



STRONG ROOTS FOR BETTER PRODUCTIONS



+ safe



+ roots



+ production



Produce more and produce healthy!

Green Path is Agriges' answer to the new challenges of modern agriculture. The project core is to develop technical means that allow achieving abundant productions, sustainable from an environmental point of view and safe for food: **produce more and produce in a healthy way.**

The project involves the collaboration of Agriges with research institutes, experimental centres, universities, cooperatives and farms to develop products that maximize crops, thereby reducing the use of potentially polluting chemicals.



+ safe



+ sustainable



+ production



+ quality



- chemical



- pollution



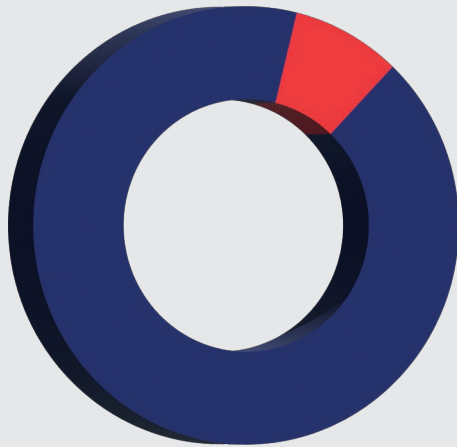
Soil fatigue: a limiting factor in productions

Soil health is of paramount importance to sustain high quality and quantity agricultural production. Over time, different agricultural activities: excessive mineral fertilization, deep tillage, irrational irrigation, replanting, and monoculture negatively affect soil health, generating a series of negative symptoms, with inevitable repercussions on agricultural productions, in terms of quantity and quality, defined by the expression **soil fatigue**.

Agriges has for years been certain that in the case of tired soils, where optimal conditions have been created for the proliferation not only of soil pathogens co-responsible for soil fatigue, but also for the transmission of fitopathogens that are very harmful to crops, it is crucial to restore root growth interrupted by stress factors, stimulating the plant's production of new root hairs and inducing it to fortify cortical tissues, in order to make the root system less susceptible to further stress.

Active components

Nema 300 Plus promotes the release of new roots so that the crop recovers stressed tissue in a short time. The composition rich in bioactive components helps maximize root functionality.



- **RyZea**
- **Fatty Acids**
- **Alkaloids and Diterpenes**
- **Phenols and Tannins**
- **Glucosinolates**

RyZea



The specific ratio of natural phytohormones (Auxins, Cytokinins, and Gibberellins) enables stimulation and uniformity of **vegetative recovery**. This ratio also induces plant growth (cell division and distension) by improving yields and development of the root system that supports responses to stresses, such as root asfixia, drought etc.

Production technologies



RyZea is Agriges' exclusive production technology that extracts valuable molecules from the brown algae *Ascophyllum nodosum*, *Laminaria spp.* and *Focus spp.* The extremely "gentle" extraction process does not alter the stability of the phytostimulant algal molecules, ensuring high agronomic performance.



Quality control

Before starting the extraction process, the three seaweeds are selected, identified and checked in order to verify their compliance with quality requirements, only then do they go on to be processed.



Micronization

The extraction principle of RyZea technology is the micronization of algae and the application, to the micronized products, of differential pressure.



Filtering

The extract is then filtered at 100 mesh (150 microns), ensuring that the product does not create problems during field application.



Extraction

The extraction technology does not involve the use of high temperatures, or dehydration and/or freezing processes, or the use of chemicals. To ensure it, there is the finally more acidic pH than others.

Fatty acids



Fatty acids are signal molecules, involved in responses related to various types of stress (A. Kachroo and P. Kachroo, 2009). In addition, recent studies have shown that during the rooting process the content of some fatty acids increases exponentially to be utilized by roots at this stage (H. Cheikhrouhou et al., 2015). Finally, they allow homogeneous diffusion of the nutrient solution and more complete coverage of the treated areas.

Alkaloids and Diterpenes



Alkaloids are secondary metabolites used by plants as compounds that enhance natural resistance to adversity (Vilariño and Ravetta 2008; Matsuura and Fett-Neto 2013). It has also been seen how these compounds improve the efficiency of the root system by allowing greater nutrient uptake.

Phenols and Tannins



Phenols and tannins are secondary metabolites variously involved in plant responses to numerous stressors (Hammerschmidt, 2005; Witzell & Martin, 2008; Chong et al., 2009; Barbehenn & Constabel, 2011). They are capable of stimulating endogenous resistance responses or acting as activators against various adversities.

