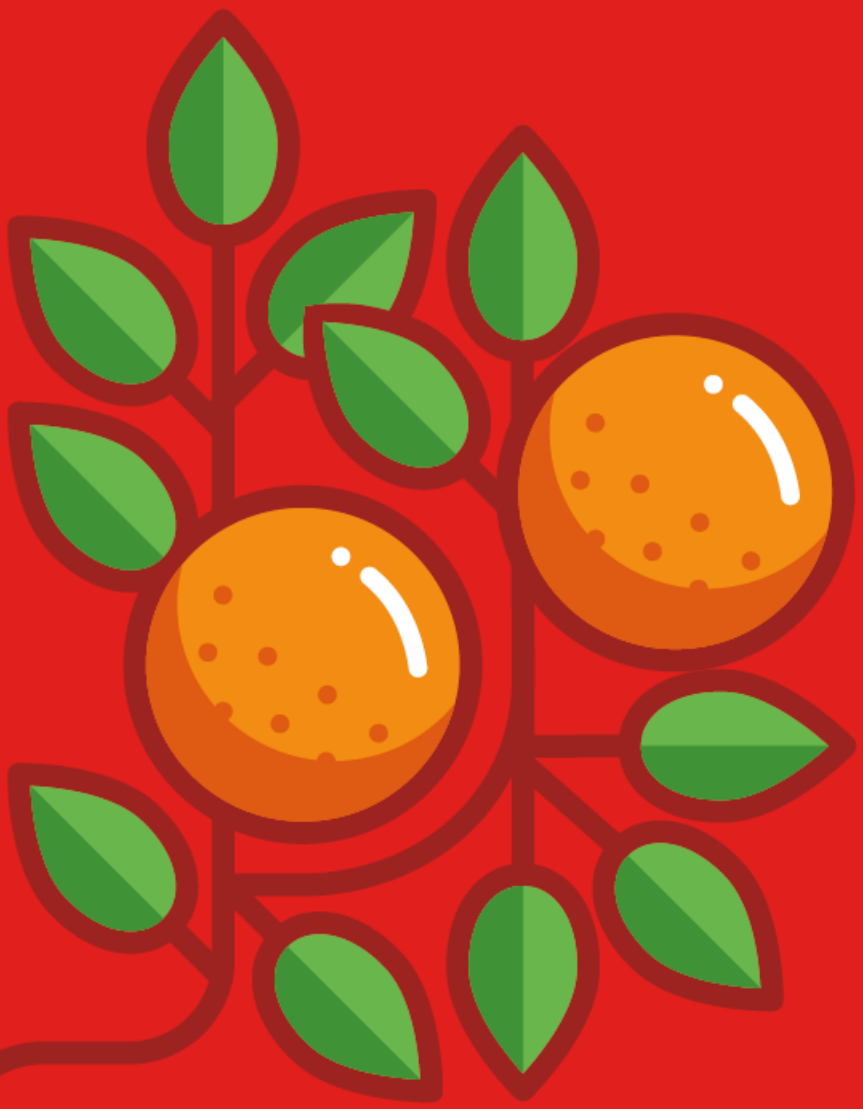


DYNAMIC

VEGETAL BIOSTIMULANT

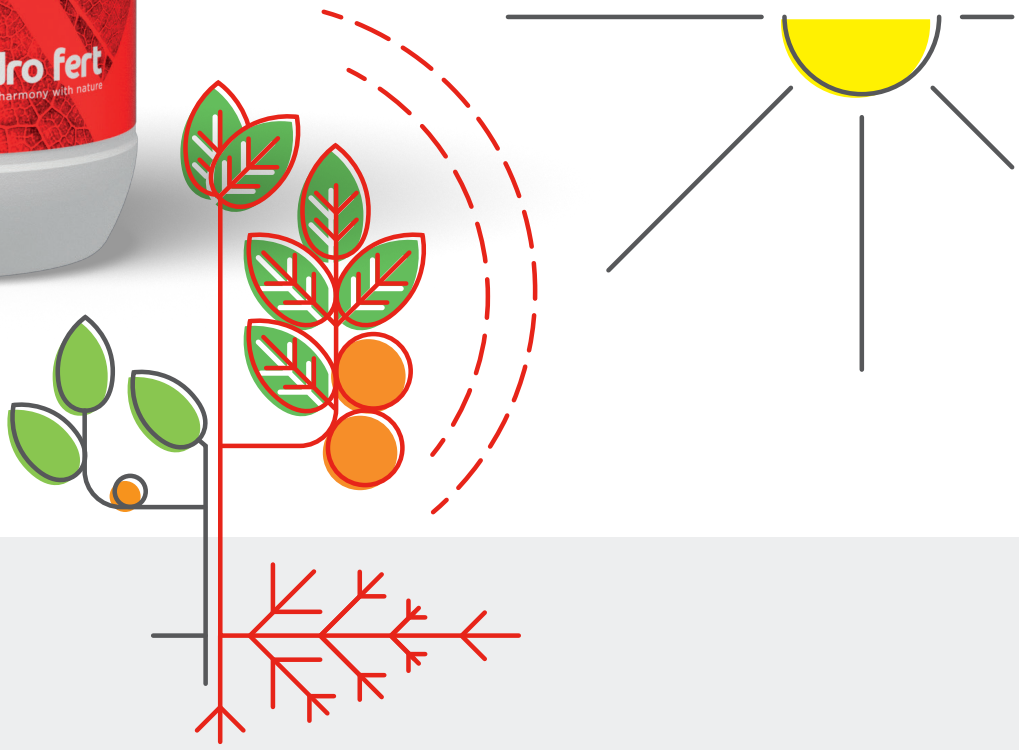
- STRONGER RESISTANCE AGAINST WATER AND SALINE STRESS
- BETTER ROOTS AND VEGETATIVE DEVELOPMENT
- INCREASED PHOTOSYNTHETIC ACTIVITY

hydro fert

1L 5L BIO RS

Dynamic is a fluid mix of organic nitrogen fertilizers, containing free amino acids of plant origin, natural phytohormones, carotenoids, polyphenols, vitamins and alcohols.

BENEFITS
- Stronger resistance against water and saline stress
- Better roots and vegetative development
- Increased photosynthetic activity



RESISTANCE AGAINST PEDOCLIMATIC STRESS AND BETTER PHOTOSYNTHETIC ACTIVITY

Due to pedoclimatic stress, plants are weaker and susceptible to the pathogens attacks, thus resulting in a lower production.
Dynamic allows to overcome stress and improves yields both in terms of quality and quantity. The experimental tests show that Dynamic stimulates a major vegetative and roots growth even in pedoclimatic stress conditions. It also enhances a better photosynthetic activity thanks to carotenoids, increasing the content of chlorophyll.

