

# SUCCESS STORIES USING STIMBLUE+

**CITRUS CULTIVATION**

# ABOUT THE TRIAL

TRIAL CONDUCTED BY

SynTech  
Research

## LOCATION OF TRIALS



Western Cape &  
Limpopo Provinces

**SOUTH AFRICA**

StimBlue+ 2 L/ha



## SEASON

**SEP 2024 – MAY 2025**

## SOIL TYPES

**CLAY LOAM &  
LOAMY SAND**

## CLIMATE

1) Arid Steppe - hot and 2) Temperate dry summer - hot

**+\$1,030**

increased economic  
returns per hectare

**+3–8%**


greater yields

# CITRUS IN SOUTH AFRICA

- + South Africa is the world's second-largest exporter of citrus, accounting for 11% of global exports, valued at USD 1.8 billion in 2024<sup>1</sup> with Limpopo province leading the national production of citrus at 42%.<sup>2</sup>
- + Farmers across provinces have started to acknowledge that the climate is becoming warmer and drier and have noted higher incidences of pests and drought.<sup>3</sup>
- + Biostimulants have been explored as a solution to support disease management<sup>4</sup> and stress tolerance.<sup>4,5</sup>
- + Together with SynTech Research, we conducted two trials on citrus (grapefruit and oranges) in the Western Cape and Limpopo provinces to assess the efficacy of StimBlue+.



Oranges treated with StimBlue+ (2 L/ha)



# **RESULTS EXPLAINED**

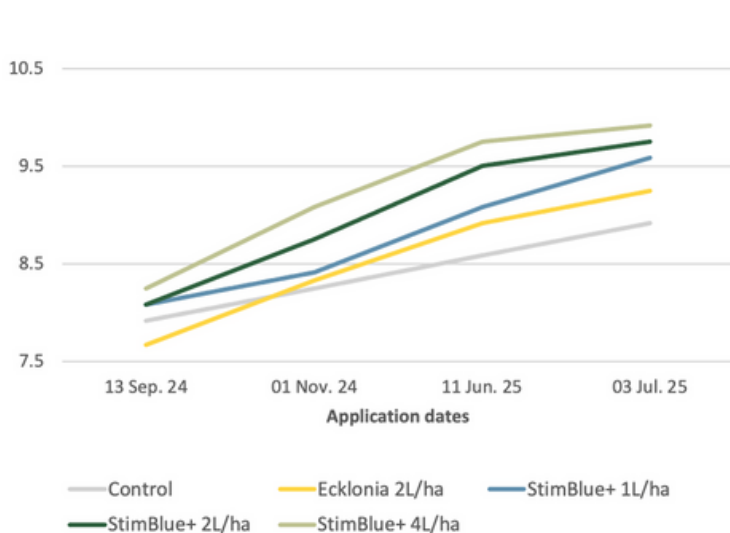
# CROP VIGOUR

Crop vigour reflects the overall **health and growth of plants**, and is shaped by a combination of factors including nutrient availability, soil characteristics, and water conditions.

**Biostimulants can enhance crop vigour**, especially when applied at an early growing stage, by supporting germination, growth and resistance to stress<sup>6</sup> leading to **higher harvests**.<sup>7</sup>

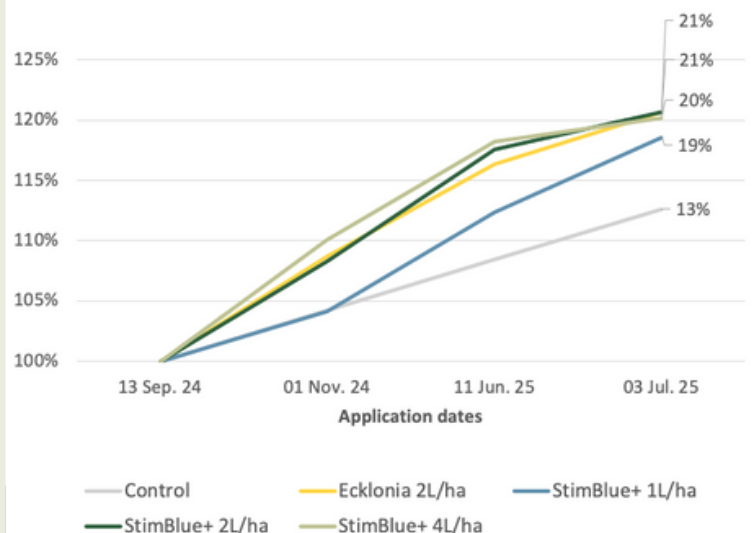
- ➕ Overall, plots treated with StimBlue+ showed **greater vigour** compared to the control and competitor, with StimBlue+ at 2 L/ha having the highest relative development in crop vigour from the first application.

