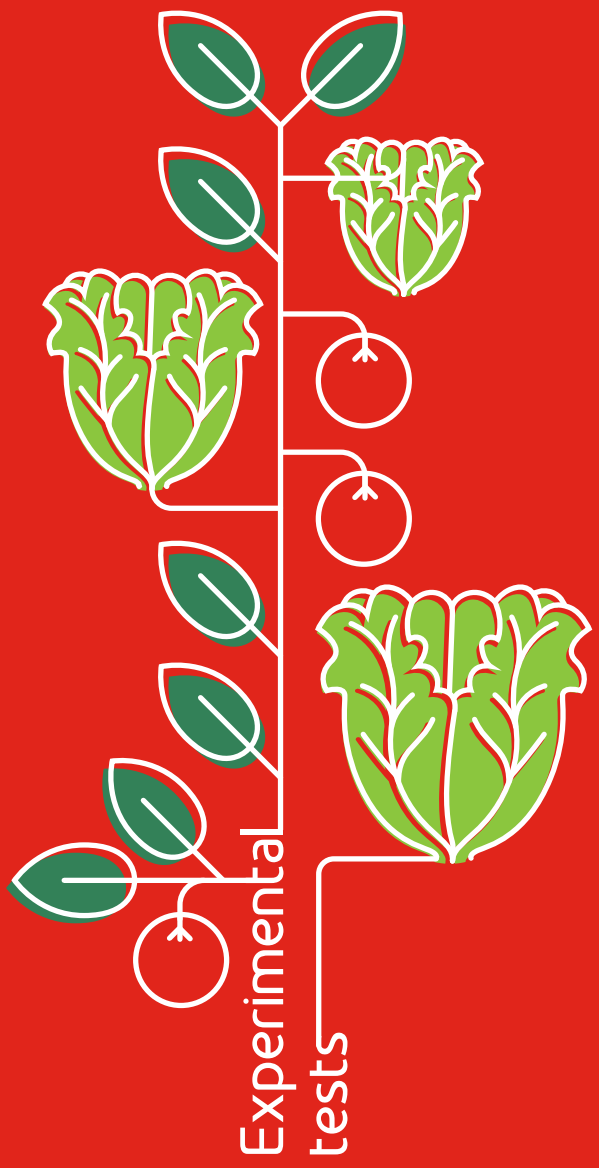
HYDRO HUMIC 16

WITH HIGH % OF HUMIC ACIDS



hydro fert

Hydro Humic 16

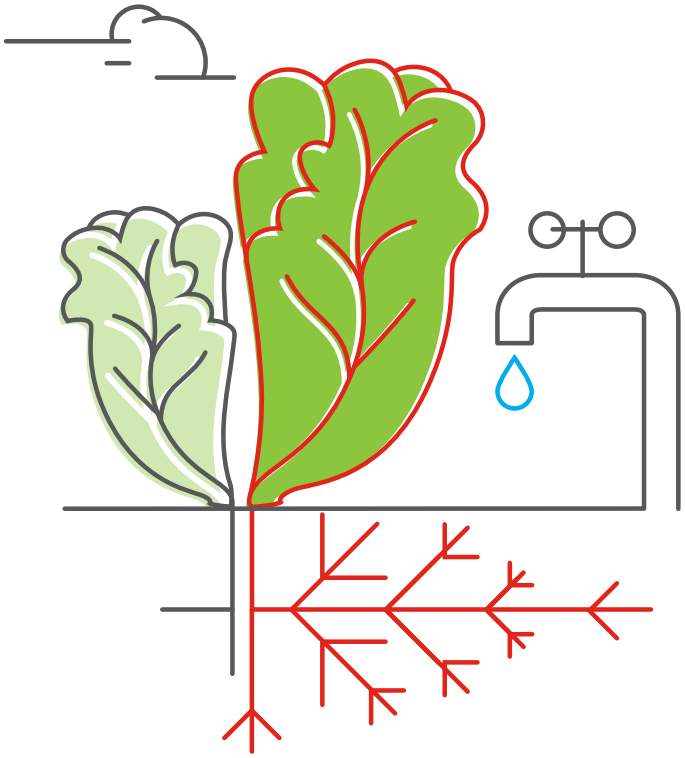
1L | 5 - 20 L | 120 L | 1000 L

RS

It is a biostimulant based on humic extracts from leonardite, containing a high concentration of fast-acting humic acids. Such elements are essential for the soil because they're able to enhance the Cation-exchange capacity (CEC), thus improving both the availability of nutrients and the efficiency of fertilization.

BENEFITS

- better roots development
- stronger resistance against water and saline stress
- increased vigour and yields



Hydro Humic 16 improves the soil features by enhancing the Cation-exchange capacity (CEC) and the absorption of nutrients through both carboxylic and phenolic groups. It also helps the development of chelated bonds and their absorption (in particular of iron chelate), in basic or alkaline soils. Besides, Hydro Humic 16 provides other benefits, such as preventing salt accumulations and controlling the process of mineralization.
It increases the development of roots system, seeds germination and the growth of stems, buds and leaves.
In foliar application, the product develops a transmitting action, making cell membrane easier to penetrate and helping the absorption and circulation of nutrients.

Overcoming water and saline stress and improving soil texture

Hydro Humic 16 helps plants to overcome water and saline stress, thus increasing yields, too. Humic and fulvic acids improve soil texture by positively influencing both drainage and water retention, besides enhancing the Cation-exchange capacity (CEC) and the absorption of nutrients. Therefore, plants can grow in an optimal way during all the phenological phases of their agricultural cycle.

Experimental results

Lettuce in greenhouse

MATERIALS AND METHODS

Species	*Lactuga sativa var.* Romana		
Experimental design	Factorial at fully randomized blocks		
Test duration	62 days		
Temperature	4–31 °C	**Average temperature**	15 °C
Relative humidity	30-95%		
Substratum	93,3% sandy / 3,2% clay / 3,5% loamy		
Method of administration	Fertigation		
Compared treatments			
2 biostimulant treatments **Control (1)** and **Hydro Humic 16 (4) 20 l/ha**			
3 salinity levels (**S1** **S2** **S3** = 0,48 dS/cm, 3 dS/cm, 5 dS/cm)			
3 water stress levels (**I1** **I2** **I3** = no stress / medium stress / high stress)			
Number of applications	2: 15/10/2020 (pre-transplanting) and 5/11/2020 (post-transplanting)		

