AGRARES
iberia SL

AMINO ACIDS

AGRARES 7

INTRODUCTION (ALPHA) AMINO ACIDS:

The amino acids are of a vital importance in the metabolism of alive beings, from the condition of be the structural units of the proteins; they place under government control in the endogenous regulation of the growth and develop vegetable.

The amino acids are synthesized for the plants as of the nitrogen absorbed in form of nitrate or in form of ammonium of the earth (the leguminous moreover use the atmospheric nitrogen as source in the amino acids synthesis), this prosecute supposes an energy expense of the plant, to avoid this expense strives for a direct addition of amino acids.

The calls amino acids also activators bio can be of three types:

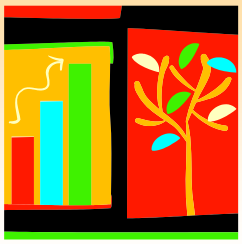
1. **Amino acid of synthesis.**
2. **Amino acids of enzymatic fermentation (eparina)**
3. **Amino acids of hydrolysis.**

Alls theses products characterize for be capable of permit the circulatory torrent of the plant avoiding wear out energetics and being part of the components of the plants.

The amino acids have two form stereochemistries l or d, so much animal as vegetables it forms proteins and have metabolic activity with the l-(alpha) amino acids.

The incorporation of amino acids to the plants can be produced for path it leave or for root. In natural conditions the path for root is the more usual mechanism of entrance of external amino acids. The amino acids are naturally in the earth and can accede to apoplasto for root for diffusion, and it be absorbed for the epidermal cell and for the cortical parenchyma of the root.

If the application is leave a penetration of the solution is produced through the stomas until the apoplasto leave and afterwards transporting to the remainder of the organs and abilities of the plant.



It has been observed that in situations of stress the plant tends to accumulate free amino acids as mechanism of defense; such accumulation has a repercussion a smaller crew of amino acids for the synthesis of proteins. If in these agree exists an exterior compensatory contribution of amino acids, the plants find in improve conditions to renew your growth.

Effects of the amino acids in the plants:

- *Synthesis of proteins.* The L- το amino acids unite to form proteins.

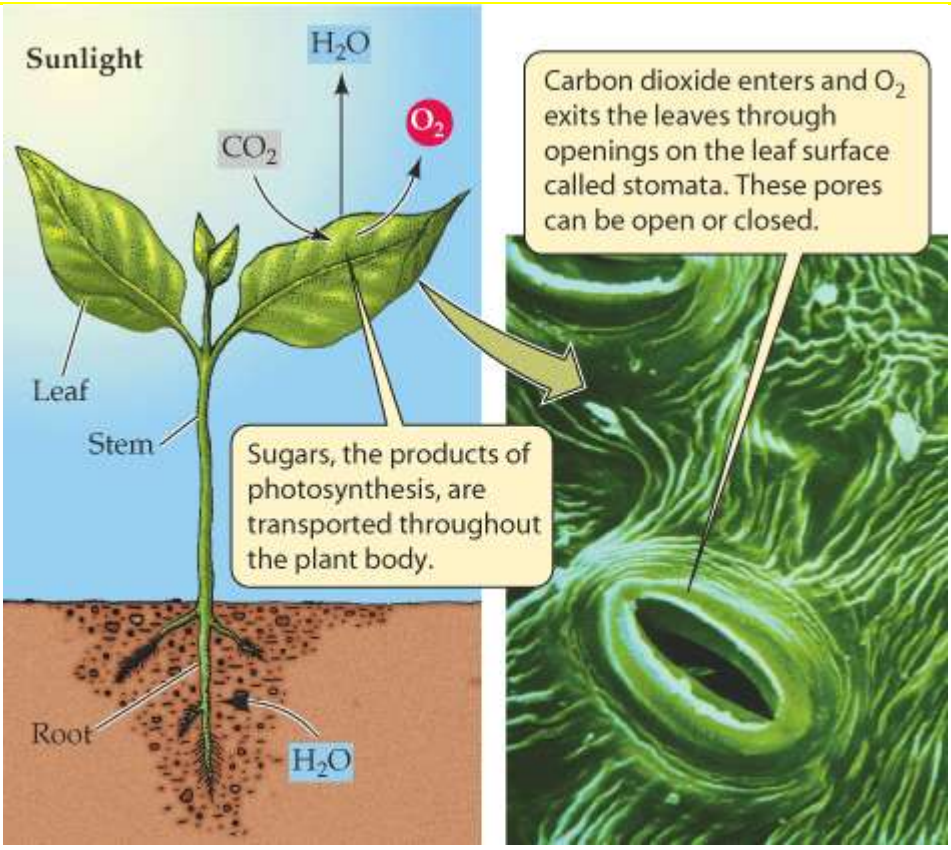
- *Resistance to the stress.* The high temperatures, illnesses, freezing, etcetera repel on the plants. The amino acids and principally the proline acts reducing this risk.