**Crop vigor (1-10)**



Crop vigour was assessed on a scale of 1 - 10 (1 = crop dead, 10 = excellent condition).

**Crop vigor relative development**



Crop vigour increased from the first application until harvest.

# SUGAR CONTENT

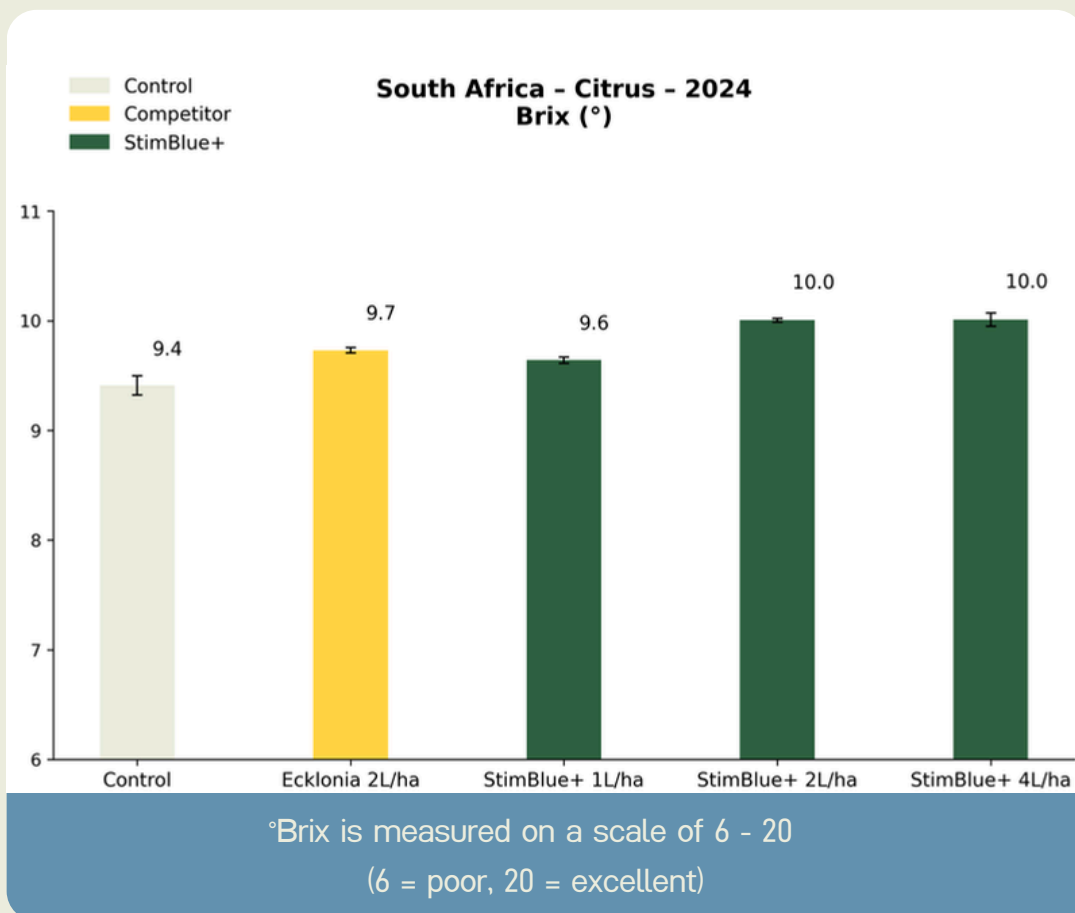


The application of StimBlue+ had a positive effect on quality parameters such as chlorophyll content and Brix.

