



Fundamental
Systems

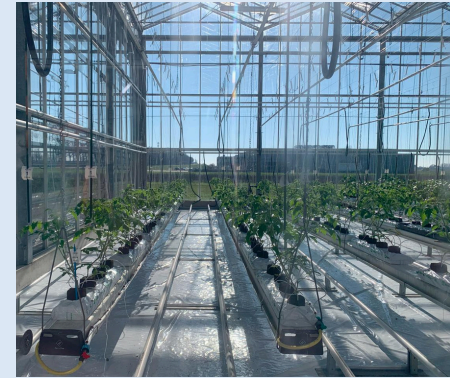


Cultivation trials

stowa

Fundamental Systems conducted research on tulips, tomato and bell pepper plants during six months in collaboration with Vivent, Verify, STOWA and students of the Tesla Minor Team from the University of Amsterdam.

One half of the crop was treated with infused water and the other half acted as a control group. The crops were treated with infused water containing 67% hydrogen and 33% oxygen.



In the treated plants

We saw a **higher**

- Nutrient index balance
- Photosynthetic activity
- Yield per plant in kg:
tomato +12%, bell pepper +8%, tulip +6%



And it required **less**

- Chemical intervention
- Plant protection products

No negative effect was found from water infusion on

- The plant
- The microbiome around the roots
- The water balance
- The composition of nutrients



Tulip trial



The study covered a full production cycle. Here we used a semi-eb and flood system in crates with overflow.

The treatment had a visible positive effect on root development, and within the microbiome we saw a shift towards the bulb's own composition.



Crop
Tulip

Size
10-11

Length
42 cm

Weight
25 gr

dropout
1,8%

Name
**Strong Gold
Purple Prince
Silver Dollar**

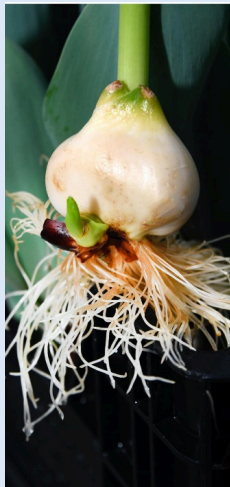
Root length
5 cm

Weight per cm
0,6 gr

Remarks
**No ruptures
Firmer leaves**

Root system

The rooting was better. The bulbs had white, fresh roots and smaller root development. This allowed more energy from the bulb to be used for growth.



Water system

We were able to realize a circular water system. Here we used water from an open basin and only coarse filter cloth.

No further interventions in the water were necessary and nutrients were not affected by the infusion. Eurofins demonstrated this with specialized water testing.



Tomato and bell pepper trial

The study covered a full life cycle: from seed to harvest. We used drip irrigation in a greenhouse.

To measure the effect of the treatment on the plants, we used biofeedback. This allowed us to measure both plant rhythm and the activity profile. Despite exposure to a lot of stress, the crops remained of good quality. Vivent's plant scientists analyzed the measurements from the sensors and came to the following conclusion:



The treated plants are **more active** and have a **more stable rhythm** with **more optimal hours** and **fewer suboptimal hours**.

This means the treatment helps reduce plants' response to stressors and changes in climate. They gain higher resilience.