- *Effect on the photosynthesis*. Some amino acids like the Glicine and the acid l-glutamic increase the concentration of chlorophyll accordingly increases the photosynthesis.

- *Quelante effect.* Some amino acids like the Glicine and the acids (l-glutamic and l-aspartic), that have load negative is capable of retain cations by forming chelates. The remainder of amino acids is of positive and neuter load, with it who is not capable of chelating.

-*Effect on the pollination and mincemeat of fruits.* It is demonstrated that amino acids like the proline, glutamic and the Glicine, increase the germination of the grain of pollen by lengthening the pollinic tube.

Opening of stomas:



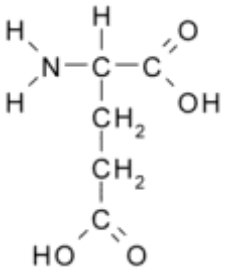
Amino acids like the proline brake the production of abcísico acid and the glutamic by favoring the opening of stomas.

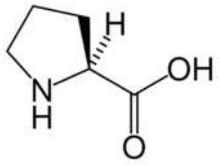
Aminograma of products:

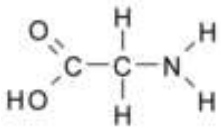
Relative percentages of amino acids

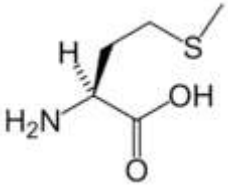
-Lysine	6,9 %	-Alanine	0,05 %
-Histidine	0,6 %	-Cystine and cysteine	1,0 %
-Arginine	0,3 %	-Valine	0,9 %
-Hidroxiproline	7,0 %	*-Methionine	10,2 %
-Aspartic acid	4,0 %	-Isoleucine	0,01 %
-Treonine	0,2 %	-Leucine	5,0 %
-Serine	0,01 %	-Tyrosine	0,4 %
*-Glutamic acid	9,13 %	-Fenilalanine	0,2 %
*-Proline	19,0 %	-Tryptophan	0,1 %
*-Glicine	35,0 %		

Amino acids structure:

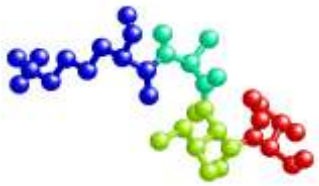
-Glutamic acid: 

line: 

-Glicine: 

Methionine: 