Chlorophyll content\*, an indicator of plant health, supports the plant's photosynthetic capacity which increases the production of sugars\* fueling plants' growth and defense processes.



The application of StimBlue+ increased °Brix by 6% compared to control.



\*Chlorophyll content is measured through the SPAD index.

\*Sugar content is measured by degrees BRIX.



Greenness of grapefruit leaves treated with StimBlue+



Grapefruit at harvest.

# HIGHER YIELDS

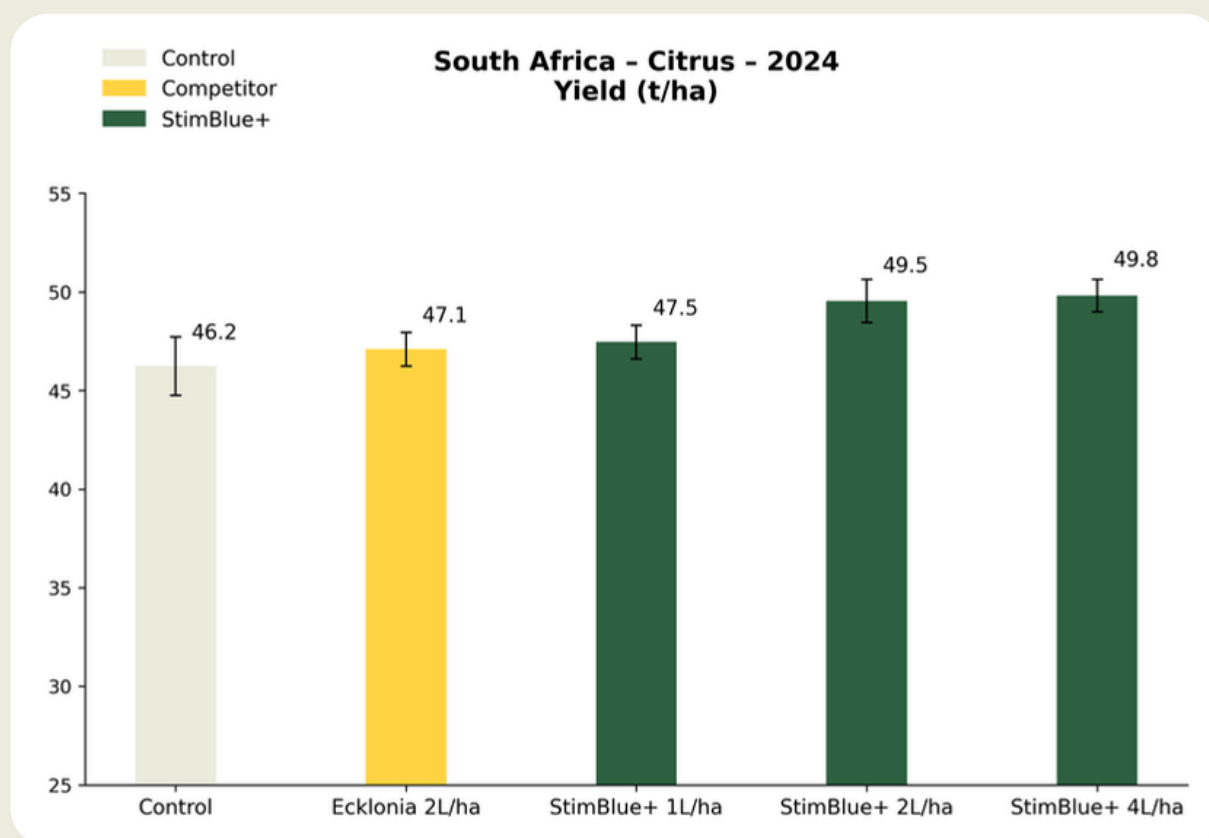


StimBlue+ generated 3 - 8% greater yields compared to standard cultivation practices (control).

