIMULANT OBTAINED BY REACTION

GRAN VIGNETO is an organo-mineral fertilizer ideal for basic fertilisation (orchards and vineyards).
The percentage of total nitrogen is harmonized with a presence of ammoniacal and organic nitrogen.
Together with **the presence of phosphorus and potassium creates a synergy where phosphorus helps to strengthen the cell walls of the plant and potassium promotes the formation of sugars; it is helped in this function by the amino acids that stimulate and increase of radical absorption.**
The magnesium and calcium in GRAN VIGNETO help prevent nutritional deficiencies in crops and provide better physiological processes.
In vineyards in particular, it promotes the development of regular internodes and a net increase in the final Babo grade.

FREE FROM CHROMIUM VI



SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, diammonium (DAP), potassium chloride and dolomite

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**28%**
Amino acids and proteins (Nx6.25)	10%
Humic and fulvic acids	8.5%
Humidity	7%
Total nitrogen (N)	**7%**
Organic nitrogen (N)	1.6%
Ammoniacal nitrogen (N)	5.4%
Phosphoric anhydride (P_2O_5)	**5%**
Potassium oxide (K_2O) soluble in water	**12%**
Organic carbon (C)	16%
Sulphuric anhydride (SO_3)	15%
Magnesium oxide (MgO) of mineral origin	**2%**
Calcium (CaO) natural origin	**8%**
C/N	2.3
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - winter	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, etc.)	autumn - winter	localized distribution per row	500-600 kg/ha
Citrus fruits	autumn - winter	localized distribution per row	1400-1600 kg/ha
Open field crops	pre-sowing	scatter the product in soil preparation	500-600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

GRAN VIGNETO 7.5.12 S +2 MgO +8 CaO

ORGANO-MINERAL FERTILIZER NPK
PHYTOSTIMULANT OBTAINED BY REACTION - LOW CHLORINE CONTENT

GRAN VIGNETO from potassium sulphate is an organo-mineral fertilizer ideal for basic fertilisation of vineyards. It promotes the development of regular internodes with an increase of the final Babo grade.
The total nitrogen is harmonized by the presence of ammoniacal and organic nitrogen: together with the presence of phosphorus and potassium, it creates a synergy. Phosphorus helps to strengthen the cell walls of the plant and potassium promotes the formation of sugars; it is helped in this function
by the amino acids that stimulate and increase of radical absorption.
With its low chlorine content it is ideal to use wherever there is little rainfall to prevent any increase of salinity in the soil.

FREE FROM CHROMIUM VI

SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, diammonium (DAP), potassium sulphate and dolomite

Physical state: pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**28%**
Amino acids and proteins (Nx6.25)	10%
Humic and fulvic acids	8.5%
Humidity	7%
Total nitrogen (N)	**7%**
Organic nitrogen (N)	1.6%
Ammoniacal nitrogen (N)	5.4%
Phosphoric anhydride (P_2O_5)	**5%**
Potassium oxide (K_2O) soluble in water	**12%**
Organic carbon (C)	16%
Sulphuric anhydride (SO_3)	15%
Magnesium oxide (MgO) of mineral origin	**2%**
Calcium (CaO) natural origin	**8%**
C/N	2.3
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - winter	localized distribution per row	500-600 kg/ha
Orchards (pome fruits, stone fruits, etc.)	autumn - winter	localized distribution per row	500-600 kg/ha
Citrus fruits	autumn - winter	localized distribution per row	1400-1600 kg/ha
Open field crops	pre-sowing	scatter the product in soil preparation	500-600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

FERTIGRENA 7.5.12 S +1 Fe

ORGANO-MINERAL FERTILIZER NPK WITH POTASSIUM SULPHATE PHYTOSTIMULANT OBTAINED BY REACTION - LOW CHLORINE CONTENT

FERTIGRENA 7.5.12 S +1 Fe is ideal for vineyards subject to iron chlorosis

FERTIGRENA 7.5.12 S with iron is an organo-mineral fertilizer ideal for basic fertilisation (orchards and vineyards).
FERTIGRENA 7.5.12 S with iron promotes and helps maintain the vitality of the soil flora and microbial fauna, helps combat iron chlorosis, and promotes better absorption of micro-elements, allowing to compensate for any deficiencies.
The percentage of total nitrogen is harmonised in a gradual presence of ammoniacal and organic nitrogen, and together with the **presence of phosphorus and potassium** sulphate they are of fundamental importance in achieving high quality productions.