Glucosinolates



Once in the soil and in contact with water, a bio-hydrolysis process is activated from the glucosinolates, releasing potent antioxidants that are actively involved in responses against major stressors.

Experimental Results

Objective

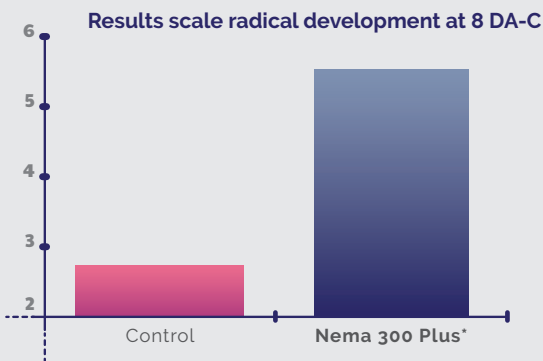
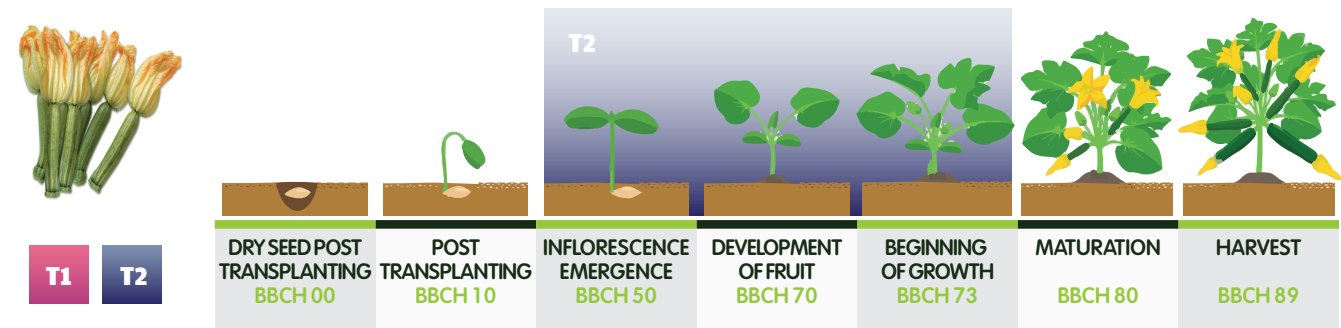


Verification of the efficacy of Nema 300 Plus product application on rooting and increased productivity, under abiotic stresses, in the zucchini crop.

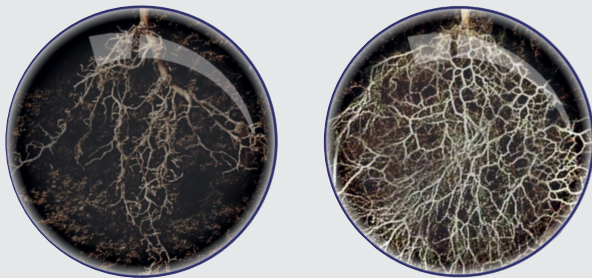
Test Data

Crop	Zucchini (c.v. Amorgos F1)
Essay center	Sele Agrosresearch srl
Company	Co. Divece Donato
Test localization	Via Torre dei Mussi 84091 – Battipaglia (SA)
Notes	Test conducted in 2022, in classical breeding on a single file in protected culture in the mid-late period (August)
Surveys	Root biomass, verification of quantitative/qualitative parameters of production

Thesis	Product	Active Ingredients	Doses/ha	Application method	Application phase	Timing
T1	Control	-	-			
T2	Nema 300 Plus	Yeast fluid extract containing brown algae. Organic Nitrogen (N) 1.0 % Organic Carbon (C) 10.0 %	25	Radical	BBCH 13, 51,71,72, 73	BCDEF