Experimental results

Olive trees

MATERIALS AND METHODS

Species	*Olea Europea var.* Carolea		
Experimental design	Fully randomized blocks		
Test duration	190 days		
Temperature	18–20-24 °C	**Average temperature**	21 °C
Average relative humidity	53 %		
Substratum	agricultural soil medium-textured		
Application	foliar application (atomizer) 1-3-5 l/ha		
Experimental treatments	Control; Dynamic		
Treatments comparison	three: 03/05/21 - 14/07/21 - 01/10/21		

Production per plant

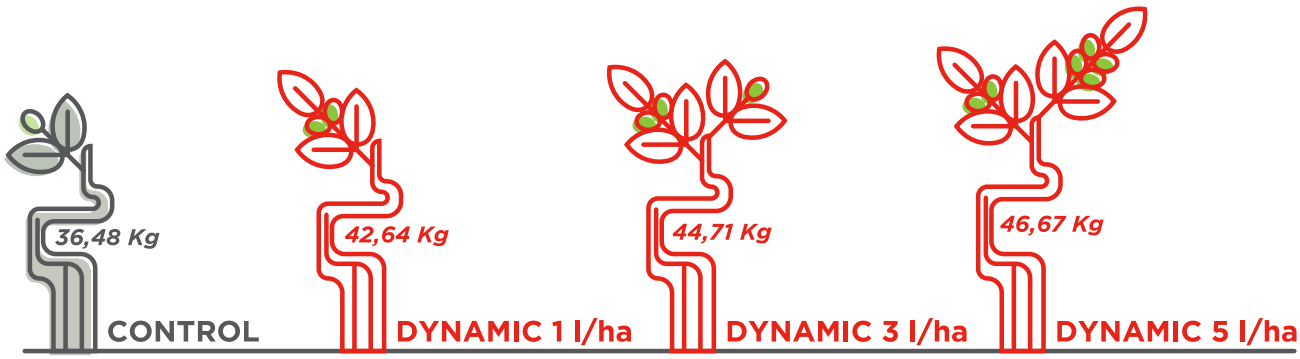


FIG 1 - *Production per plant in the different compared thesis.*

Production per hectare

FIG 2 - *Production per hectare in the different compared thesis.*

The test proved that the use of Dynamic results in an increase of the average production per plant and per hectare. The GSP grows proportionally to the dose used. This shows that the formulation allows a better absorption of nutrients, optimizing the translocation of NPK fertilizers into the plants. For agronomic purposes the optimal dose is 3 l/ha.

Tomato crops

MATERIALS AND METHODS

Species	*Solanum lycopersicum* Tomato Var. Levante
Experimental design	Fully randomized blocks
Test duration	4 settimane
Temperature	21-23 °C
Average relative humidity	55,5 %
Application	fertigation
Experimental treatments	5 biostimulant doses x 2 water stress = 10 compared treatments
Treatments comparison	three: 24/02/21 - 03/03/21 - 10/03/21
Main experimental treatment	
biostimulant application dose = 5 treatments compared	
D1 Control **D6** 5 l/ha **D7** 10 l/ha **D8** 15 l/ha **D9** 20 l/ha	
Experimental factorial treatment	**W0** no stress **W1** water stress

Height

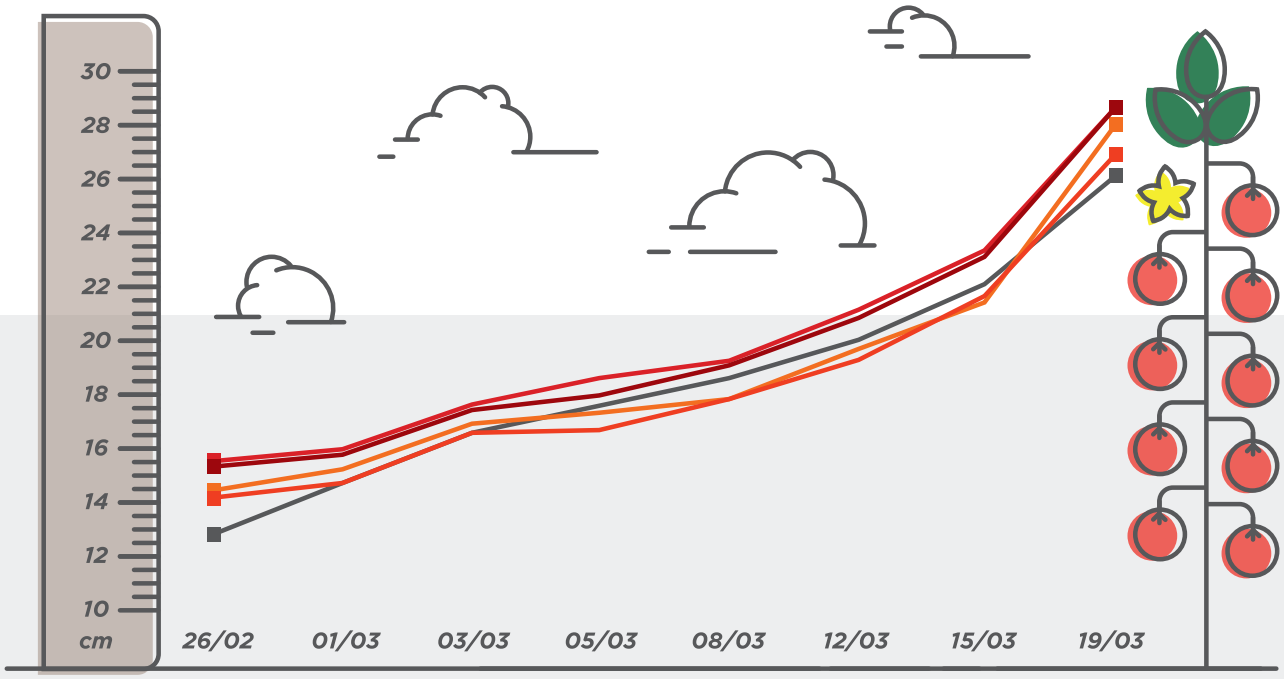


FIG 1 - *Average plants height in compared treatments (biostimulant application dose).*

The use of Dynamic influences the plants height according to the dosage. Higher doses result in an increased vegetal and roots growth, therefore a better absorption of nutrients.

Vigour

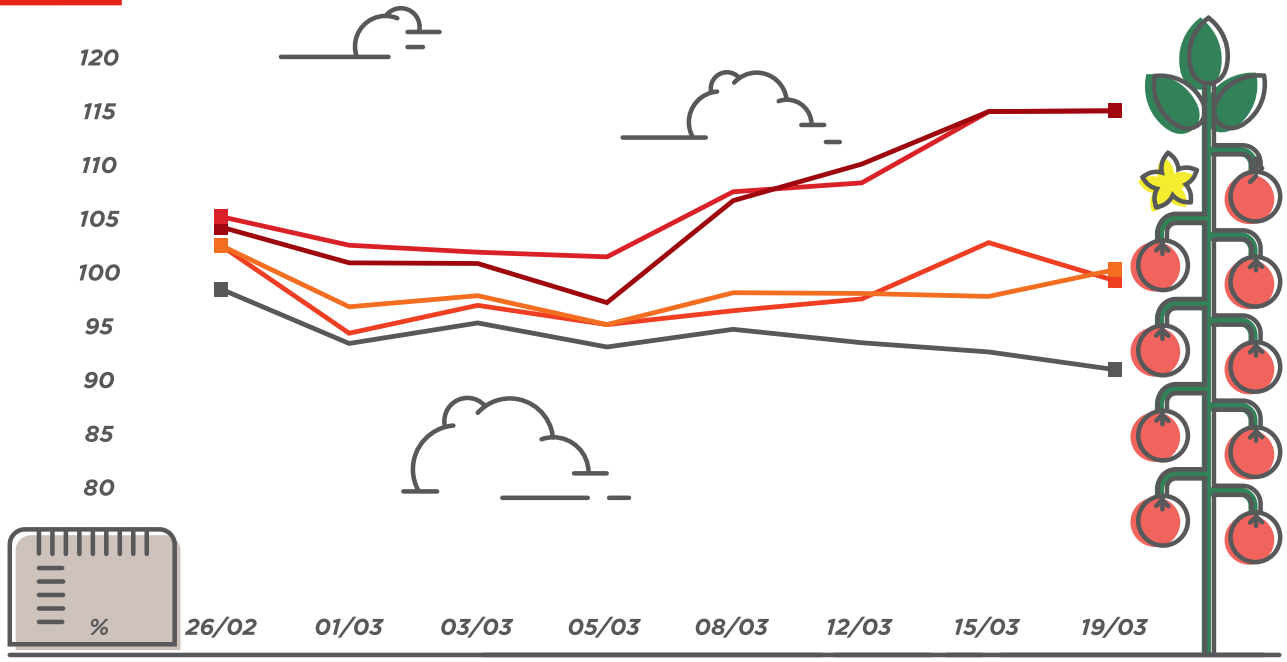


FIG 2 - *Average plants vigour in compared treatments (biostimulant application dose).*

Dynamic brings an increased plants vigour, according to the dosage. The plant shows maximum values of vigour with a dosages of 15 l/ ha. More vigorous plants are stronger against biotic and abiotic stress, achieving both a higher photosynthetic efficiency and an improved rooting activity.