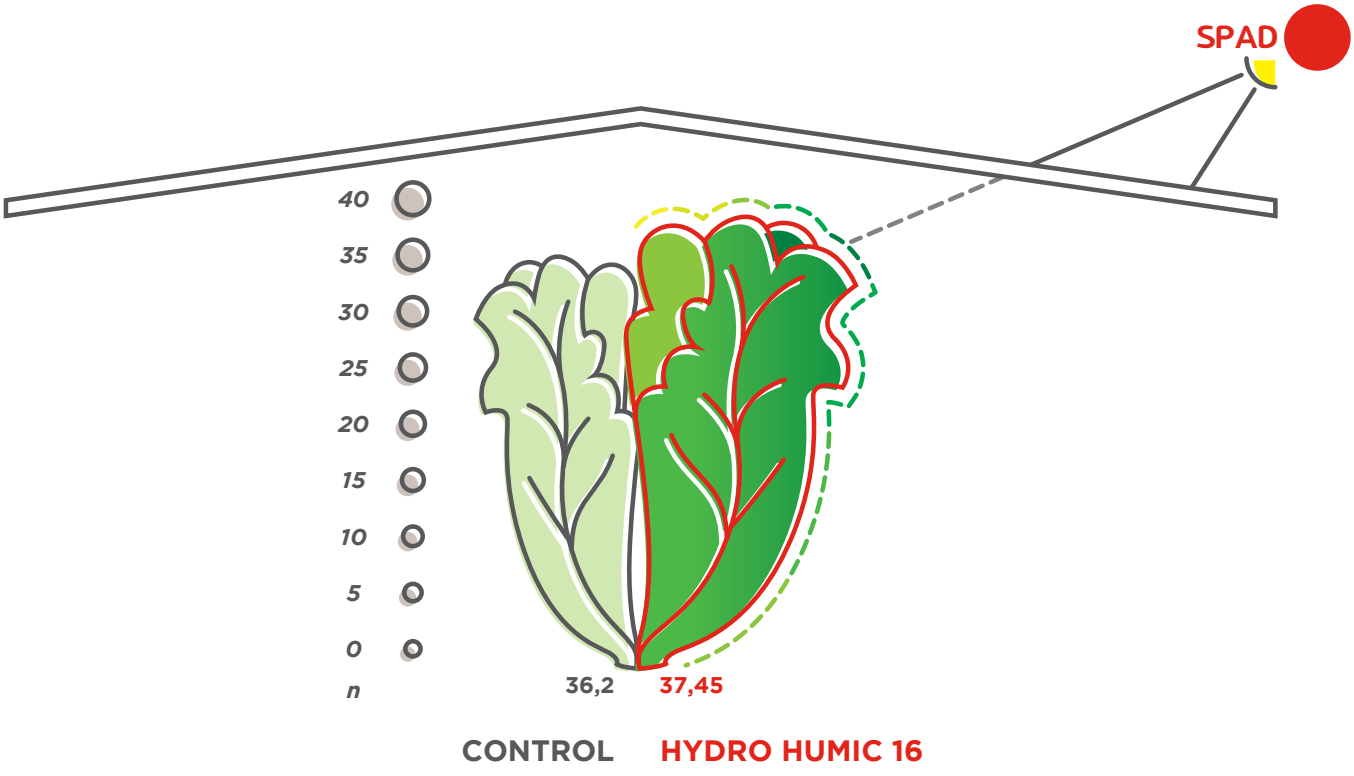
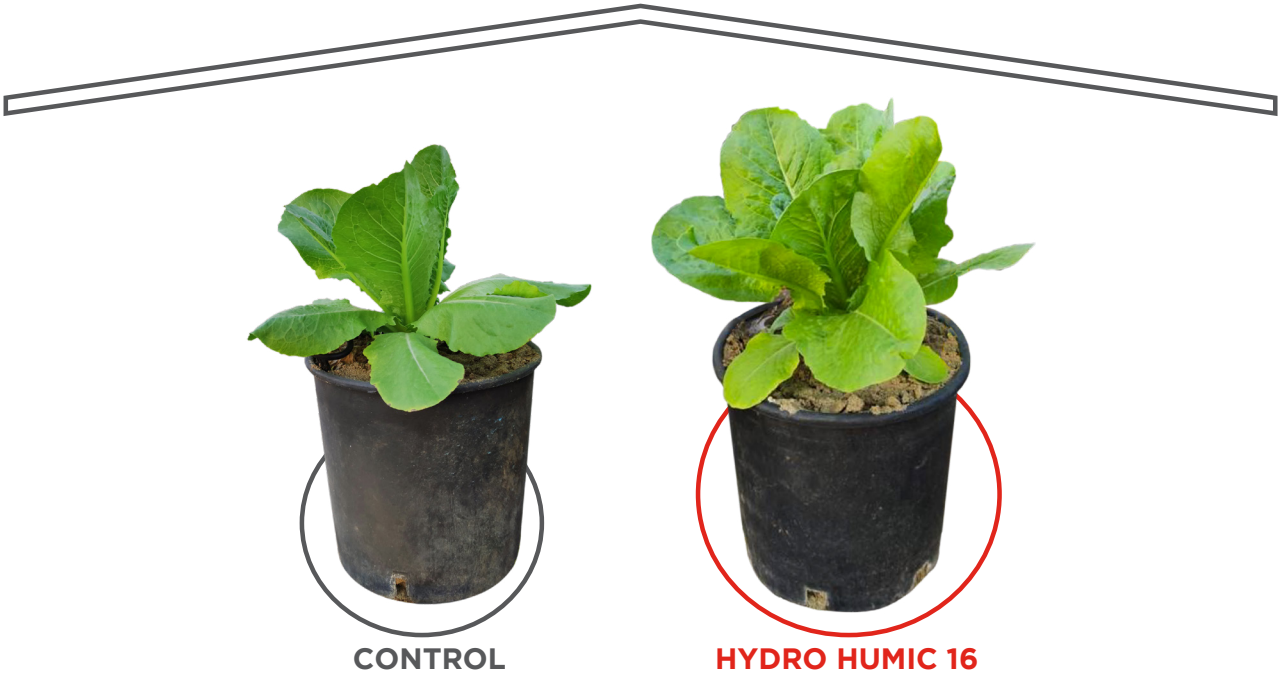


FIG 1 - *Average SPAD values, after 36 days from transplanting, in two compared treatments.*

SPAD values are a key indicator of plants health status. In fact, the higher the chlorophyll content the better the plants phytosanitary status, with consequent better yields, too. Hydro Humic 16 performs its biostimulating action, increasing SPAD values compared with the untreated Control.

VEGETATIVE PART



IMG 1 - *Vegetative development of lettuce plants in two compared treatments.*

FRESH WEIGHT OF ROOTS

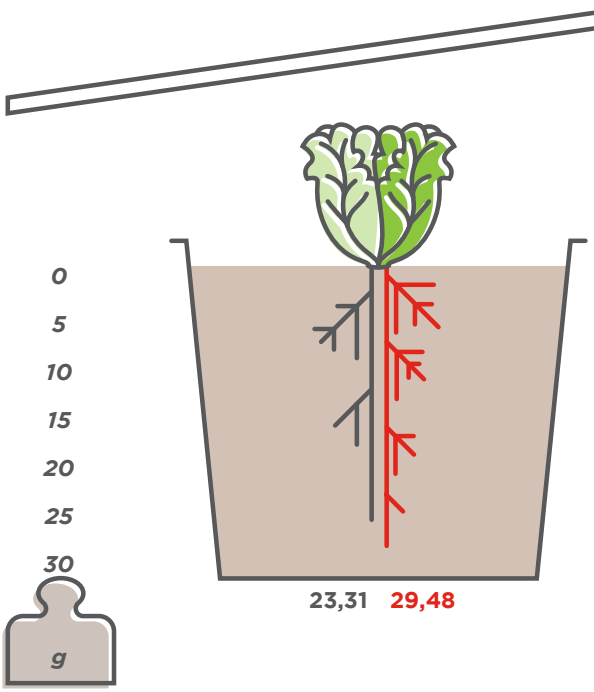


FIG 2 - *Average fresh weight of roots per plant, after 62 days from transplanting, in two compared treatments.*

Fulvic and humic acids in Hydro Humic 16 enhance a bigger production of roots primordia and hair, compared with Control. Therefore, its biostimulant activity develops a stronger roots system, able to explore a wider portion of the rhizosphere.

