- + BIOSTIMULANT
- + ANTI-STRESS
- + BIOCHEMICAL ACTIVATOR









# Activeg

#### **PRODUCT WITH SPECIFIC ACTION**

Vegetal organic matrix, 100% made up of enzymatic hydrolysate of Fabaceae rich in triacontanol, available for all kinds of crops both in foliar applications and fertigation.

#### BENEFITS

+ **BIOSTIMULANT** 

# Activeg

PRODOTTO AD AZIONE SPECIFICA IDROLIZZATO ENZIMATICO DI FABACEAE CONSENTITO IN AGRICOLTURA BIOLOGICA PRODUCT WITH SPECIFIC ACTION BACEAE ENZYMATIC HYDROLYZATE OF FABA ALLOWED IN ORGANIC AGRICULTUR PRODUIT AVEC ACTION SPECIFIQUE HYDROLYSAT ENZYMATIQUE DE FABA ADMIS EN AGRICULTURE BIOLOGIQUE PRODUCTO DE ACCIÓN ESPECÍFICA IDROLIZADO ENZIMÁTICO DE FABACEAS ERMITIDO EN AGRICULTURA ECOLÓGICA



#### Effective stimulation of both root and vegetative development in young plants

+ ANTI-STRESS Stronger resistance against abiotic stress

#### **+ BIOCHEMICAL ACTIVATOR OF NITRATE REDUCTASE**

Better nitrogen's efficiency, by decreasing the quantity of nitrates in vegetal tissues



#### **PRODUCT DESCRIPTION**

Activeg is a biostimulant of vegetal origin. obtained from enzymatic hydrolysate of Fabaceae biomass.

This specific production process allows a good degree of hydrolysis and a high concentration of active compounds related to crops.

Among the active substances produced during this process, triacontanol and free L-amino acids have a specific action on plants, improving chlorophyll photosynthesis, anti-stress effects and biostimulant action. This product can be used in fertigation at low dosage few days after transplanting.



Activeg stimulates efficaciously both root and vegetative development of young plants. Activeg in foliar application promotes biomass production and vegetal metabolism, in order to improve the use of nitrogen, by decreasing the quantity of nitrates in vegetal tissues, which is a key factor for foliar and ready-to-eat vegetables.

# Introduction to the experimental tests

### Abiotic stress and biostimulant activities of the enzymatic hydrolysate of Fabaceae

The main consequence of environmental stress is a drastic reduction in yields, as well as a possible decrease in plants size, imbalances in root-shoot ratio, little development of the root system and a weaker photosynthesis.

These issues occur specifically in case of water scarcity, extreme temperature leaps, soil salinity and physiopathies due to nutritional deficiencies.

The use of biostimulant products by Hydro Fert aims to solve such problems with a sustainable approach "in harmony with nature".

Thanks to the R&D works in collaboration with public and private institutes, the company has developed Activeg, a biostimulant 100% of plant origin, allowed in organic agriculture, which helps to overcome stresses, stimulates both root and vegetative development of young plants, reduces the content of nitrate in plant tissues and improves the absorption of nutrients.





Experimental tests both in growth chambers and open fields have proven the biostimulant features of Activeg during all the growing phases, so supporting a significant yields increase.









# **Experimental tests**



# Zucchini in growth chamber

#### MATERIALS AND METHODS

Specie	es Cu	icumis	<i>ımis melo var.</i> Ortano				
Experimental design ful				ly randomized blocks			
Test duration 4 weeks of			veeks c	of cultivation			
Temperature 2			22,5-23 °C				
Relative humidity 65%-7				75%			
Light	14 ho	urs	Ś.				
Substratum pea			eat perlite mix (10:1)				
Application fertigation			gation				
Experi	ment	al trea	tments	Activeg 10 kg/ha; Control			
Treatments comparison				3 (once a week)			

### **Experimental results**

#### **VEGETATIVE PART**

Activeg improves the use's efficiency of nutritional elements (N-P-K) and promotes the biomass production in zucchini plants in growth chambers, with a root application of 10 kg/ha.