FREE FROM CHROMIUM VI

SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, diammonium (DAP), potassium sulphate and iron sulphate

Physical state: pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX

Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS

Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS

B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION

Organic matter	40%
Organic substance (Cx1.724)	**28%**
Amino acids and proteins (Nx6.25)	10%
Humic and fulvic acids	8.5%
Humidity	7%
Total nitrogen (N)	**7%**
Organic nitrogen (N)	1.6%
Ammoniacal nitrogen (N)	5.4%
Phosphoric anhydride (P_2O_5)	**5%**
Potassium oxide (K_2O) soluble in water	**12%**
Organic carbon (C)	16%
Sulphuric anhydride (SO_3)	15%
Calcium (CaO) natural origin	**8%**
Iron (Fe)	**1%**
C/N	2.3
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards	autumn - winter	localized distribution per row	600-800 kg/ha
Orchards (pome fruits, stone fruits, etc.)	autumn - winter	localized distribution per row	600-800 kg/ha
Citrus fruits	autumn - winter	localized distribution per row	1400-1600 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

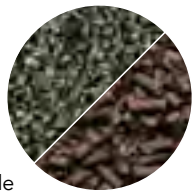
FERTIGRENA 7.12.6

ORGANO-MINERAL FERTILIZER NPK PHYTOSTIMULANT OBTAINED BY REACTION

FERTIGRENA 7.12.6 promotes and helps to maintain the vitality of the soil flora and microbial fauna.
The micro-nutrients can play a catalyst action of the physiological processes in plants, allowing you to make up for any shortcomings.
The percentage of ammoniacal nitrogen is harmonised with a high percentage of phosphorus and potassium sulphate, all in a very soluble form, promoting plant nutrition, strengthening of cell walls and the formation of sugars, therefore of fundamental importance in achieving high quality productions.

FERTIGRENA 7.12.6 is recommended for basic fertilisation of orchards and citrus fruits with phosphorus deficiencies

FREE FROM CHROMIUM VI



SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, diammonium (DAP), potassium chloride

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX

Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS

Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS

B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION

Organic matter	40%
Organic substance (Cx1.724)	**29%**
Amino acids and proteins (Nx6.25)	10%
Humic and fulvic acids	8.5%
Humidity	7%
Total nitrogen (N)	**7%**
Organic nitrogen (N)	1.6%
Ammoniacal nitrogen (N)	5.4%
Phosphoric anhydride (P_2O_5)	**12%**
Potassium oxide (K_2O) soluble in water	**6%**
Organic carbon (C)	17%
Sulphuric anhydride (SO_3)	7%
Calcium (CaO) natural origin	**8%**
C/N	2.4
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Orchards (pome fruits, stone fruits, etc.)	autumn - spring	localized distribution per row	500-700 kg/ha
Citrus fruits	autumn - spring	scatter the product in a dosage of 3/4 kg per plant	1400-1600 kg/ha
Greenhouse vegetable crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-1000 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

FERTIGRENA 10.20 +9 CaO

ORGANO-MINERAL FERTILIZER NP
PHYTOSTIMULANT OBTAINED BY REACTION

FERTIGRENA 10.20 is ideal for cereals and tomato in intensive farming

FERTIGRENA 10.20 is an organo-mineral fertilizer ideal for basic fertilisations.
As an organo-mineral, FERTIGRENA 10.20 is constituted by the combination of high-quality mineral fertilizers and organic matrices (proteins, amino acids, humic acids and fulvic acids derived from thermal hydrolysis) that promote the root development of the plants facilitating the absorption of the nutrients contained in the fertilizer and soil.
FERTIGRENA 10.20 **promotes and helps to maintain the vitality of the soil flora and microbial fauna.**
The percentage of total nitrogen harmonized in a gradual presence of ammoniacal and organic nitrogen promotes the growth and vigour of the plants.
The presence of **20% phosphorus**, of organic and mineral origin along with the **naturally present calcium**, strengthens the plant tissues making the plant stronger and increasing the quality of the fruit.