DRY MATTER OF ROOTS

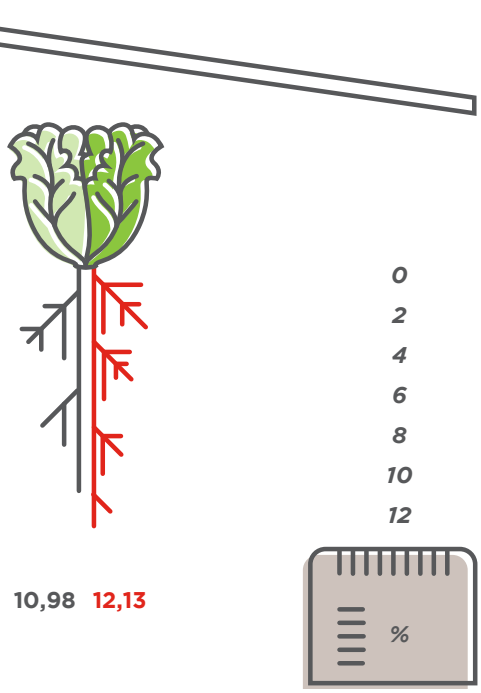


FIG 3 - *Average dry matter of roots per plant, after 62 days from transplanting, in two compared treatments.*

Hydro Humic 16 favours a higher % of dry matter in roots. The bigger quantity of extra substances in roots leads to a better nutritional status of plants.

ROOTS VOLUME INDEX

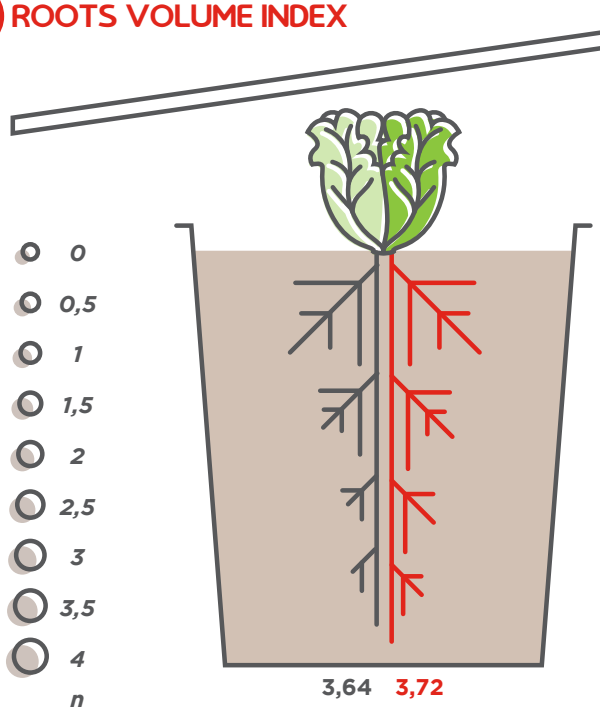


FIG 4 - Roots volume index, after 62 days from transplanting, in two compared treatments.

ROOTS WIDTH

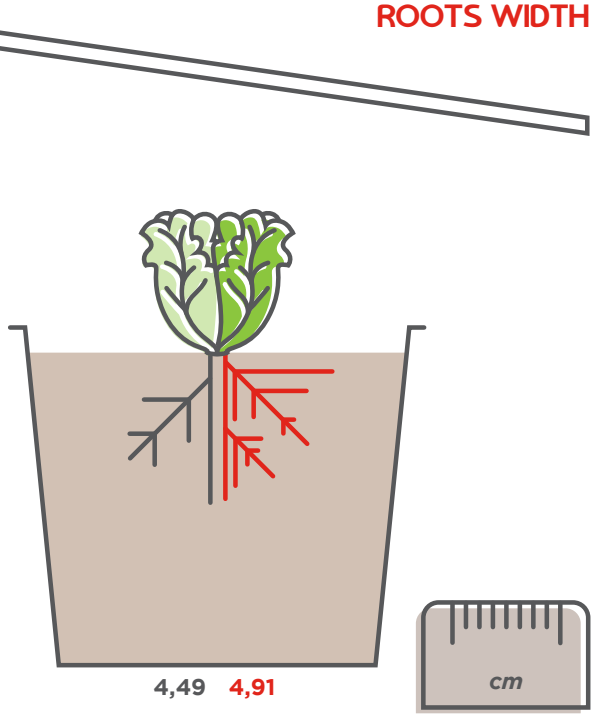


FIG 5 - Roots width, after 62 days from transplanting, in two compared treatments.

The application of Hydro Humic 16 results in higher values of roots volume and width, compared with the Control. More vigorous roots give plants a stronger resistance against biotic and abiotic stresses.

VIGOUR WITH STRESS

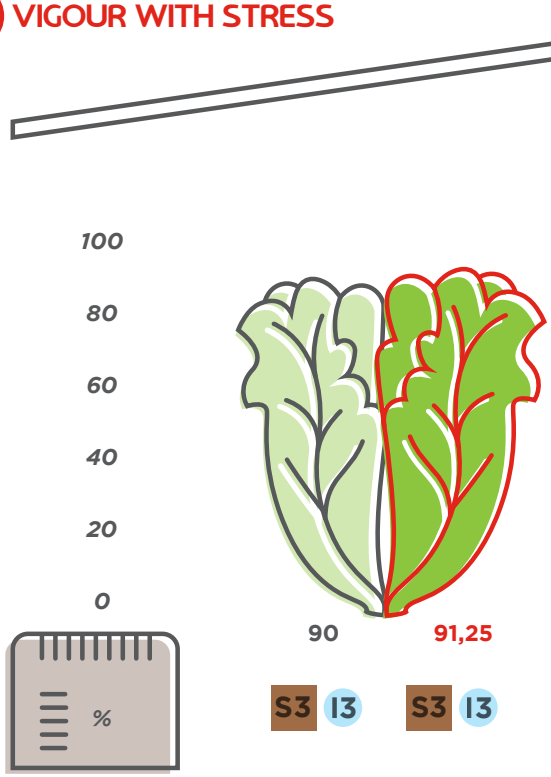
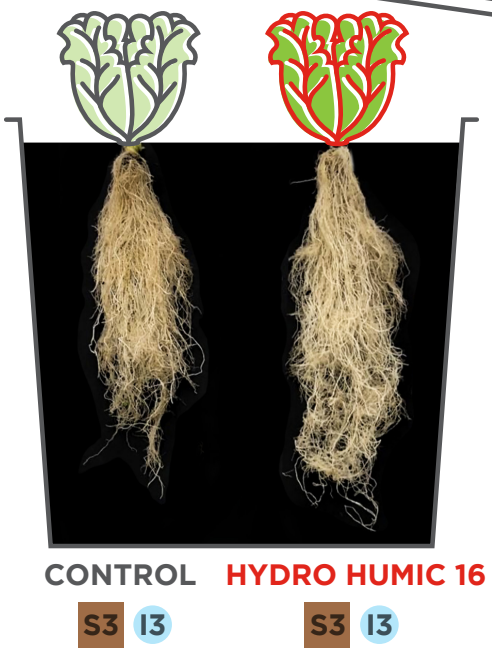