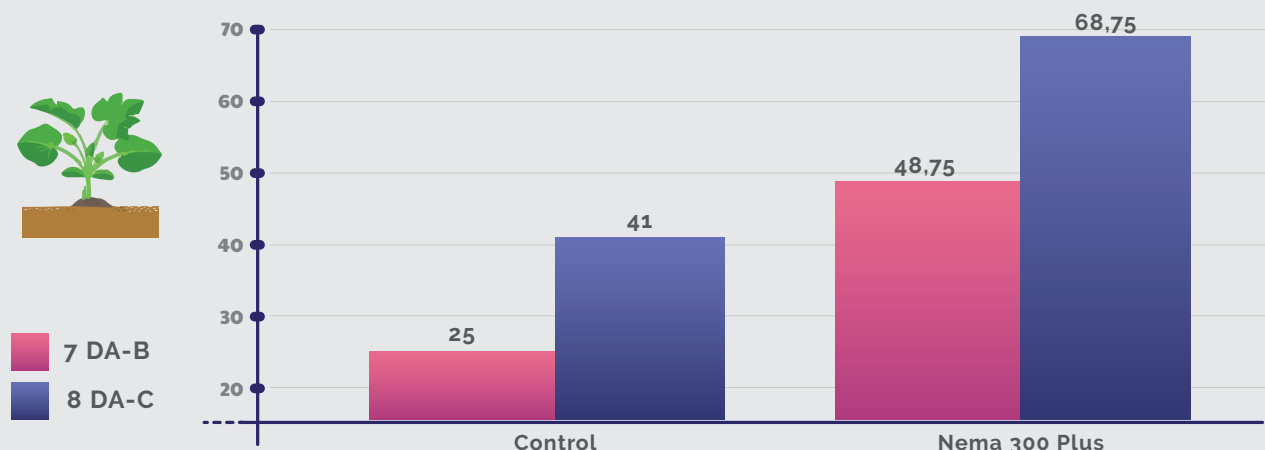


1:9 scale root system

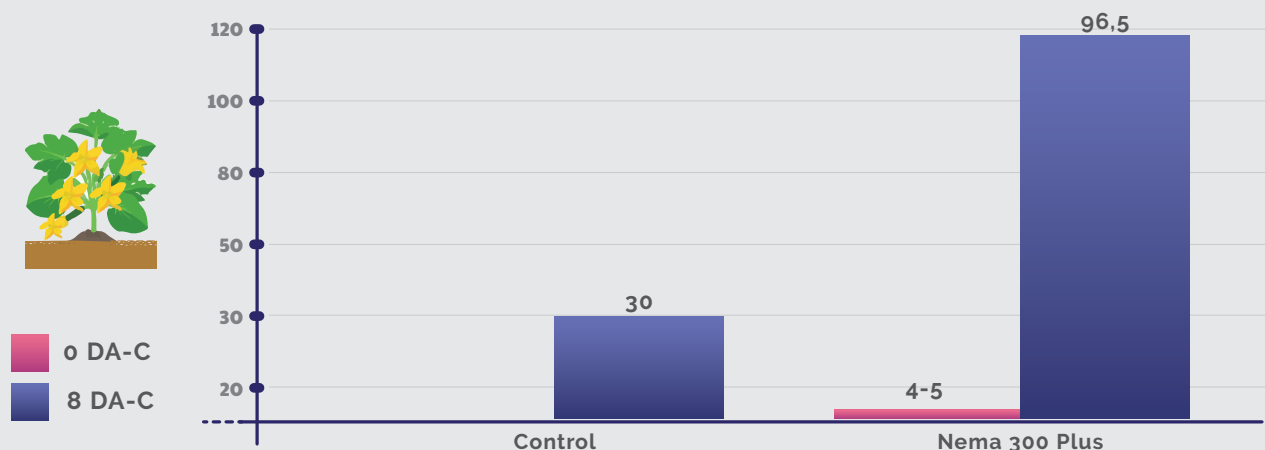


*At 8 days after the second treatment, the thesis treated with Nema 300 Plus showed plants with much more developed root systems than the control.

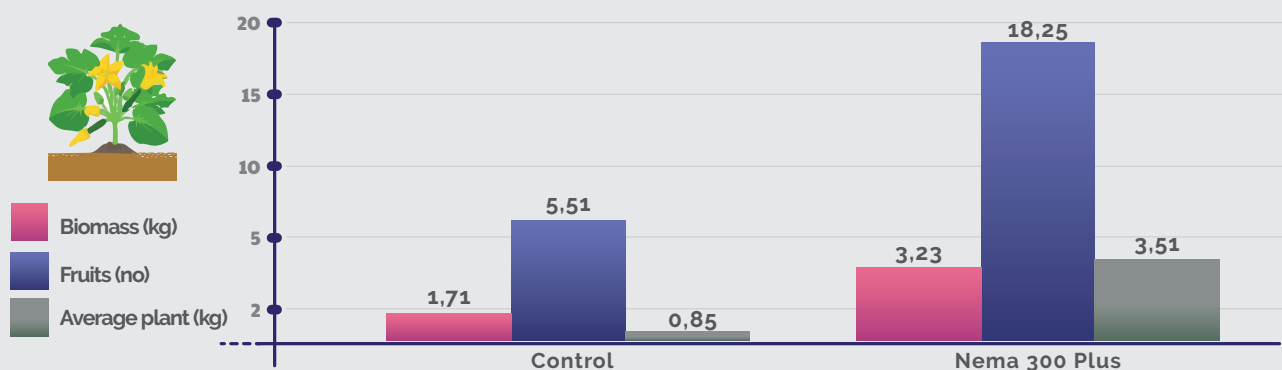
Evaluation of the effects of NEMA 300 Plus applied in fertigation on plant height in cm at 7 DA-B and 8 DA-C.