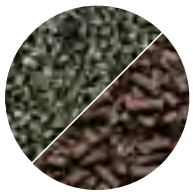
AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**31%**
Amino acids and proteins (Nx6.25)	10%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	**10%**
Organic nitrogen (N)	1%
Ammoniacal nitrogen (N)	9%
Phosphoric anhydride (P_2O_5)	**20%**
Sulphuric anhydride (SO_3)	9%
Organic carbon (C)	18%
Total calcium (CaO)	**9%**
C/N	**1.8**
Specific weight	0.85 kg/L

FREE FROM CHROMIUM VI



SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, diammonium (DAP)

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Orchards (pome fruits, stone fruits, citrus fruits etc.)	autumn - winter	localized distribution per row	500-700 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Tomatoes	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Cereals	autumn - winter	scatter the product in soil preparation and burying it slightly	300-600 kg/ha
Vineyards	autumn - winter	localized distribution per row	500-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

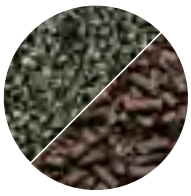
FERTIGRENA N12 SPRINT

ORGANO-MINERAL FERTILIZER
PHYTOSTIMULANT OBTAINED BY REACTION

FERTIGRENA N12 SPRINT CALCIO is an organo-mineral fertilizer, ideal for basic fertilization for a variety of soils in conventional agriculture.
The high content of Nitrogen is gradually released, creating a synergetic curve for spring growth that starts with the immediacy of ammoniacal nitrogen and is then followed by the boost provided by the ureic nitrogen.
In the background, the slow-release organic nitrogen continues and completes the mineralization process, contributing to a steady growth and an overall good plant health. The high percentage of organic substance binds the N through the naturally present humic and fulvic acids, channeling nutrition to the roots.
Perfect for use in conventional farming, such as with flowers and nurseries, turf rolls and ornamental lawns, but also in non-organic orchards and fields.

FERTIGRENA N12 is ideal for flowers and conventional orchards

FREE FROM CHROMIUM VI



SOURCE
Organic: feathermeal
Mineral: ammonium sulphate and urea

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX

Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS

Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS

B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION

Organic matter	40%
Organic substance (Cx1.724)	**26%**
Amino acids and proteins (Nx6.25)	12.5%
Humic and fulvic acids	4%
Humidity	7%
Total nitrogen (N)	**12%**
Organic nitrogen (N)	2%
Ammoniacal nitrogen (N)	9%
Ureic nitrogen (N)	1%
Sulphuric anhydride (SO_3)	20%
Organic carbon (C)	15%
Total calcium (CaO)	**13%**
C/N	**1.5**
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Olive groves and orchards	autumn - winter	scatter the product in soil	800-1200 kg/ha
Flower crops	pre-sowing or pre-transplant	scatter the product in soil preparation and burying it slightly	500-600 kg/ha
Ornamental lawns and gardens	winter - spring	scatter the product in soil	800-1000 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

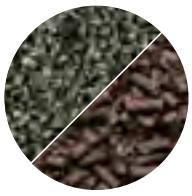
GRENA STARTER 12.5.6

ORGANO-MINERAL FERTILIZER NPK
PHYTOSTIMULANT OBTAINED BY REACTION

GRENA STARTER 12.5.6 is recommended for its starter effect in spring fertilisations