FIG 6 - Average vigour, after 27 days from transplanting, in two compared treatments, under saline and water stress conditions.

ROOTS WITH STRESS



IMG 2 - Roots of lettuce plants under saline and water stress conditions.

The use of Hydro Humic 16 increases the plants vigour, even under both water and saline stress conditions, compared with the untreated Control, thus resulting in better yields.

DRY MATTER WITH STRESS

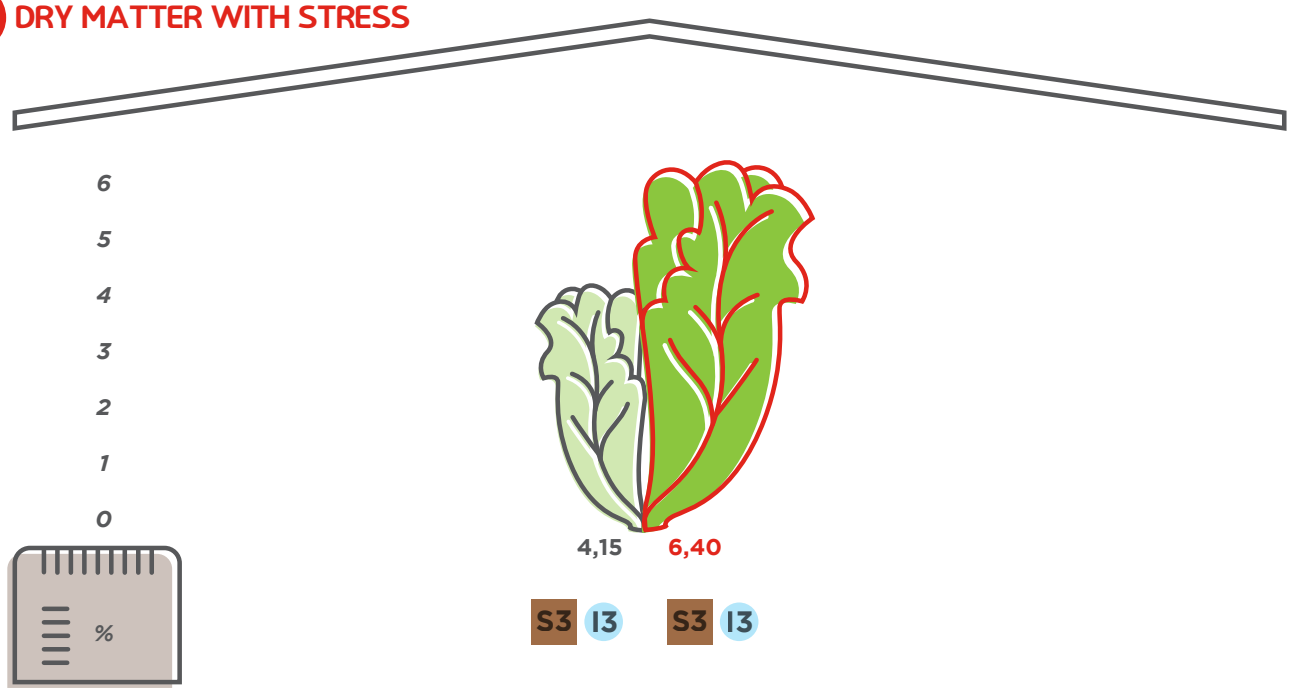
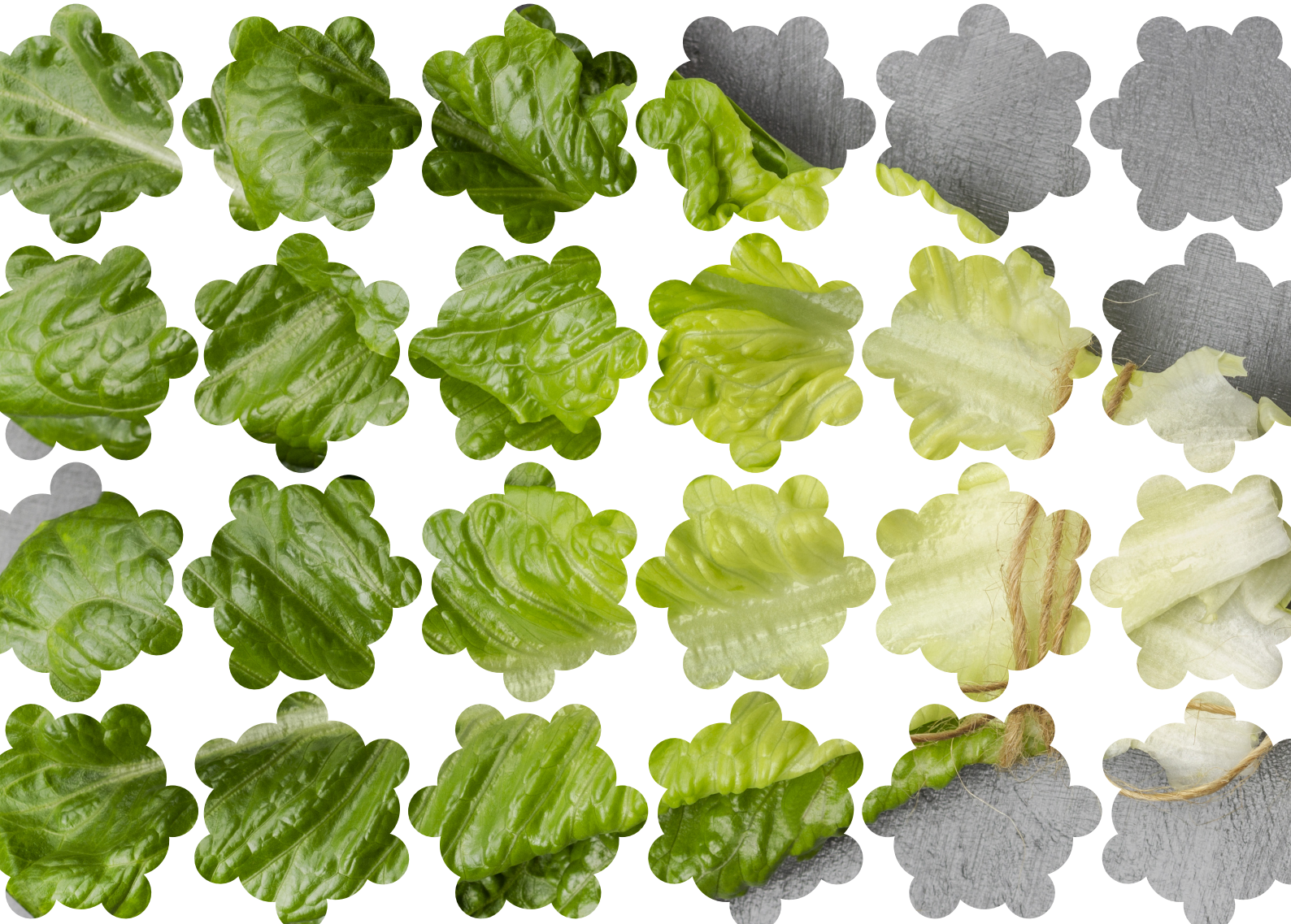