**FIG 1 -** Average fresh weight for each experimental plot after 30 days from transplanting in the two compared treatments.

#### **ROOT SYSTEM**

Activeg increases the root volume after its application with a dosage of 10 kg/ha in fertigation, also mixed with common NPK fertilizers. As a result, roots are more vigorous and branched.

**FIG 2 -** Root volume quality index between 1 and 4, after 30 days from transplanting in the 2 compared treatments.



# All plants cultivated with the application of Activeg have developed more flowers, so as resulting in a bigger yield.

ACTIVEG EXPERIMENTAL TESTS

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# **Experimental tests**



# Tomato crop in growth chamber

#### MATERIALS AND METHODS

Specie	s Sola	anum lycopersicum var. Cuore di bue					
Experi	menta	design	fully randomized blocks				
Test duration 4 weeks			ks of cultivation				
Temperature		19°C a	19°C at night/23 °C day-time				
Relativ	e hum	idity 6	5%-75%				
Light	14 hou	Irs					
Substratum		peat					
Application		fertigation					
Experi	menta	treatm	ents Activeg 10 kg/ha; Control				
Treatm	ents c	ompari	<b>Son</b> 3 (once a week)				

### **Experimental results**

#### **VEGETATIVE PART**

Activeg improves the use's efficiency of nutritional elements (N-P-K) and promotes the biomass production in tomato plants in growth chambers, with a root application of 10 kg/ha.

**FIG 3 -** Average fresh weight for each experimental plot after 30 days from transplanting in the two compared treatments.

#### **ROOT SYSTEM**

Activeg stimulates the root volume after its application with a dosage of 10 kg/ha in fertigation, as showed by all data referring to volumetry and to the scanned images of root system.

**FIG 4 -** Root volume of tomato plants in growth chamber, after 30 days from transplanting in the two compared treatments.







# Experimental tests



Tomato crop in open field

#### MATERIALS AND METHODS

**Species** *Solanum lycopersicum* 

**Experimental design** | fully randomized blocks

**Test duration** 4 weeks of cultivation

Transplanting 13-05-2019

Test conclusion 23-08-2019

**Temperature** according to the seasonal temperature of countryside in Trinitapoli - ITALY **Relative humidity** according to the seasonal temperature of countryside in Trinitapoli - ITALY

**Light** typical light characteristics in the given period

Substratum sandy, loamy soil

Application fertigation

**Experimental treatments** Activeg 10 kg/ha; Control

**Treatments comparison** 3 (flowering, fruit setting, fruit growth)

### **Experimental results**

#### **VEGETATIVE PART**

After the results analysis, the effects of Activeg on the vegetative part result to be very clear, both under vigour and biostimulation points of view, thus positively influencing the photosynthetic activity (check SPAD values).



**FIG 5 -** Plant's vigour after 8 weeks from transplanting in the two compared treatments.

**FIG 6** - Average SPAD values after 8 weeks from transplanting in the two compared treatments.

#### **ROOT SYSTEM**

Once again, like for the previous tests, Activeg confirms its positive significant influence on root development, by increasing the length, width, volume and fresh weight of roots. A wider and more vigorous root system improves the absorption capacity of both water and nutritional elements, besides empowering plants against stress conditions.



**FIG 7 -** Root volume at the test ending in the two compared treatments, i.e. the soil volume occupied by the roots.

**FIG 8 -** Fresh weight of the whole root system at the test ending in the two compared treatments.

#### **FRUITS QUALITY**

The last analysis on all fruits shows that the application of Activeg increases their average diameter and their consequent average weight, thus augmenting the crop's productivity itself.

Besides, Activeg positively influences the fruit's quality parameters.



**FIG 9 -** Average fruits size and consequent weight in the two compared treatments.

FIG 10 - Quality parameters in tomatoes.



The three experimental tests have proven the biostimulant and anti-stress features of Activeg, both in growth chambers and open fields. Besides, they've also showed its evident influence on yield's overall quality.

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