SPAD

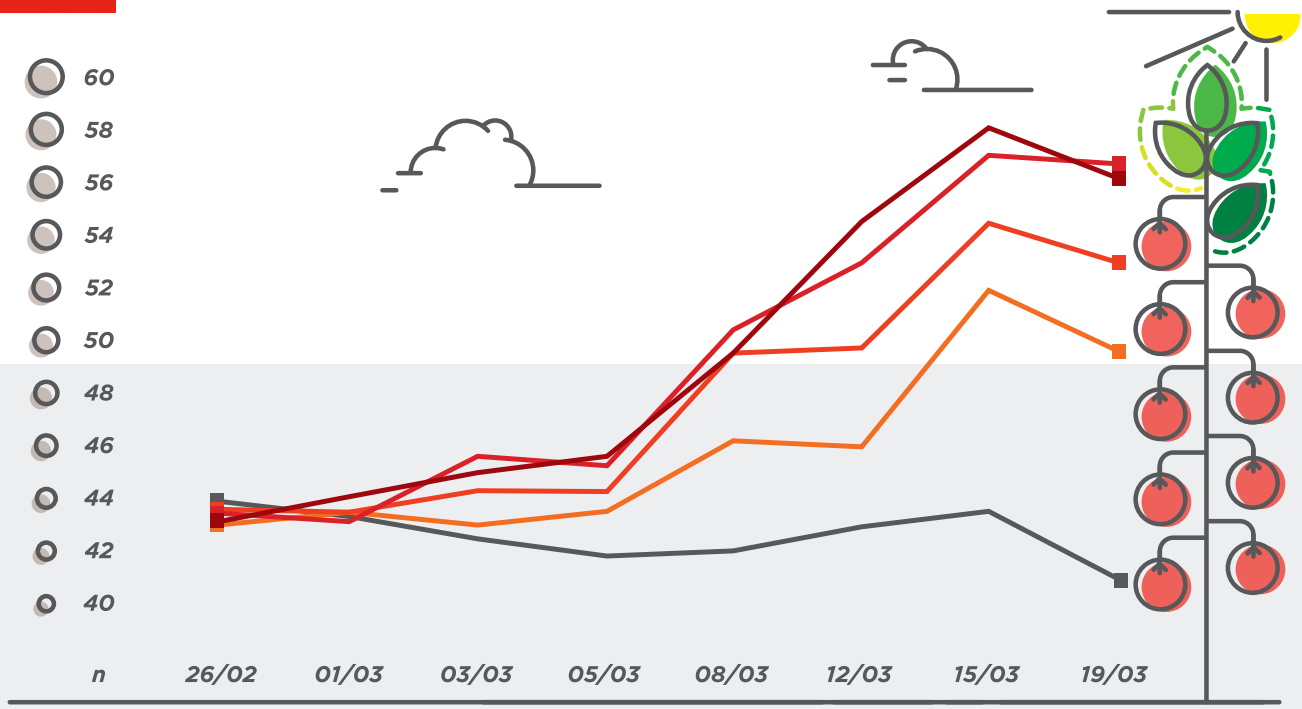


FIG 3 - *SPAD in compared treatments (biostimulant application dose).*

The values of SPAD prove the phytosanitary status of crops.
Higher values suggest a better resistance against biotic and abiotic stress, with higher photosynthetic efficiency levels and bigger yields. SPAD values may increase proportionally to the dosage of Dynamic.

NDVI

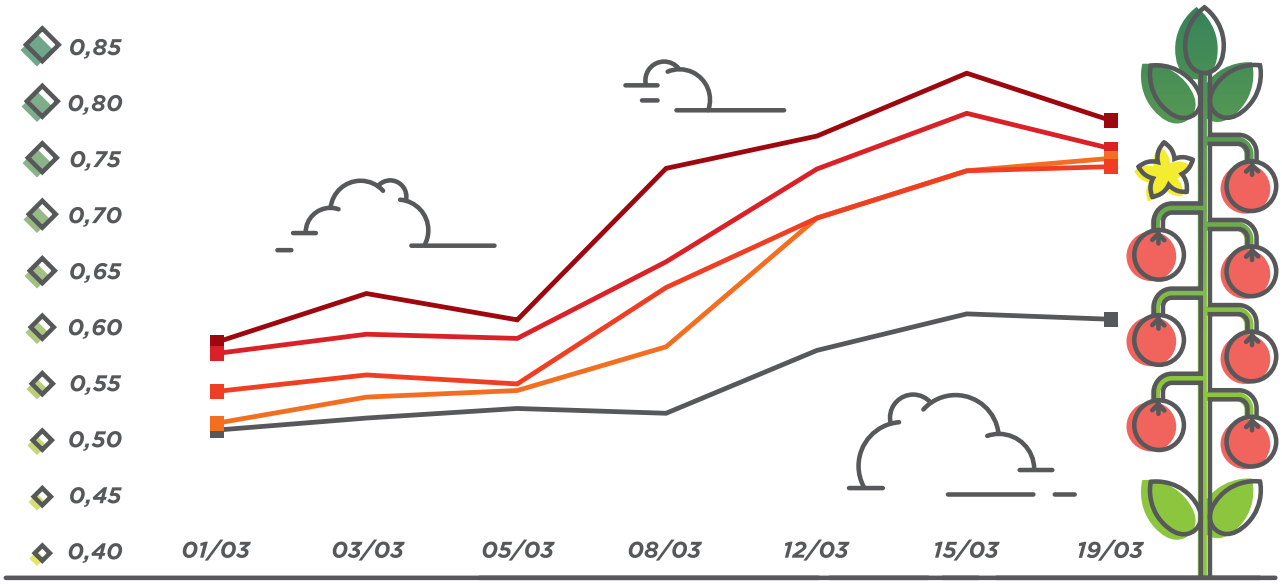


FIG 4 - *NDVI in compared treatments (dose of biostimulant application).*

The NDVI value shows if the plant is under stress conditions depending on the color of its vegetative part. Crops with a higher parameter are more vigorous and obtain bigger yields. NDVI values may increase pr