FIG 7 - *Average dry matter, after 62 days from transplanting, in two compared treatments under saline and water stress conditions*

Hydro Humic 16 increases the production of dry matter, even under saline and water stress conditions, thus resulting in bigger yields.



Experimental results

Tomato crops
in open fields

MATERIALS AND METHODS

Species	*Solanum lycopersicum* var. HEINZ 1538
Experimental design	Fully randomized blocks
Test duration	14 weeks: 13/05/2019 (transplanting) – 23/08/2019 (end of trial)
Temperature	According to the climate trend in the countryside of Trinitapoli (Italy)
Relative humidity	According to the climate trend in the countryside of Trinitapoli (Italy)
Light	Typical of the trial period
Substratum	Sandy and loamy soil
Method of administration	Fertigation
Compared treatments	**Control** and **Hydro Humic 16 (20 l/ha)**
Number of applications	3 (flowering, fruit setting, fruit growth)

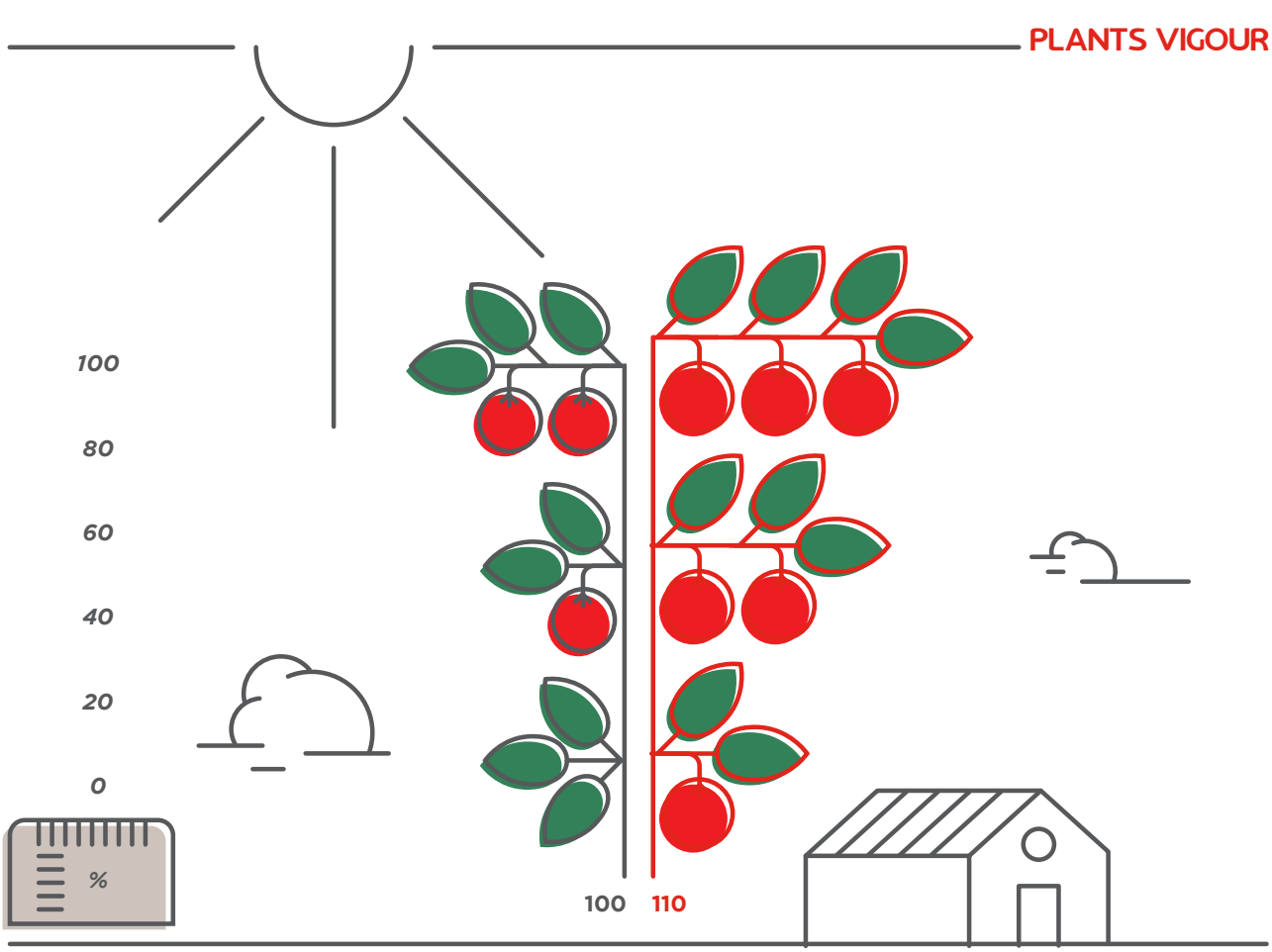


FIG 1 - *Average vigour per plant, after 69 days from transplanting, in two compared treatments*

The use of Hydro Humic 16 increases plants vigour compared with the untreated Control, thus resulting in bigger yields.