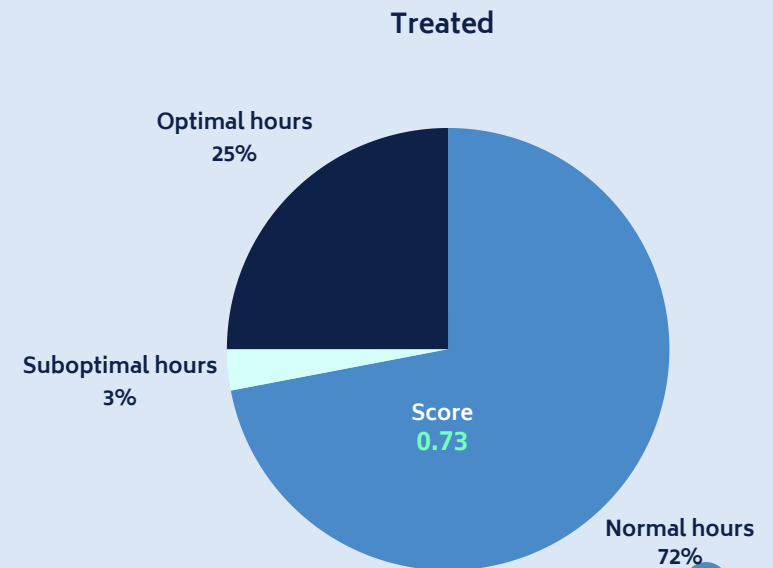
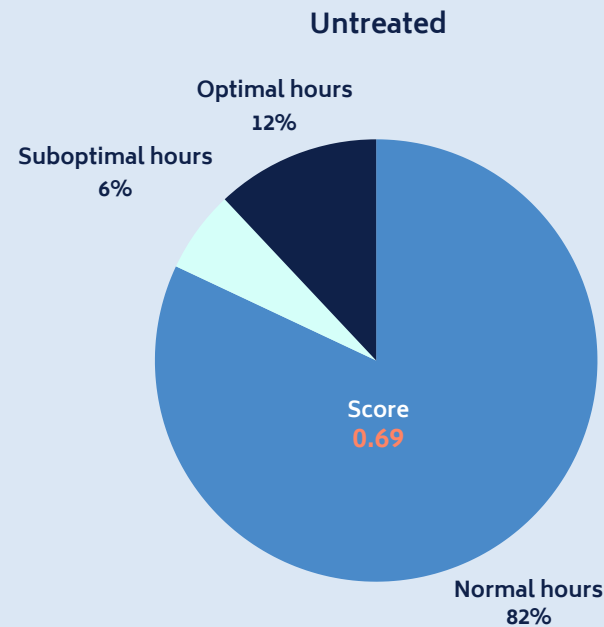
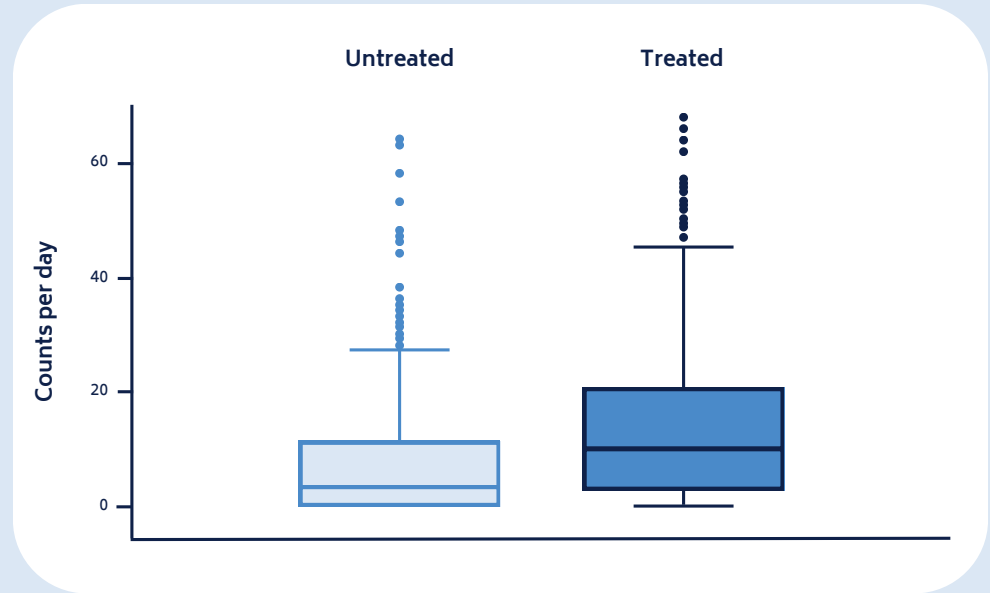
We have used high quality cultivars and have not been able to show any disease(s).



Tomato



Crop Tomato	Name Bronsino F1
Type Bunch	Fruits per bunch 5, joined
Type of plant Powerful and brief	Tolerance Si
Shape Round	Weight 130-150 gr
Resistances HR ToMV:0-2/Ff:A-E/Fol:0,1/For	Resistances IR TSWV/On



Bell pepper



Crop Bell pepper	Name Maranello F1
Type Blocked	Color Red
Type of plant Powerful and brief	Earliness Very early
Size 85-95 mm	Weight 130-150 gr
Resistances HR Tm:0-2	Organic Yes