GRENA STARTER 12.5.6 is obtained by reaction between the GRENA organic matrix and high-quality mineral materials.
The high percentage of total nitrogen is harmonized by a gradual presence of ammonia, ureic and organic nitrogen, from which an ideal release curve for spring growth is obtained. **The simultaneous presence of phosphorus and potassium creates a synergic nutritive** action on the root system, making the plant treated with GRENA STRARTED 12.5.6 stronger and healthier.
In fact, nitrogen stimulates a more lush bloom and the formation of more tender vegetable tissue, while potassium stimulates the formation of thicker cell walls, which increase the intrinsic resistance of the tissue to parasitic infections.
GRENA STARTER in micro form **allows a significant reduction in doses** and allows a homogeneous and practically invisible distribution, an important feature when the product is used on ornamental lawns, or on golf courses and football fields.

FREE FROM CHROMIUM VI



SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, diammonium (DAP), urea, potassium chloride

Physical state: micro 2 mm - pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX	
Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS	
Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS	
B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION	
Organic matter	40%
Organic substance (Cx1.724)	**26%**
Amino acids and proteins (Nx6.25)	10%
Humic and fulvic acids	6.9%
Humidity	7%
Total nitrogen (N)	**12%**
Organic nitrogen (N)	1%
Ammoniacal nitrogen (N)	10%
Ureic nitrogen (N)	1%
Phosphoric anhydride (P_2O_5)	**5%**
Potassium oxide (K_2O) soluble in water	**6%**
Organic carbon (C)	15%
Sulphuric anhydride (SO_3)	11%
Calcium (CaO) natural origin	**8%**
C/N	1.25
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Vineyards and orchards	autumn - winter	localized distribution per row	500-700 kg/ha
Olive groves	autumn - winter	localized distribution per row	1400-1600 kg/ha
Citrus fruits	autumn - spring	scatter the product in a dosage of 3/4 kg per plant	1400-1600 kg/ha
Open field crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Ornamental lawns and gardens	winter - spring	scatter the product in soil	800-1000 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

FERTIGRENA 12.5.6 S +2 MgO +8 CaO

ORGANO-MINERAL FERTILIZER NPK WITH POTASSIUM SULPHATE PHYTOSTIMULANT OBTAINED BY REACTION - LOW CHLORINE CONTENT

FERTIGRENA 12.5.6 S is ideal for olive groves, has a starter effect and contains sulphate potassium

FERTIGRENA 12.5.6 is an organo-mineral fertilizer ideal for basic starter fertilisation (orchards and vineyards, in pre-sowing).
FERTIGRENA 12.5.6 is constituted by the union of mineral fertilizers and organic matrices of high quality (proteins, amino acids, humic acids and fulvic acids derived from thermal hydrolysis) that promote the root development of the plants facilitating the absorption of the nutrients contained in the fertilizer and soil.
The micro-nutrients can spur the physiological processes in plants, allowing you to make up for any shortcomings.
The simultaneous presence of phosphorus and potassium creates a synergy of nutritive action against the root system that makes the plant treated with FERTIGRENA 12.5.6 tougher and thriving. With hazel plants the **magnesium in FERTIGRENA 12.5.6, is also important in order to improve fruit set and therefore hazelnut production.**

FREE FROM CHROMIUM VI

SOURCE
Organic: meatmeal
Mineral: ammonium sulphate, urea, diammonium (DAP), potassium sulphate and dolomite

Physical state: pellet 4 mm

Packaging available:
25 kg bags - 500 kg bags

AMINO ACIDS IN GRENA MATRIX

Aspartic Acid	1.25 g/100 g
Glutamic Acid	1.62 g/100 g
Alanine	1.02 g/100 g
Arginine	0.83 g/100 g
Phenylalanine	0.56 g/100 g
Glycine	0.95 g/100 g
Hydroxyproline	0.22 g/100 g
Isoleucine	0.62 g/100 g
Histidine	0.31 g/100 g
Leucine	1.10 g/100 g
Lysine	0.56 g/100 g
Proline	0.85 g/100 g
Serine	0.87 g/100 g
Tyrosine	0.33 g/100 g
Threonine	0.59 g/100 g
Valine	0.80 g/100 g
Cysteine and Cystine	0.18 g/100 g
Methionine	0.19 g/100 g
Tryptophan	0.09 g/100 g