NDVI

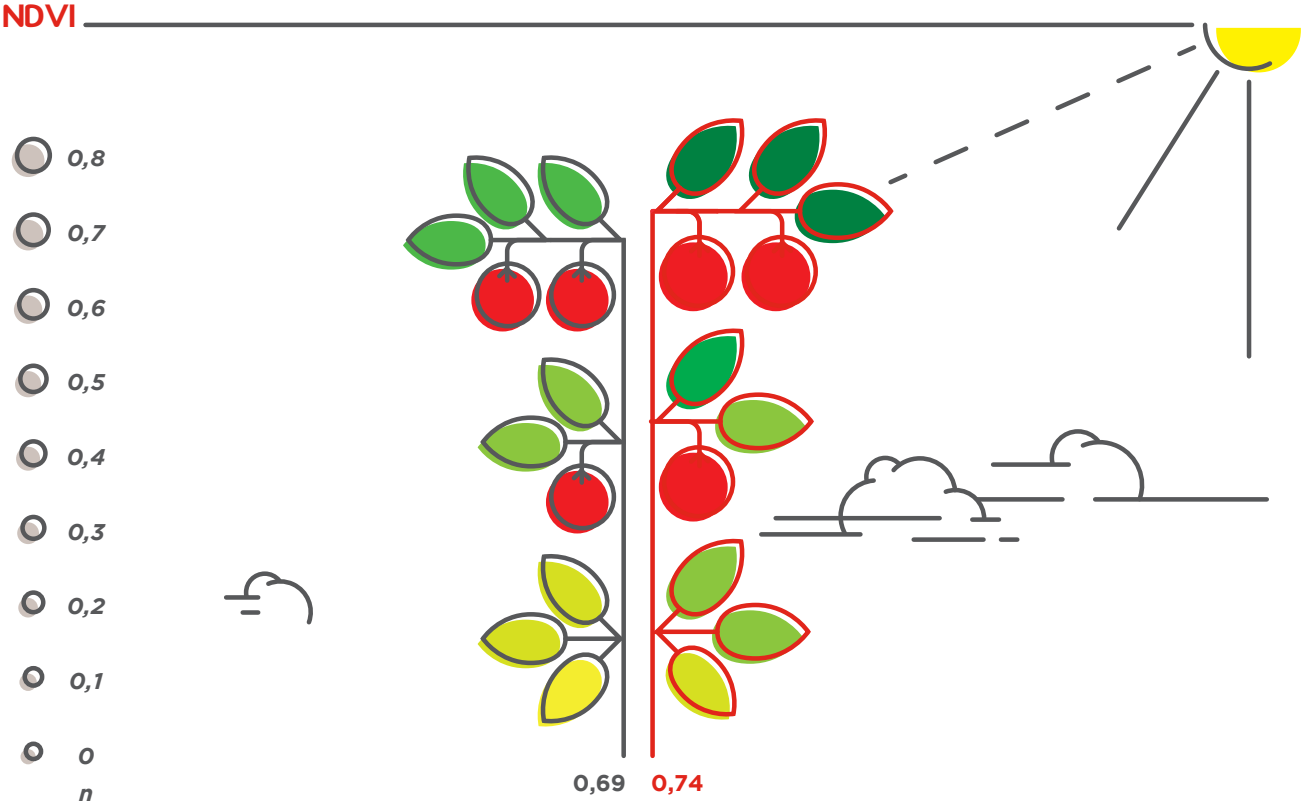


FIG 2 - *Average NDVI (Normalized Difference Vegetation Index) per plant, in two compared treatments*

Hydro Humic 16 increases both vigour and photosynthetic efficiency of plants, thus improving their phytosanitary status, making them stronger against biotic and abiotic stresses.

YIELDS

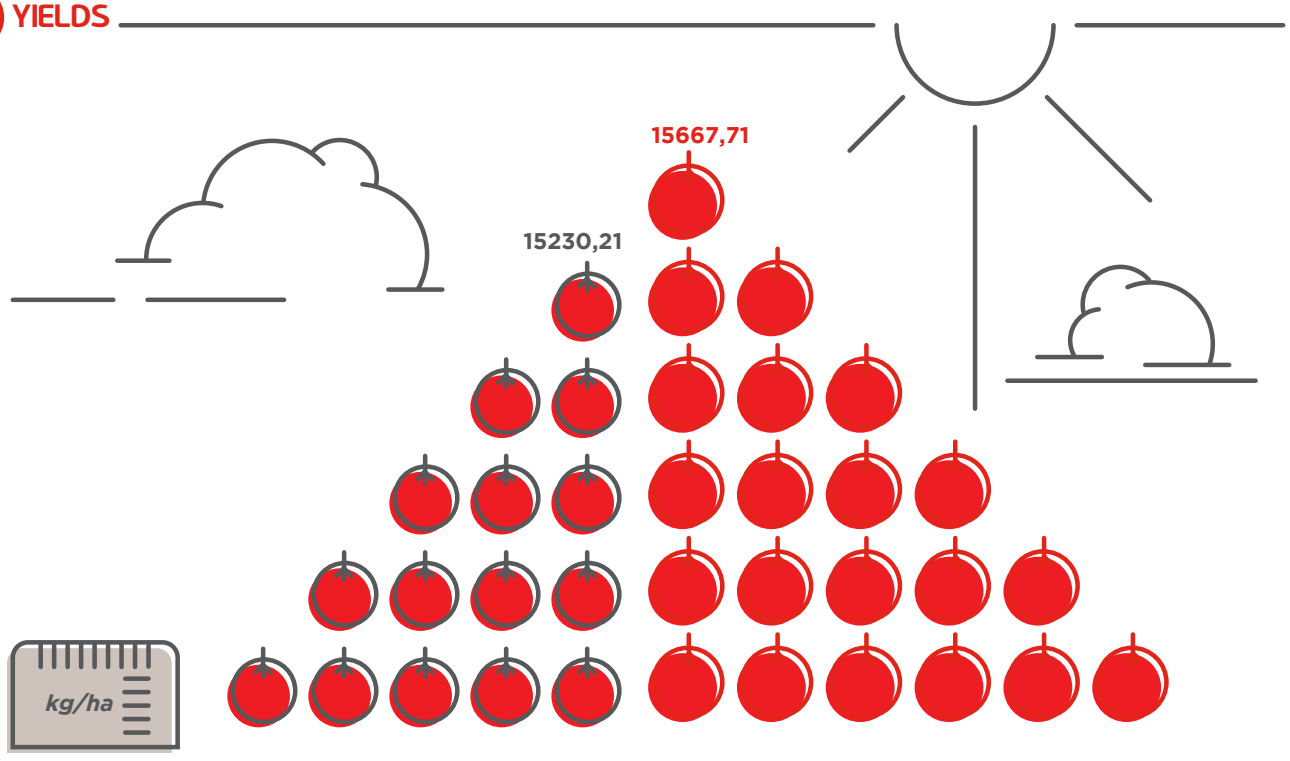


FIG 3 - *Average yields per plant, in two compared treatments.*

The use of Hydro Humic 16 increases the average yields per plant. That's because the humic and fulvic acids inside it allow a bigger accumulation of reserve substances.