Height with stress

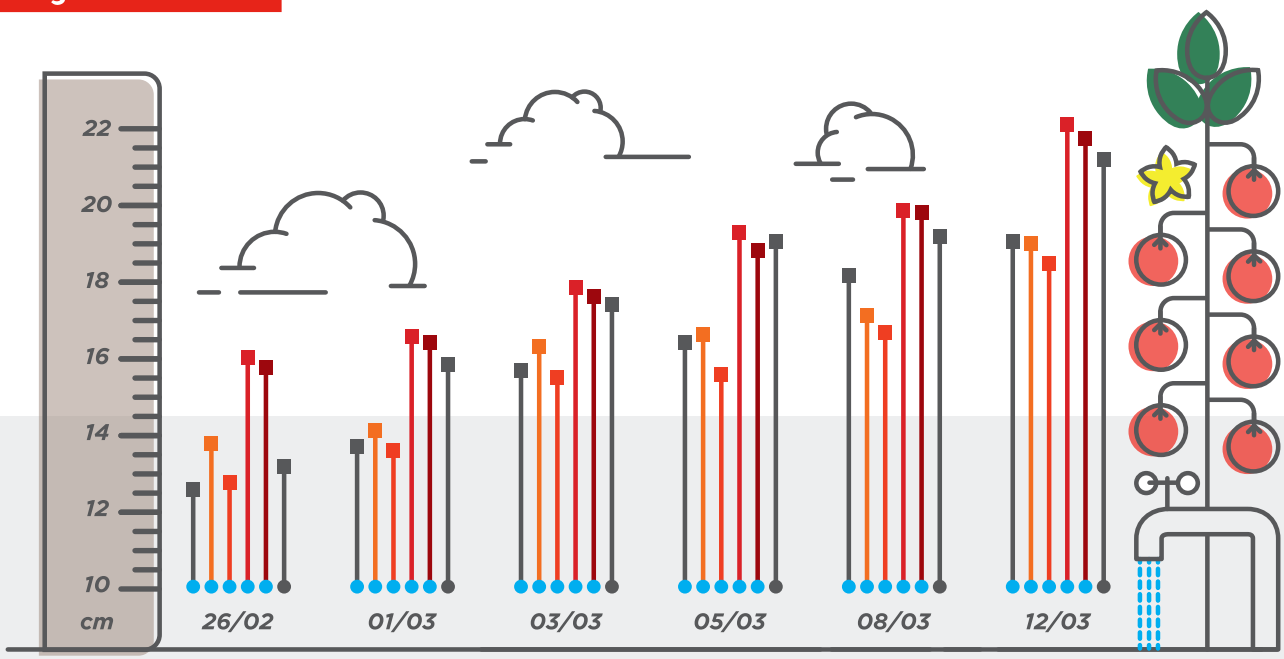


GRAFICO 5 - *Average plants height in compared treatments with water stress (DXW).*

The use of Dynamic, even under water stress (W1: CIC 50 %), results in a higher crops growth compared with plants getting an 85% water capacity.
Amino acids of plant origin give better health conditions also to those crops under stress. Dynamic shows remarkable results even at low supplied quantity.
However, the best dosage of such biostimulant (with or without stress) is 15 l/ha, both for agronomic and economic reasons.

Experimental results

Lettuce in greenhouse

MATERIALS AND METHODS

Species	*Lactuga sativa var.* Romana		
Experimental design	Fully randomized block factorial		
Duration	62 days		
Temperature	4–31 °C	**Average temperature**	15 °C
Relative humidity	30-95%		
Substratum	93,3% sandy / 3,2% clay / silt 3,5%		
Application	fertigation		
Treatments comparison	two: pre-transplanting 15/10/2020 and post-transplanting 5/11/2020		
Main experimental treatment			
2 biostimulant treatments **Controllo (1)** and **Dynamic 10 l/ha (7)**			
x 3 salinity levels **S1** **S2** **S3** = 0,48 dS/cm, 3 dS/cm, 5 dS/cm			
x 3 water stress levels **I1** **I2** **I3** = no stress / medium stress / high stress			

Vigour

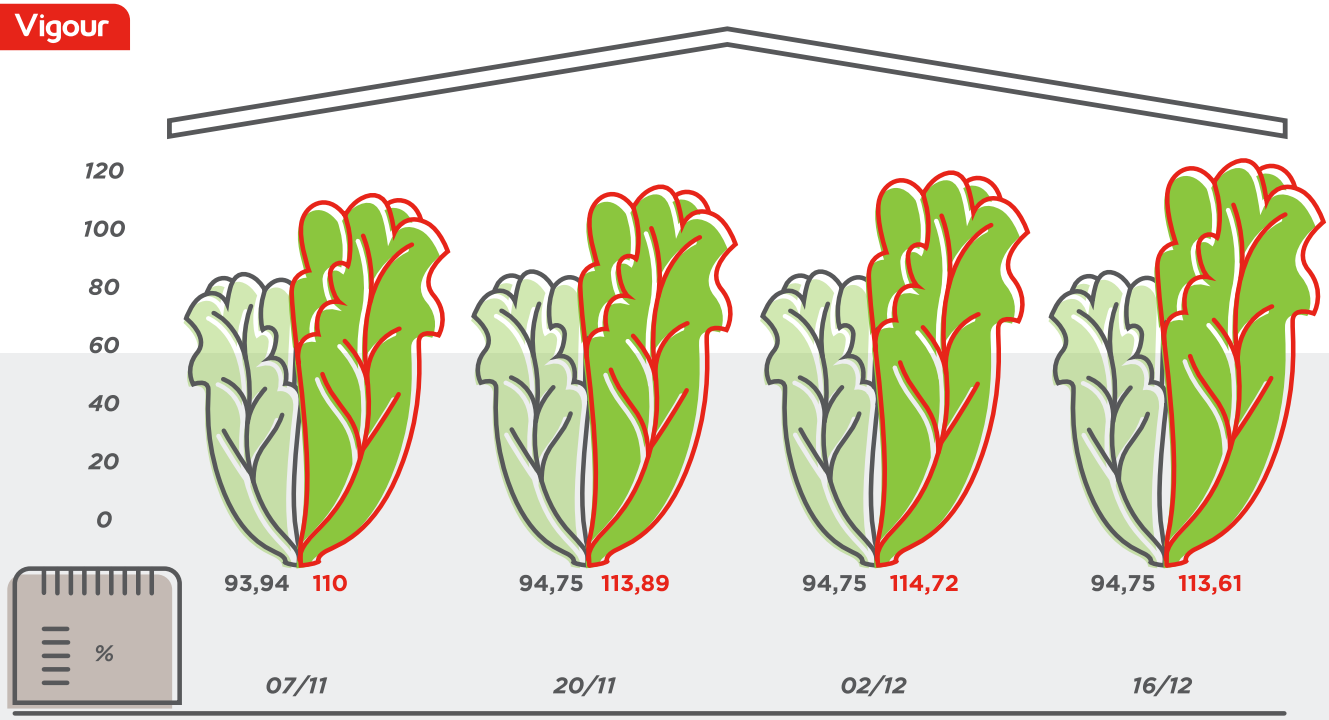


FIG 1 - *Average vigour per experimental plot after 23/36/48 and 62 days from transplanting in the two compared*

The use of Dynamic results in an increased plants vigour compared to the not treated ones. Such information confirms its biostimulant activity through a bigger production.

SPAD

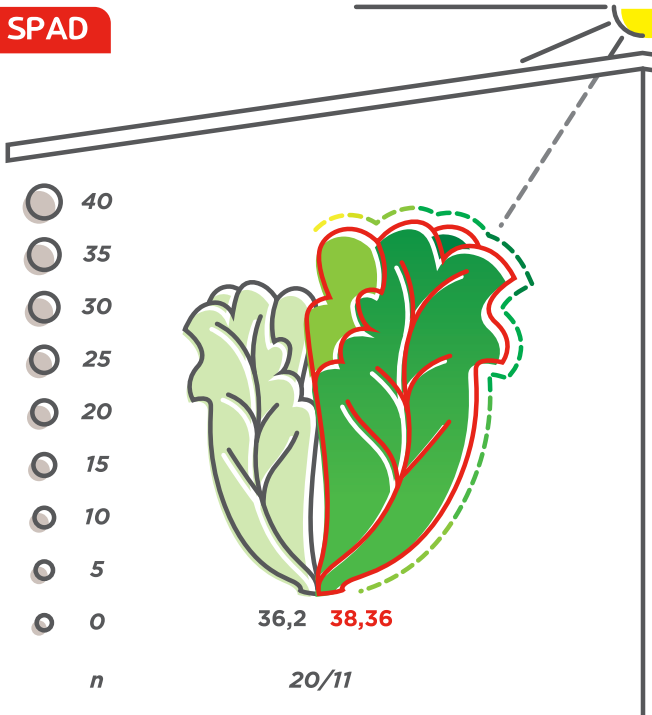


FIG 2 - *Average SPAD after 36 days from transplanting in the two compared treatments.*