Healthier and stronger fruits with elevated rates of photosynthetic activity lead to **greater harvests** with higher fruit count, heavier fruits, with bigger diameter.



The application of StimBlue+ at 2 L/ha contributed to greater fruit count, diameter, and yields compared to the control and the competitor.



According to our suggested application rate (2 L/ha), plots treated with StimBlue+ showed increased economic returns of \$1,030 per hectare.\*

\*This economic evaluation was calculated based on a farm gate price of \$335 per tonne.<sup>8,9</sup>

# APPLICATIONS

- + First application: immersion of seedling roots for 20 minutes
- + Second application: foliar spray before flowering ~ BBCH50
- + Third application: foliar spray during fruit setting ~ BBCH75

\*This approach ensures the plants receive support at critical growth stages.  
The results are based on StimBlue+ suggested application rates and calendars



# ABOUT STIMBLUE+

StimBlue+, a biostimulant made from 100% cultivated Giant Kelp (*Macrocystis pyrifera*), has shown to be a great solution for citrus cultivation. The trial data suggests that it offers significant, positive effects on crop vigour, leading to greater yields and bigger fruits.

We plant kelp forests around the globe to boost the health and biodiversity of the oceans while locking away CO<sub>2</sub>, and producing products to offer sustainable alternatives to help transition agriculture to more sustainable practices.



**CONTACT  
OUR TEAM**

✉ [valentin.pitiot@kelp.blue](mailto:valentin.pitiot@kelp.blue)

☎ +33 6 11 10 12 85



# REFERENCES

1. International Trade Centre (ITC). (2019.). List of exporting countries for the selected product in 2024 | Product: 0805 Citrus fruit, fresh or dried. Copyright © 2008-2014 International Trade Centre. All Rights Reserved.  
<https://www.trademap.org/>
2. Joseph, S., Antwi, M. A., Chagwiza, C., & Rubhara, T. T. (2021). Climate change adaptation strategies and production efficiency: The case of citrus farmers in the Limpopo province, South Africa. *Jàmbá Journal of Disaster Risk Studies*, 13(1). <https://doi.org/10.4102/jamba.v13i1.1093>
3. Maponya, P., & Mpandeli, S. (2012). Climate Change and Agricultural Production in South Africa: Impacts and Adaptation options. *Journal of Agricultural Science*, 4(10). <https://doi.org/10.5539/jas.v4n10p48>
4. Bahmani, R., More, P., Babarinde, S., Zhou, M., & Prithiviraj, B. (2023). Seaweeds for plant disease management: current research advances and future perspectives. *Phytoparasitica*, 51(4), 783–802. <https://doi.org/10.1007/s12600-023-01074-x>
5. Deolu-Ajayi, A. O., Van Der Meer, I. M., Van Der Werf, A., & Karlova, R. (2022). The power of seaweeds as plant biostimulants to boost crop production under abiotic stress. *Plant Cell & Environment*, 45(9), 2537–2553.  
<https://doi.org/10.1111/pce.14391>
6. Bulgari R, Cocetta G, Trivellini A, Vernieri P, Ferrante A. Biostimulants and crop responses: a review. *Biological Agriculture & Horticulture*. 2014;31(1):1-17. doi:10.1080/01448765.2014.964649
7. TeKrony DM, Egli DB. Relationship of seed vigor to crop yield: A review. *Crop Science*. 1991;31(3):816-822. doi:10.2135/cropsci1991.0011183x0003100030054x
8. World Bank. World Bank Commodities Price Data (the Pink Sheet).; 2025.  
<https://thedocs.worldbank.org/en/doc/18675f1d1639c7a34d463f59263ba0a2-0050012025/related/CMO-Pink-Sheet-April-2025.pdf>
9. USDA. South Africa Citrus Annual 2024.  
[https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Citrus%20Annual\\_Pretoria\\_South%20Africa%20-%20Republic%20of\\_SF2024-0038.pdf](https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Citrus%20Annual_Pretoria_South%20Africa%20-%20Republic%20of_SF2024-0038.pdf)



kelp blue

# GROW MORE