FRUITS FRESH WEIGHT

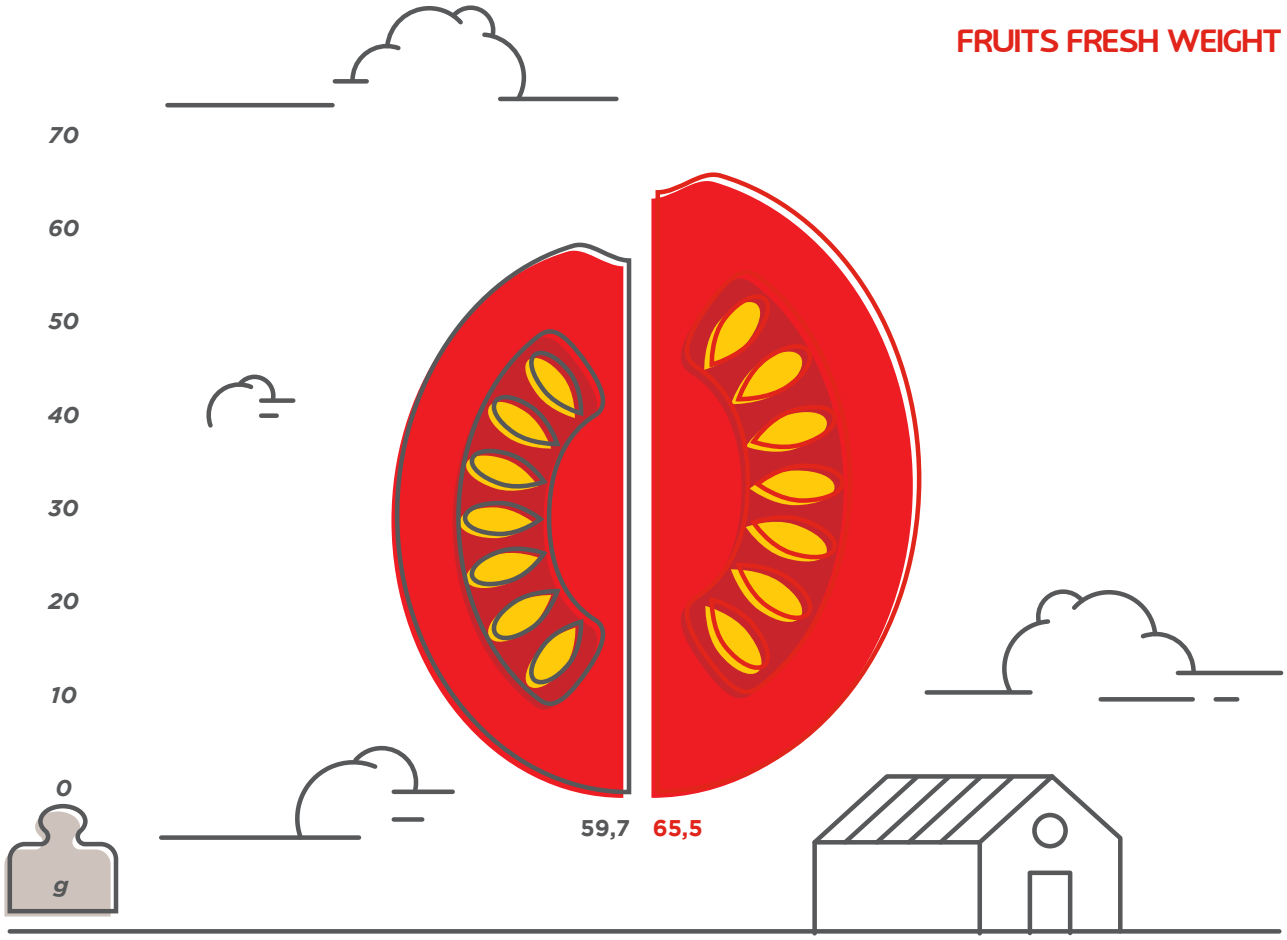


FIG 4 - *Average fruits fresh weight per plant, in two compared treatments.*

FRUITS SIZE

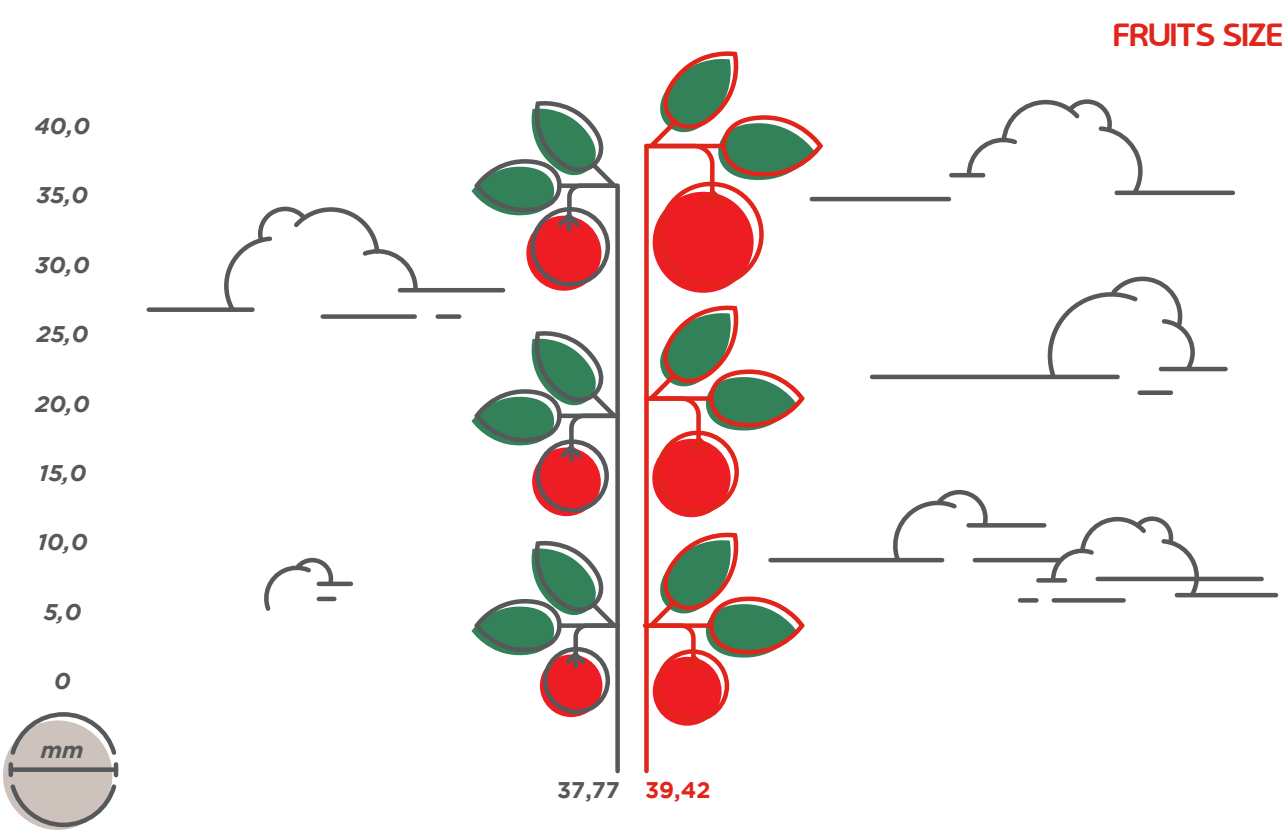


FIG 5 - *Average fruits size per plant, in two compared treatments.*

The application of Hydro Humic 16 allows to obtain bigger yields, with fruits showing a higher fresh weight as well as a wider diameter, compared with the untreated control.