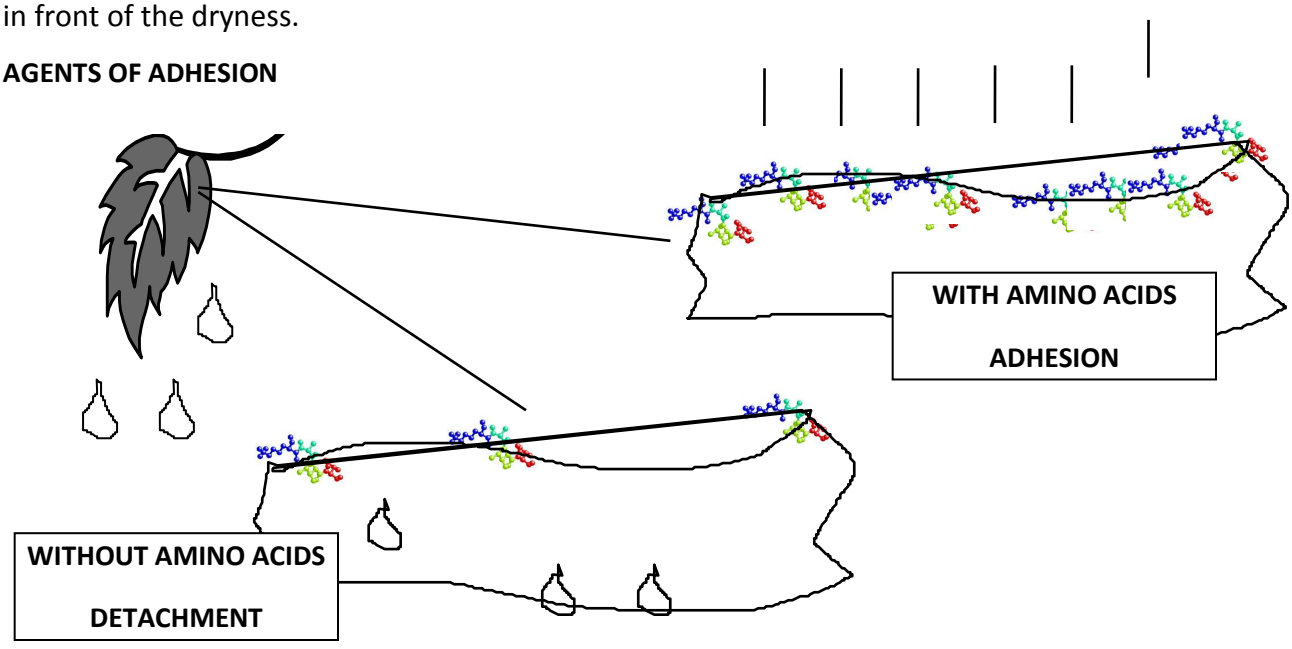
The peptides of the products:



The peptides are unions of several free amino acids, 3,4 or more depending of the size they calls of short or long chain (more than 10).

The peptides have a " filmogenic *effect* **"**, that is to say it form a transparent and permeable cloak that it acts as support for the phytosanitaries and in front of the dryness.

AGENTS OF ADHESION



AGRARES 7% AMINO ACIDS

Composition:

Free amino acids (L-AA) ……7% p/p (8, 4% p/v)
peptides ……10% p/p (12% p/v)
Amino nitrogen ……1, 12% p/p (1, 3% p/v)
Ureico nitrogen ……2, 28% p/p (2.7% p/v)
Protean nitrogen ……2, 72% p/p (3.2% p/v)
Total nitrogen ……5% p/p (6% p/v)
Phosphorous (P_2O_5)……..3, 5% p/p (4.4% p/v)
Potassium (K_2O)……2, 3% p/p (2.9% p/v)
Organic Materia ……..35% p/p (44% p/v)
Organic carbon ……..11.60
Relation C/N……..4.26
Density ……1,2 gr/cc
pH ……5.4

Obtained amino acids from hydrolysis, primary elements obtained as of urea, sour phosphoric and potassic dissolution 99%.

AGRARES 7% amino acids is an activator bio activator from chemical hydrolysis of proteic materials, principally collagenous and keratin. In it's composition are perfectly balanced the free amino acids and the peptides of short chain (oligopeptidoses). Moreover, the product is gotten rich with phosphorous and potassium

Effects of the nitrogen, phosphorous and potassium in the plants

-**Nitrogen**: The nitrogen in union with other elements(it turns into carbon, oxygen, sulfurs, etcetera.) form the denominate albuminoids, proteins or protides, being indispensable in the constitution of the cells. The nitrogen is indispensable for the growth of the vegetables and is related with the increase of vegetable mass, as well as with the performance.

The nitrogen it finds in three forms principally: organic, ammoniac and nitric.

The absorption of the nitrogen of the plant is principally in form nitric (NO_3^-), which acts as departure for the synthesis of proteins.

