SynTech Research Group

SUCCESS STORIES USING STIMBLUE+

COFFEE CULTIVATION

kelp blue

STIM+BLUE

ABOUT THE TRIAL

TRIAL CONDUCTED BY
SynTech Research Group

LOCATION OF TRIALS



Minas Gerais & São Paulo
BRAZIL

TEMPERATE - DRY WINTER, HOT & TROPICAL - DRY WINTER



SEASON

AUG 2025 - APR 2026

SOIL TYPES

CLAY, SANDY CLAY, SANDY LOAM

VARIETIES

Mundo Novo, Catuaí Vermelho & Topázio (Coffea arabica L.)

+$970

increased economic returns per hectare

+9%

yield increase per hectare

COFFEE IN BRAZIL

- Brazil is the world's largest coffee producer, with the state of Minas Gerais leading production, accounting for roughly half of national output. Arabica is concentrated in the southeastern states of Minas Gerais, São Paulo and Paraná, while robusta production is centred in Espírito Santo and Bahia.[1]

- Rising temperatures and prolonged drought are increasingly threatening yields. High air temperatures during flowering, especially alongside a prolonged dry season, can cause flower abortion and directly reduce production.[2] These conditions are showing a substantial negative impact on yields, concentrated in the Southeast, including Minas Gerais, the region with the highest Arabica production.[3]

- Biostimulants have shown to support coffee resilience to heat and drought stress. For example, seaweed extract-treated plants under drought have been shown to enhance water use efficiency.[4]

- Together with SynTech Research, we conducted four trials spanning two states, two coffee variety groups and two growing seasons' worth of applications to assess the all-around efficacy of StimBlue+ on coffee. Results show consistent benefits on coffee yield and bean size, colour and uniformity.

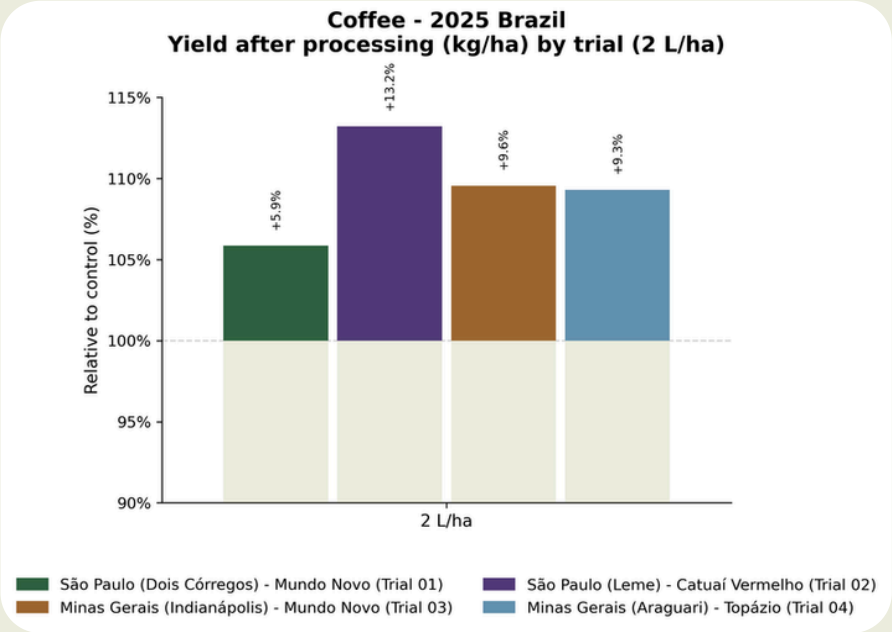




RESULTS EXPLAINED

HIGHER YIELDS

Across 4 trials, StimBlue+ at 2 L/ha increased coffee yields by +9% on average, generating economic returns of +US$970 per hectare.



*Based on an average farm-gate price of US$4,930 per tonne according to CONAB, The National Supply Company (Companhia Nacional de Abastecimento).