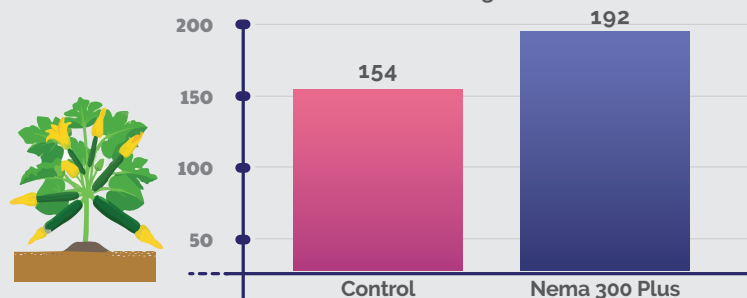
Evaluation of the effects of NEMA 300 Plus applied in fertigation on the flowering at 0 DA-C and 8 DA-C.



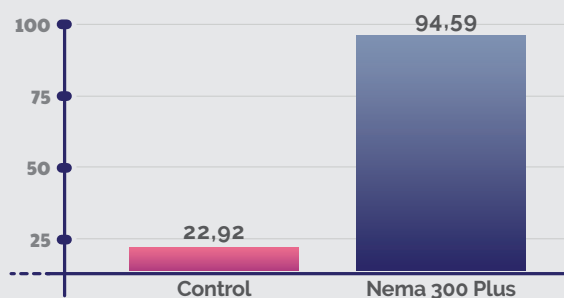
Evaluation of the effects of NEMA 300 Plus applied in fertigation on plant biomass and number of fruits and kg per plant.



Evaluation of the effects of NEMA 300 PLUS on fruit (weight).



Evaluation of the effects of NEMA 300 PLUS on yield (Tons).



Conclusions

Nema 300 Plus - Zucchini

The use of the product NEMA 300 PLUS made it possible to improve the plant's physiology at all phenological stages of its cycle by strongly stimulating root development. In definitive, a qualitative and quantitative improvement in production was achieved.

Composition

	W/W	W/V
Organic Nitrogen (N)	1,0 %	1,0 %
Organic Carbon (C)	10,0 %	10,4 %
Organic matter with nominal molecular weight <50kDa	30,0 %	31,2 %
Fatty acids, Alkaloids, Diterpenes, Phenols and Tannins, Glucosinolates. *		
Elements: brown algae, organic products and by-products of vegetable origin %w/w equivalent to %w/v at 20°C.		
* Data not shown on the label.		

Doses and methods

CROPS	Application in Fertigation	Dose l/ha
TREE CROPS	Starting from early growth stages, repeating the treatment every 10 to 14 days	15-25
TABLE AND WINE GRAPES	Starting from early growth stages, repeating the treatment every 10 to 14 days	15-25
HORTICULTURAL CROPS	Starting from early growth stages, repeating the treatment every 10 to 14 days	15-25
INDUSTRIAL CROPS	Starting from early growth stages, repeating the treatment every 10 to 14 days	15-25
ORNAMENTALS	Starting from early growth stages, repeating the treatment every 10 to 14 days	15-25

WARNINGS

In case of mixing with other products it is always advisable to carry out miscibility and compatibility tests on a limited number of plants. Do not mix with products with a strong acid/alkaline reaction or sulphur. Shake the container vigorously before use. In case of application with a boom sprayer, it is necessary that the treatment is followed by abundant irrigation with water only. Do not mix with herbicides.

Formulation

Soluble liquid

Packaging

1 - 5 - 10 - 25 l

Density (T=20°C)

approx. 1040 kg/m³

pH (sol. 6%)

approx. 8,9

Conductivity (sol. 10%)

approx. 6,3 dS/m



Resistance inducer



Fertigation



Allowed in Organic Farming



Exclusive Agriges production technology



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