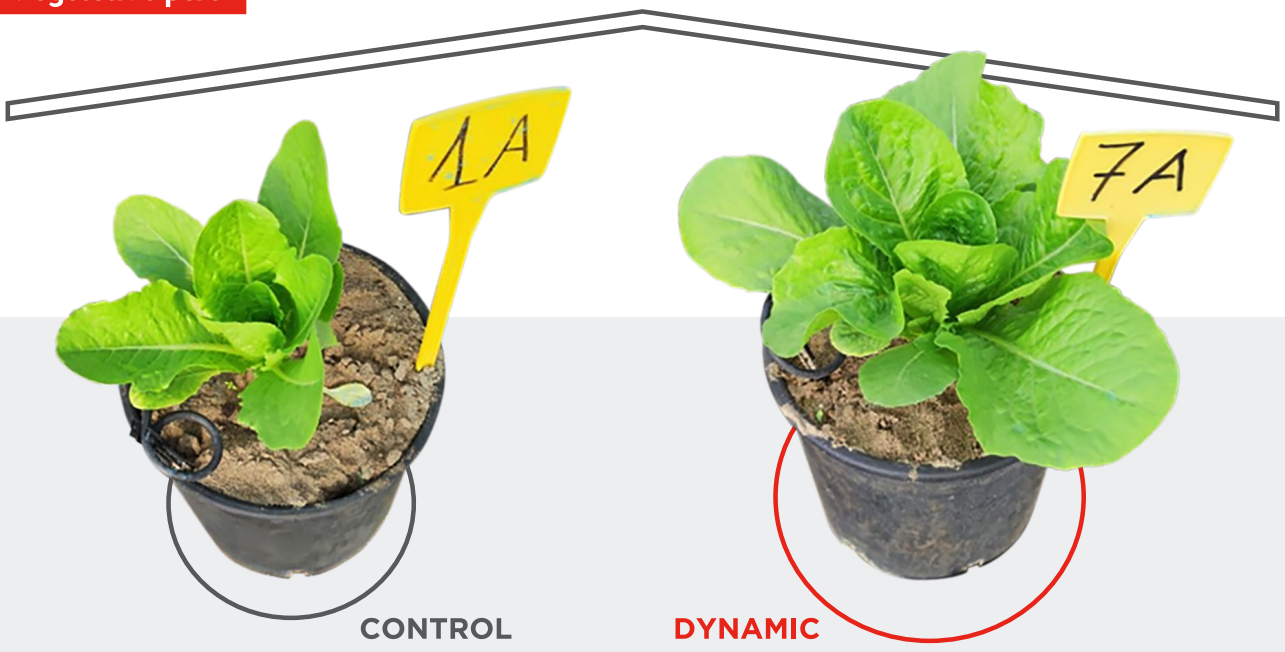
Dynamic results in a higher chlorophyll content, thanks to the carotenoids increasing both photosynthetic efficiency and phytosanitary conditions.

Fresh weight

FIG 3 - *Average fresh weight after 36 days from transplanting in the two compared treatments.*

Dynamic results in a remarkable increase in plants fresh weight, confirming its biostimulant action.

Vegetative part



IMG 1 - *Lettuce crops in the two compared treatments.*

Roots fresh weight

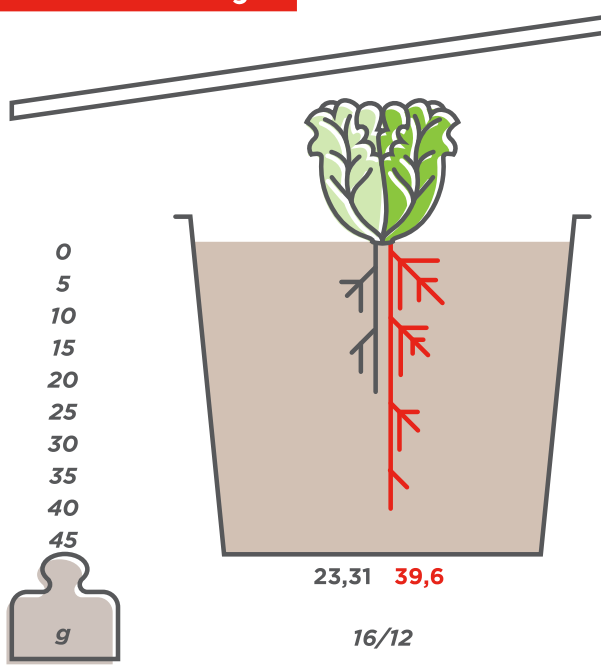


FIG 4 - *Average roots fresh weight after 62 days from transplanting in the two compared treatments.*

Roots width

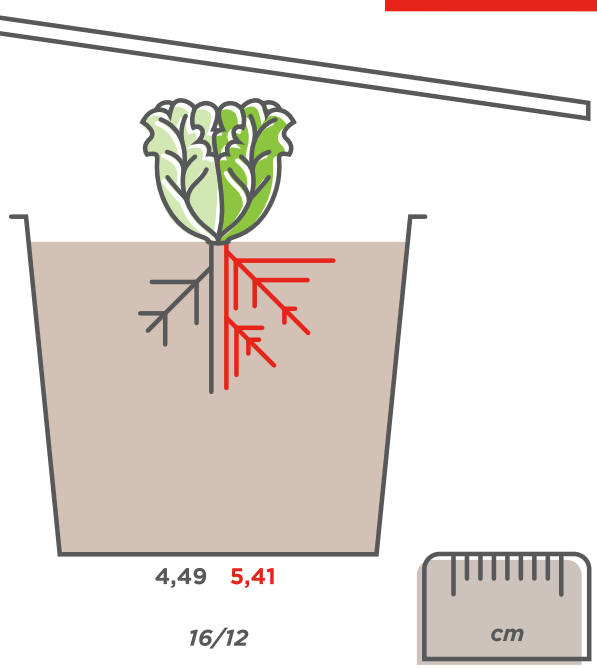


FIG 5 - *Roots width after 62 days from transplanting in the two compared treatments.*

Roots volume index

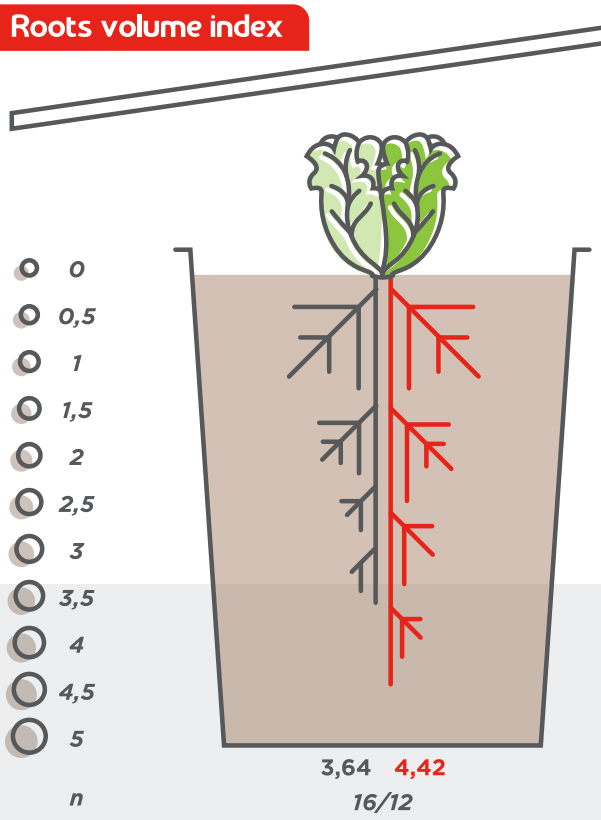


FIG 6 - *Roots volume index between 1 and 5, after 62 days from transplanting in the two compared treatments.*

Roots

IMG 2 - *Roots of lettuce crops in the two compared treatments under standard conditions.*

The use of Dynamic results in increased fresh weight, width and root volume index, thanks to the bioactive substances which stimulate rooting. Plants with a more expanded and deeper root system have a stronger resistance against biotic and abiotic stress, exploring a wider portion of rhizosphere and better exploiting the elements applied with fertilization.