FREE AMINO ACIDS

Glutamic Acid	0.06 g/100 g
Alanine	0.12 g/100 g
Leucine	0.05 g/100 g

MICRO-ELEMENTS

B	2.30 mg/kg
Fe	330 mg/kg
Mn	18.6 mg/kg
Cu	2.87 mg/kg
Zn	33.6 mg/kg

COMPOSITION

Organic matter	40%
Organic substance (Cx1.724)	**26%**
Amino acids and proteins (Nx6.25)	20%
Humic and fulvic acids	7%
Humidity	7%
Total nitrogen (N)	**12%**
Organic nitrogen (N)	1%
Ammoniacal nitrogen (N)	10%
Ureic nitrogen (N)	1%
Total Phosphoric anhydride (P_2O_5)	**5%**
Potassium oxide (K_2O) soluble in water	**6%**
Organic carbon (C)	15%
Sulphuric anhydride (SO_3)	11%
Magnesium oxide (MgO)	**2%**
Calcium (CaO) natural origin	**8%**
C/N	1.25
Specific weight	0.85 kg/L

CROP	TIMING*	APPLICATION*	DOSAGE/HA*
Olive groves	autumn - winter	localized distribution per row	600-800 kg/ha
Vineyards	autumn - winter	localized distribution per row	600-800 kg/ha
Orchards (pome fruits, stone fruits, citrus fruits etc.)	autumn - winter	localized distribution per row	600-800 kg/ha
Hazelnuts	autumn - spring	localized distribution per row	600-800 kg/ha
Flower crops	pre-sowing or pre-transplant	scatter the product in soil preparation	600-800 kg/ha
Ornamental nurseries	in spring	scatter the product in soil preparation	600-800 kg/ha

*guidelines only, for the correct use of our products, please consult a specialist.

A FAMILY STORY

The **GRENA** s.r.l. production site was launched in 1956 by the Founder, Teresio Grena Magagna, assisted by his wife Amalia, and they produced protein hydrolysates for zootechnical use. The share capital is still made up entirely of members of the Magagna family, even today. In the 1980s, the turning point took place: our production and marketing of organic fertilizers started from an intuition about the potential of the organic matrix that **GRENA** produced, and that intuition was soon refined by research in this direction.
In the 1990s, organic products were complemented by some organo-minerals and our liquid biostimulant distillate, **IDROGRENA**. This ensured then and continues now to make the range of **GRENA** products versatile even for the most demanding clientele.

After fifteen years during which we produced fertilizers for third-party companies, in 1995 **GRENA** entered the market determined to assert its own brand. Since 2011, **GRENA** s.r.l. has further specialized its output, adding to the pellet production a new line of products in micro flakes form, something that has immediately had excellent feedback from customers. This is because it is even more versatile than pellets and therefore suitable for use in difficult soils, greenhouses and protected crops. Add to that that the product does not necessarily have to be buried but is nevertheless of rapid mineralization and you have a winning solution. The brainchild of one of the Magagna brothers, **GRENA ULTRA MICRO** is the embodiment of our micro form line: innovative, multi-purpose, and of high quality.

The presence of GRENA products is no longer confined to the national market but crosses borders in Europe and beyond. Today it is possible to count French winemakers and Spanish olive growers among the users of our biostimulants, as well as the apple producers of Poland and Germany, the horticultural productions of Hungary, Slovenia and Bosnia, fruit growers from Croatia and raspberry producers from Serbia, strawberry-growers on the island of Malta and olive-growers from Greece, Morocco, and Lebanon, producers of pistachios in Iran and banana growers in the Dominican Republic and Ecuador. Within the great convivial feast that GRENA has become, both Italian and foreign collaborators find space for growth, achievement and satisfaction, in a mutual meeting of ideas and development for the betterment of agriculture.