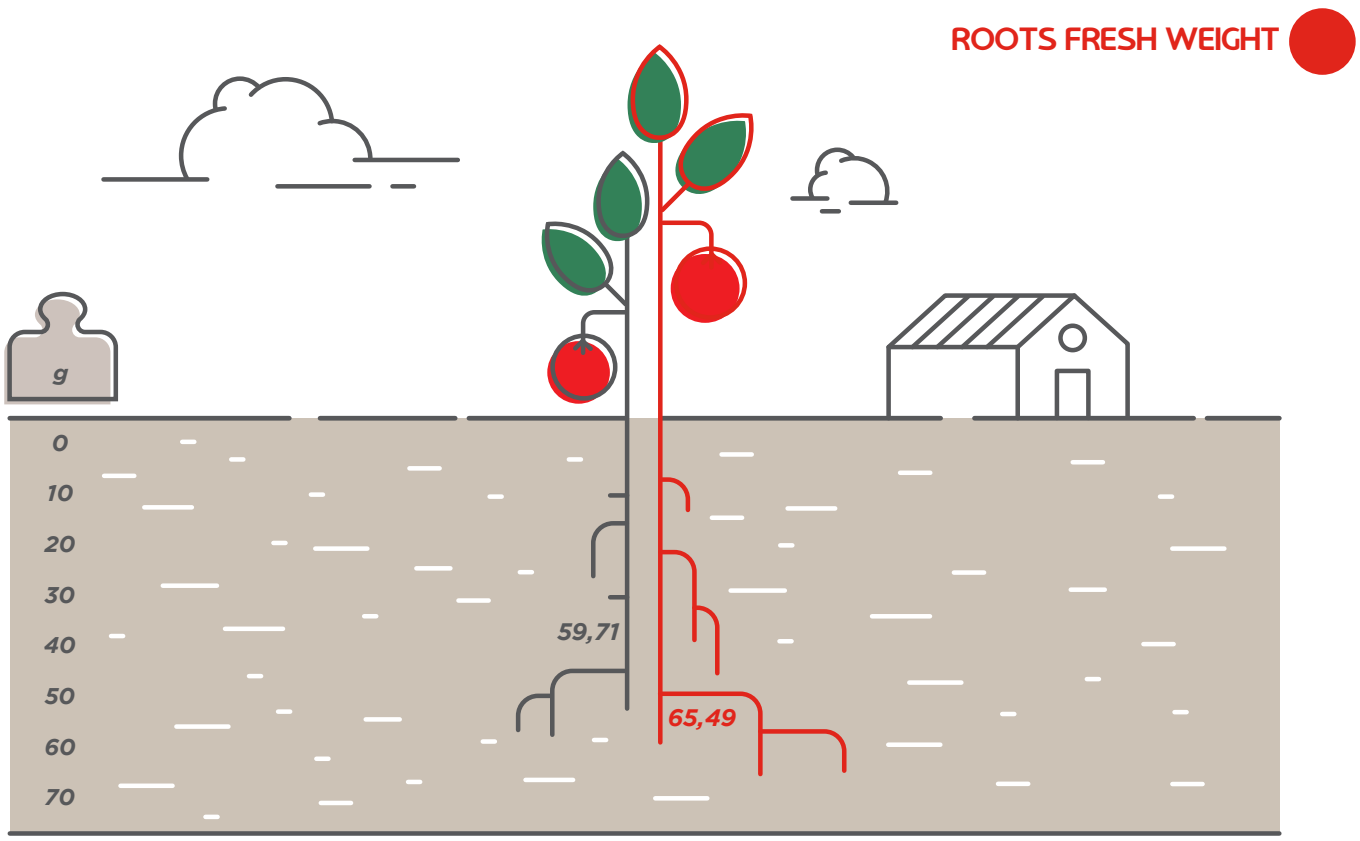
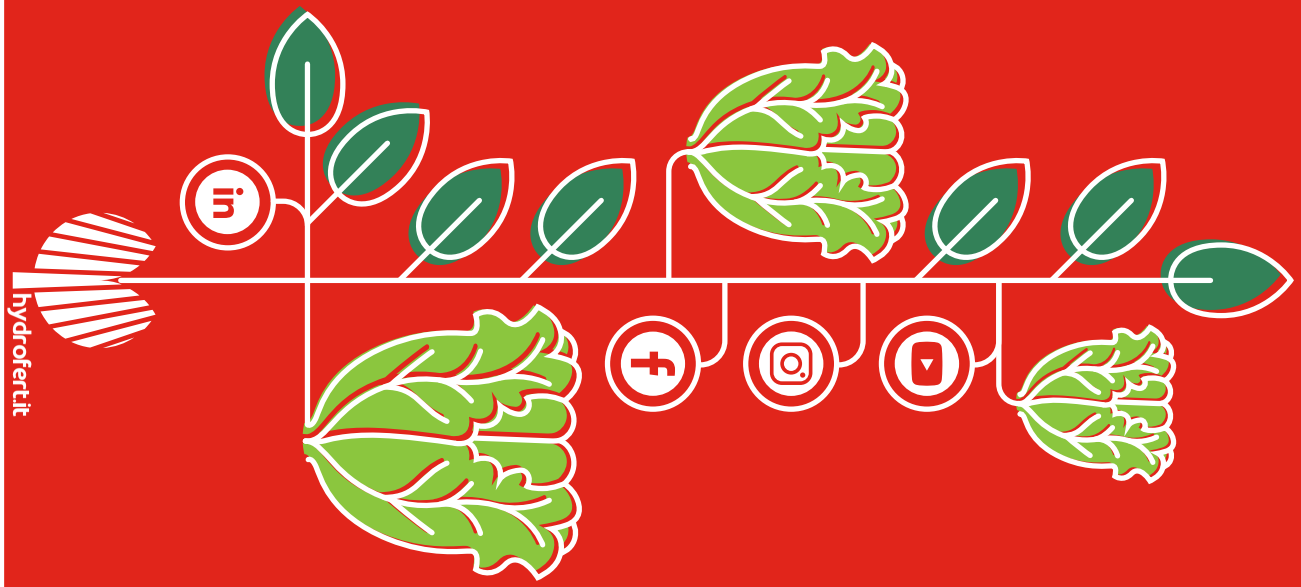


FIG 6 - *Average roots fresh weight per plant, after 69 days from transplanting, in two compared treatments*

Humic and fulvic acids contained in Hydro Humic 16 favour a greater development of radical hair. Therefore, a wider roots system, with a remarkable fresh weight, will be able to absorb the nutrients in a more efficient way.

LEGEND

- Bottle
- Jerrycan
- Foliar application
- Fertigation
- Allowed in organic agriculture
- RS Technology



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