Vigour with stress

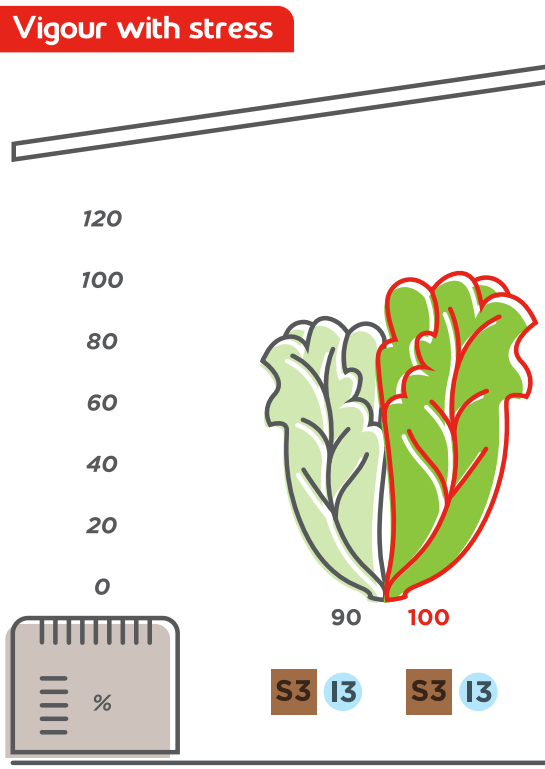


FIG 7 - Average vigour after 27 days from transplanting in the two compared treatments with high electrical conductivity (5 ds/m and high stress).

SPAD with stress

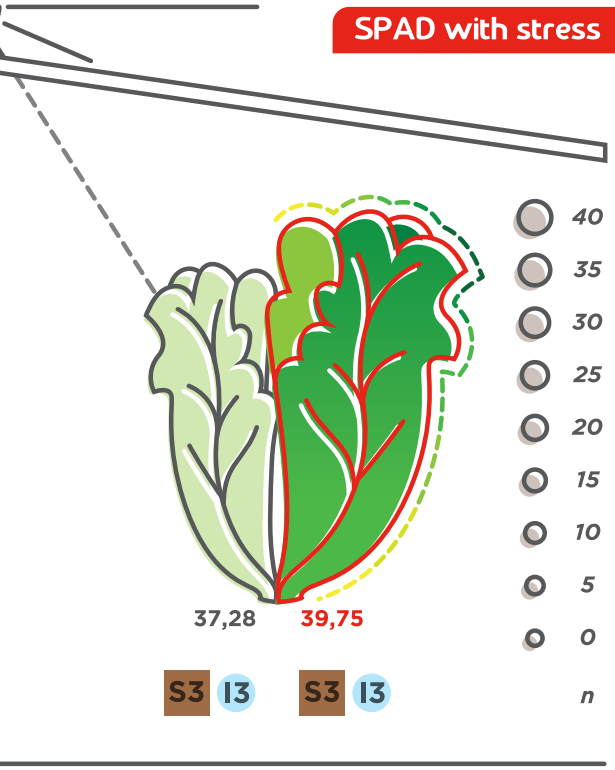


FIG 8 - Average SPAD after 40 days from transplanting in the two compared treatments with high electrical conductivity (5 ds/m and high stress).

Dry matter with stress

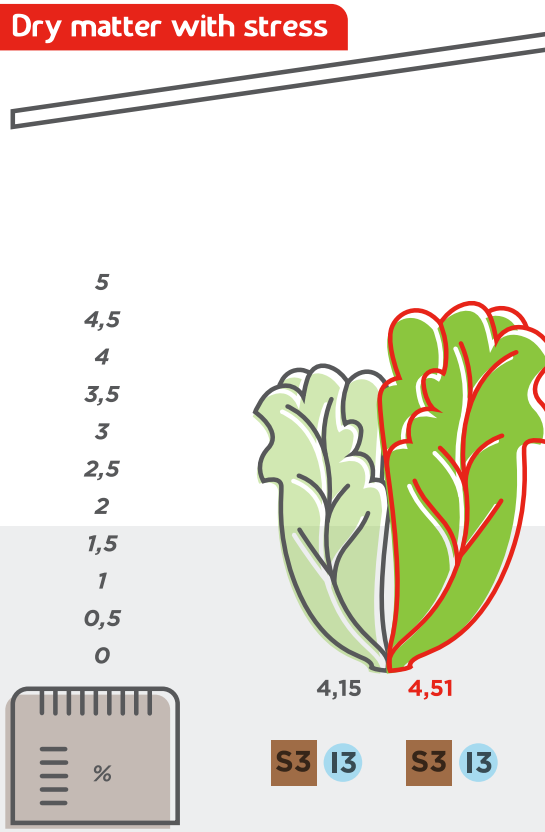


FIG 9 - Average dry matter after 62 days from transplanting in the two compared treatments with high electrical conductivity (5 ds/m and high stress).

Roots with stress

IMG 3 - Roots of lettuce crops in the two compared treatments under conditions of water and saline stress (5 ds/m and high stress).

Even under water and saline stress, the use of Dynamic proves better values of vigour, SPAD and dry matter compared to Control, thus resulting in an increase of production and photosynthetic efficiency.

Vigour without and with stress

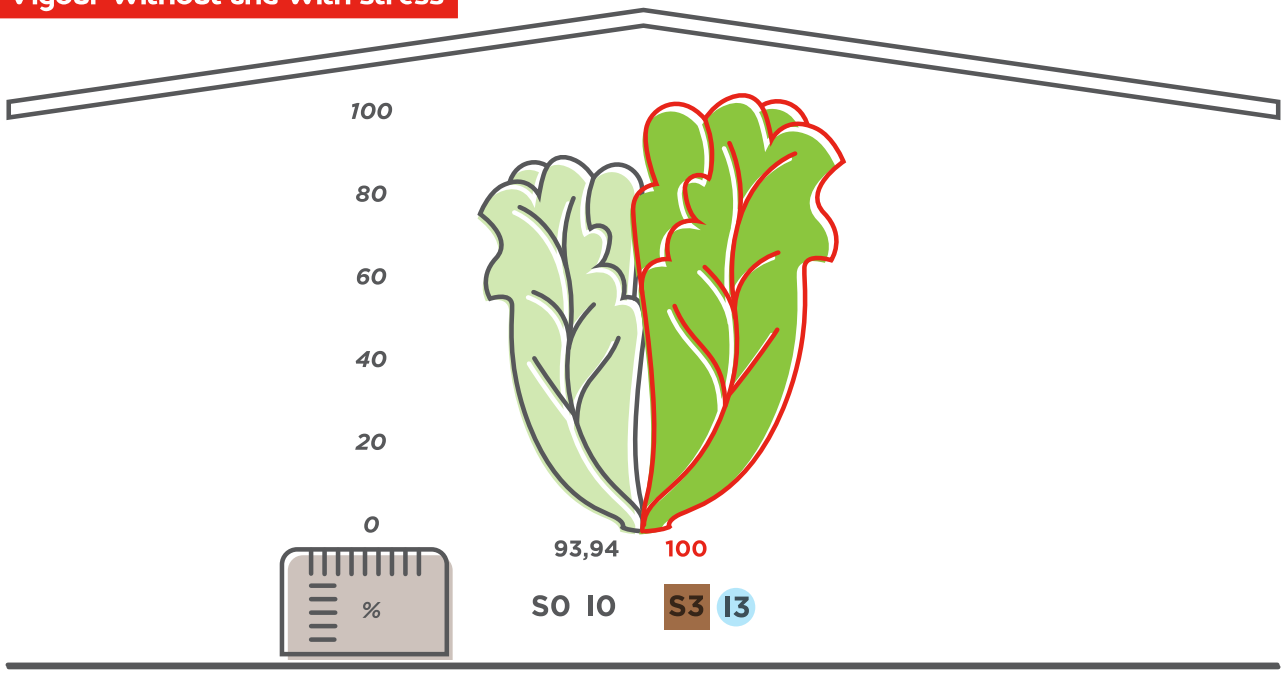


FIG 10 - *Average vigour in the two compared treatments under standard conditions (S0 and I0) and high electrical conductivity (5 ds/m and high stress).*