RESEARCH & DEVELOPMENT

Research is indispensable for the development of new formulations and thus a crucial pursuit for GRENA. It grants us a stage to develop the optimal use of our products, or check the compatibility of our liquid biostimulants integrated with the use of phytosanitary products.

Our confidence in the reliability of GRENA products has been confirmed by multiple rounds of daily feedback that we receive from customers, true architects of the success of GRENA biostimulants. Field tests carried out by our clients, with the support of our local technicians, are another vital part of our research work. In this way, our products can be tested under the most varied conditions.

The collaboration with the University of Bologna (Department of Agricultural Sciences) and with the University of Turin (UPTOPFARM) is carried out in laboratories with tests and in the field with performance checks, especially as regards to tolerance to abiotic stress, such as drought, and salinity.

Through collaborations with test companies such as Hort@, Terremerse, Foundation for Agriculture Brothers Navarra, and Alsia Test Centre, we verify how amino acids and peptides promote the accumulation of proteins, sugars, and antioxidants. Last but not least, these partnerships allows to regularly audit our eco-friendly productivity standing.

MAKE WAY FOR THE YOUNG!

GRENA welcomes young workers from a variety of fields of knowledge, and we embrace their contribution in terms of ideas as well as energy and innovation.

COMMUNICATION & INFORMATION

The collaboration with the University of Bologna, with the University of Turin, with experts and university professors involved in the field, continues with the dissemination of data obtained through conferences, open to the public and held at major industry events.
The events are open to all those wishing to deepen their knowledge of biostimulants and their usage. **Invitations via email can be obtained by writing to: eventi@grena.com**

The collaboration with the final users of our products is also articulated through the website where, in addition to finding the technical data sheets of individual products, fertilisation plans, there is an opportunity **to request specific information and customized fertilisation plans by writing to: grena@grena.com**

You can contact us and find us on the main social networks **(Facebook, Twitter, Instagram, etc.)** to get quick and fast updates on events, expo, fertilisation plans, useful tips for your crops, videos, speakers at conferences, photos of tests and tests in the field. Follow us on:

In addition, our newsletter is active: we periodically communicate to all customers on the list with arrangements, advice to be followed according to environmental adversity or seasonal issues based on various crops, etc...

You can also request an appointment with one of our technicians trough the main video conferencing platforms!

GRENA participates in NATIONAL AND INTERNATIONAL EXPOS AND EVENTS:

INTERPOMA in Bolzano (Italy), FIERA AGRICOLA in Verona (Italy), SIAM in Meknes (Marocco), SITEVI in Montepellier (France)

Refresher training session are planned:

- for employees
- for agents and consultants
- summer school training

Dissemination of knowledge on a national scale is kept up to date regularly through events held by agronomists, with agents and farmers alike in attendance.
These events contribute to sharing the results of the tests in progress and updating one another with information on the best use of GRENA biostimulants.

TECHNICIANS AND AGRONOMISTS IN THE FIELD

Our highly qualified field technicians tend to the needs of farmers to give the right advice on fertilisation for the management of the entire agronomic cycle, for greater productivity, more profitability, and more quality.
From soil preparation to sowing, flowering to ripening and post-harvest: to enrich not only the soil with nutrients but also help maintain healthy and vigorous plants after environmental or production stress.

TEAM GRENA

LOGISTICS & PACKAGING

Care and consideration, from receipt of order to delivery of goods.
All orders are managed through the email:
ordini@grena.com

500 ml and 1 L bottles
available for shipment
in boxes of 6 or 12 bottles

5 L canisters
available for shipment
in boxes of 4 or 60 canisters

25 L canisters
available for shipment
in pallets 1200 kg (48 canisters)

200 L tanks
available for shipment
in pallets 800 kg (4 tanks)

1000 L tanks
25 tanks per truck

25 kg bags
1250 kg pallet
(50 bags)

Shipment with container of 20" with 20 tons
10 pallets of 2000 kg (80 bags of 25 kg)

500 kg big bags

Shipping by truck 25 tons:
20 pallets

Shipping by truck 25 tons:
50 big bags

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