Advantages of the application of the nitrogen

- Increase of the vegetable mass in all the cultivations, essentially in those of leaf (spinach, lettuce, etcetera.)
- raise the performances in the cultivations when placing under government control in the formation of proteins.

Definition of nitrogen in the cultivations

- It causes rickets of the plant.
- diminish the performance of the cultivation.
- The leaves appear colored yellow reaching to wither the scalloped lace.

Excess of nitrogen

The excess causes a deluxe consumption and also it have consequences on the drooping of cereals, the delay of the ripeness and the increase of criptogámicases illnesses.

-**Potassium**: The potassium in the earth finds to him in form ionic (K^+) and combined in different mineral and organic composites.

The potassium constitutes approximately the 3% of the dry matter in the vegetables being absorbed in big quantities.

The paper of the potash in the plant is very varied, being very important in the photosynthesis because inasmuch as favors the synthesis in the leaf of the glúcidoses or carbohydrates. This favor to the cultivations that it have reserves in glúcidoses as beet, grapevine, potatoes, etcetera. The potash takes part in also in the formation of protides, for it is necessary a good feeding in nitrogenous fertilizer.

Advantages of the application of the potash

- diminish the perspiration of the plant obtaining an economy of water, improving the resistance to the drought.
- raise the content of the sap in mineral elements, then it improves the resistance to

the freezings.

- Along with the phosphoric acid, the potash favors the development for root.
- The potash increases the resistance to criptogámicases illnesses.

Deficiency of potash in the cultivations

- In corn, the leaves wave to him and it form a color but clear.
- In potato, the follicles curve downwards.
- In vineyard, the leaves acquire a lilaceous dyeing, etcetera.

-**Phosphorous**: The phosphorous in the earth is founded in form of phosphoric ions, it is a main element in the vegetables of those who forms part between the 0, 5% to the 1% of the dry matter. The phosphorous takes part in actively in the respiration, synthesis and decomposition of glúcidoses, synthesis of proteins, etcetera.

The phosphoric acid is a factor that favors the development of the above all plant in the first phase of growth.

The development for root also this inter related with contribution of phosphorous.

Advantages of the application of phosphorous

- increase the precocity of the cultivations, favoring the ripeness.
- increase the resistance of the plants to the cold and to the criptogámicases illness.
- Improvement the quality of the fruits.

Deficiency of phosphorous in the plants

- The absence of phosphorous it gets behind to the growth, the s fecundation faulty and exists a delay of the ripeness.
- The deficit plants in phosphorous manifests a green color shading, almost bluish withering the scalloped lace of the leaves.

Dose and mode of application:

AGRARES 7% amino acids are designed for the first path application by root, although also can be applied by leaf, by spray, pulverization, sprinkling, etcetera..., as well as in hydroponic cultivations. It is recommended to apply the product in the first states of the plant to activate the cellular division in roots and buds.
Also it is advisable to apply the product with weed killers of contact to improve the adhesion of the weed killer and avoid the stress of the cultivated plants.

CULTIVATIONS	DOSE LEAVE	EARTH DOSE
Olive trees, vineyard, grape of table, strong, citric, fruit, ornamental and horticultural	250-300cc/Hl. carrying out of 3 to 5 treatments during the cycle.	Expense of 15-20 L/Ha. carrying out of 2 to 3 applications.
Corn, swamp milkweed, beet	250-300cc/Hl. carrying out of 2 to 3 treatments during the cycle.	Expense of 15-20 L/Ha. distributed in 3 to 4 applications.
Alfalfa	250-300cc/Hl. as of the second cut.	10 L/Ha. as of the second cut distributed in 2 to 3 applications.
Almond trees, countersink and other fruit of dry barren land.	Three pulverizations at the rate of 250-300cc/Hl. during the brotación, mincemeat and gets fat.	

Incompatibilities:

amino acids AGRARES 7% is compatible with the majority of phytosanitaries of normal use. It is not compatible with retrieve nor mineral oils, sulfur, sulfocálcicoses products.