Data proves that the use of Dynamic favours an increased vigour compared to the Control, even without any water and saline stress, thus bringing benefits for production, both under stress and in standard conditions.

SPAD without and with stress

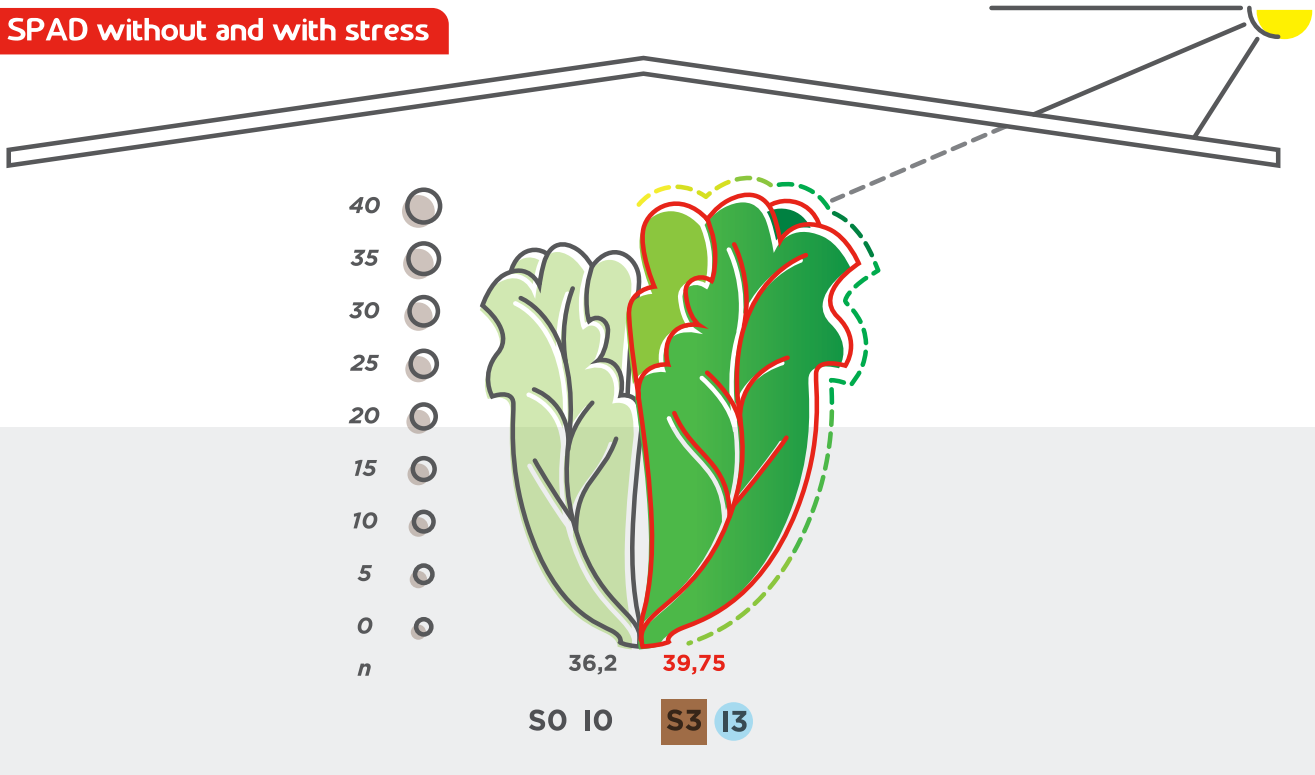


FIG 11 - *SPAD in the two compared treatments under standard conditions (S0 and I0) and high electrical conductivity (5 ds/m and high stress).*

The SPAD value is higher with water and saline stress when we use Dynamic. This results in an improved photosynthetic efficiency.

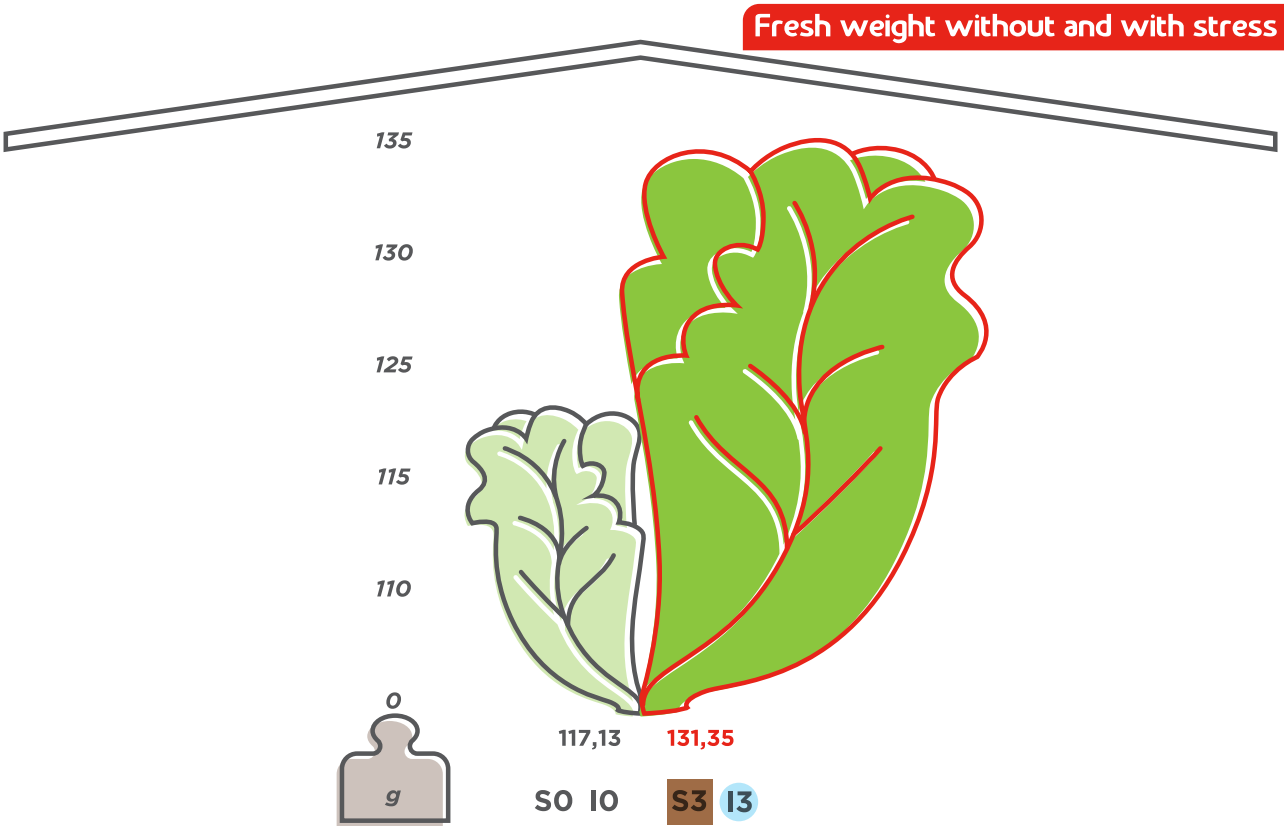


FIG 12 - *Fresh weight in the two compared treatments under standard conditions (S0 and I0) and high electrical conductivity (5 ds/m and high stress).*

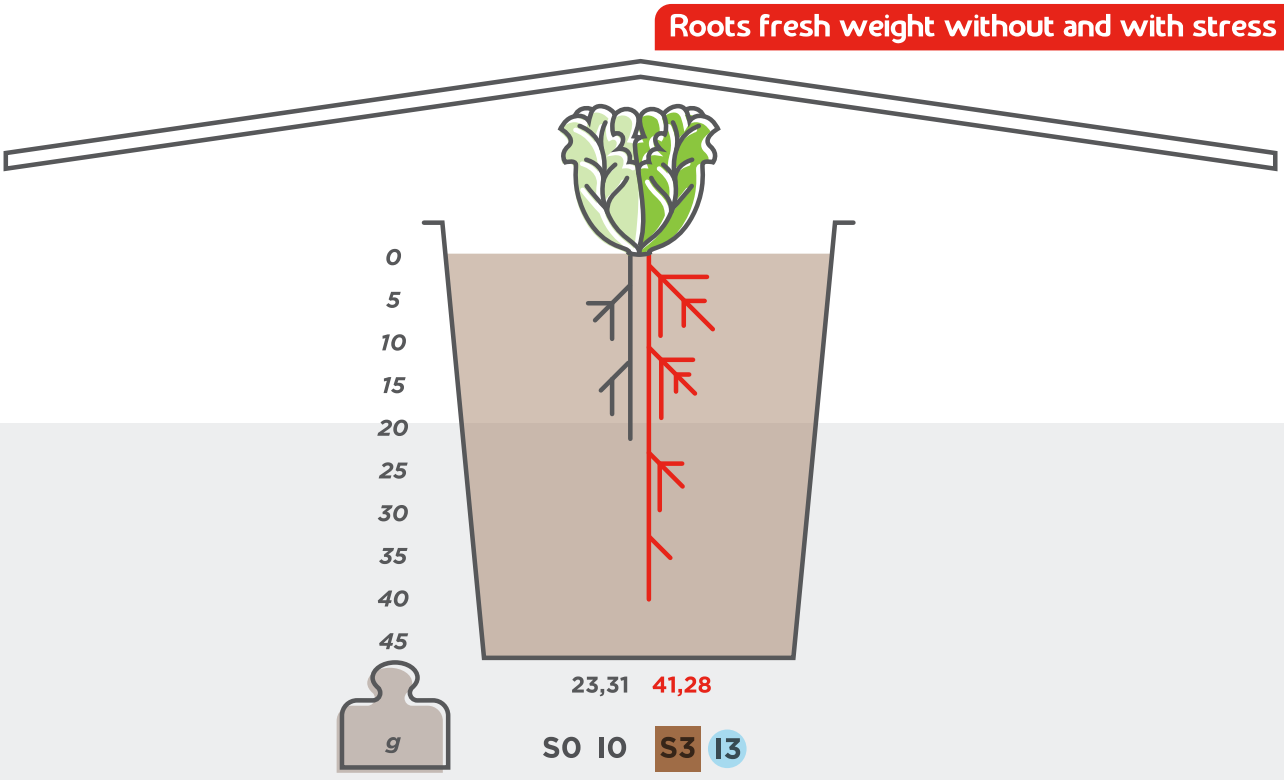


FIG 13 - *Roots fresh weight in the two compared treatments in standard conditions (S0 and I0) and high electrical conductivity (5 ds/m and high stress).*

The use of Dynamic results in an increase of plants and roots fresh weight, both with water and saline stress and in standard conditions.

Dry matter without and with stress

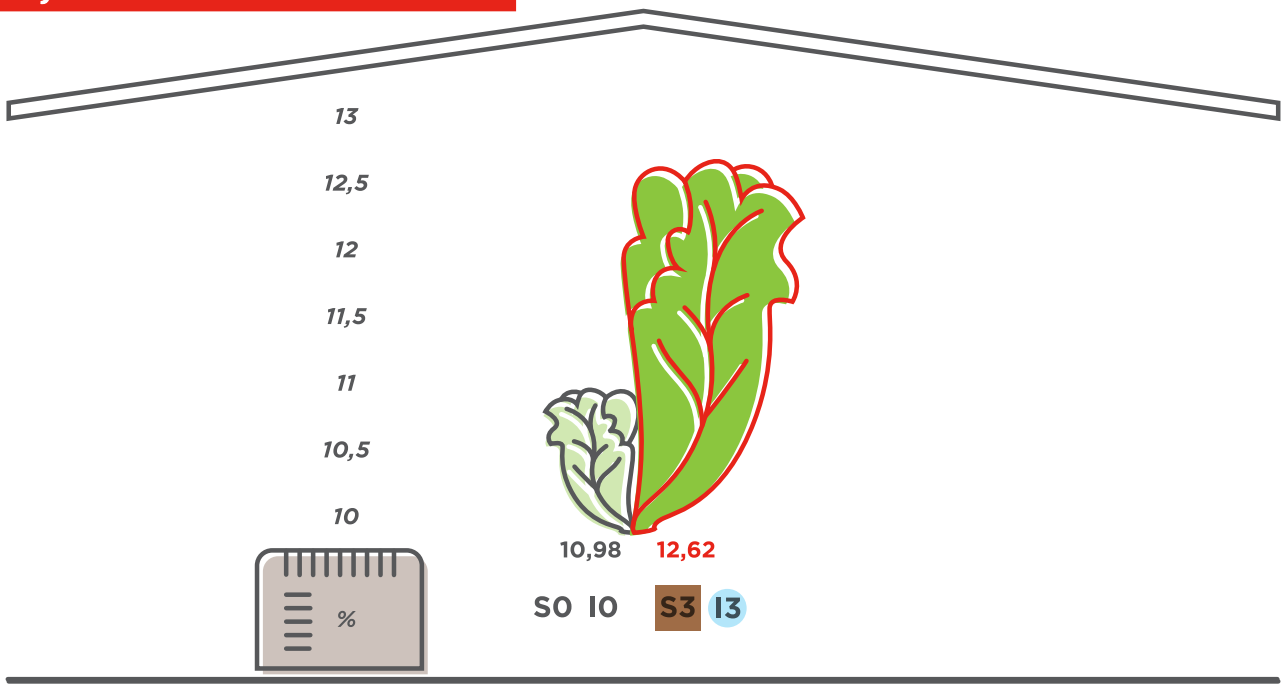


FIG 14 - *Roots dry matter in the two compared treatments under standard conditions (S0 and I0) and high electrical conductivity (5 ds/m and high stress).*

Dynamic results in an increase of dry matter compared to the not treated Control, even with water and saline stress.

Conclusions

The above experimental tests prove that Dynamic brings the following important benefits to plants:

- **BIOSTIMULANT ACTIVITY**
  even at low application doses
- **ANTISTRESS ACTIVITY**
  (highest yields with water stress, as well as a strong anti-stress effect in all thesis)
- **ROOTS DEVELOPMENT**
  (more abundant and resistant roots thanks to the increased dry matter)

Legend

- bottle
- jerrycan
- foliar application
- fertigation
- BIO allowed in organic agriculture
- RS technology

/HYDROFEVER+

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