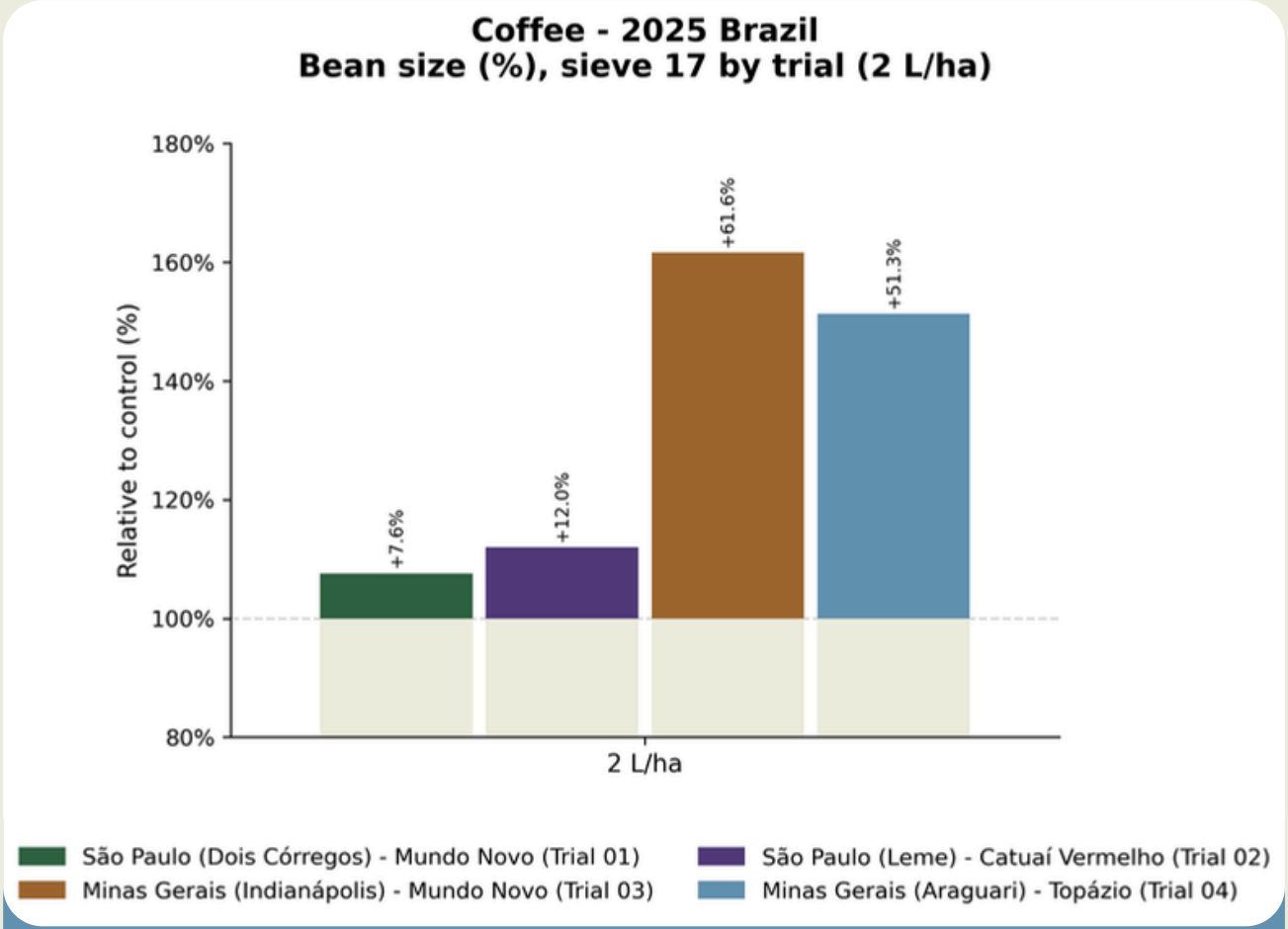
Trial	Variety	Location	Control Yield	Relative to regional average	Yield gains with StimBlue+
1	Mundo Novo	Dois Córregos, São Paulo	3,982.50 kg/ha (66.4 sacas/ha)	~2x above average	+6% (+3.8 sacas/ha)
2	Catuaí Vermelho	Leme, São Paulo	1,755.89 kg/ha (29.3 sacas/ha)	Below average	+13% (+3.8 sacas/ha)
3	Mundo Novo	Indianápolis, Minas Gerais	~1,964 kg/ha (32.7 sacas/ha)	Average	+10% (+1.7 sacas/ha)
4	Araguari	Araguari, Minas Gerais	~2,391 kg/ha (39.9 sacas/ha)	Average	+9% (+10.9 sacas/ha)

All four trials showed a positive response to StimBlue+, though the size and statistical strength of the effect varied between sites. The three sites starting from average or below-average productivity (trials 02–04) showed large, statistically significant gains. Trial 01, which started from an exceptionally high baseline of nearly double the regional average, showed a smaller response that was not statistically significant. This pattern is consistent with a ceiling effect: plants already yielding close to their potential leave less room for improvement. It suggests that StimBlue+ may deliver its greatest benefit where yields are average or below average.

LARGER, MORE UNIFORM BEANS

Overall, StimBlue+ significantly redistributed beans from smaller towards larger commercial size classes.

StimBlue+ increased the proportion of beans retained on sieve 17 and reduced the proportion on sieves 15 and below, thereby shifting more of the harvest into higher-value size classes and enabling a more uniform lot.



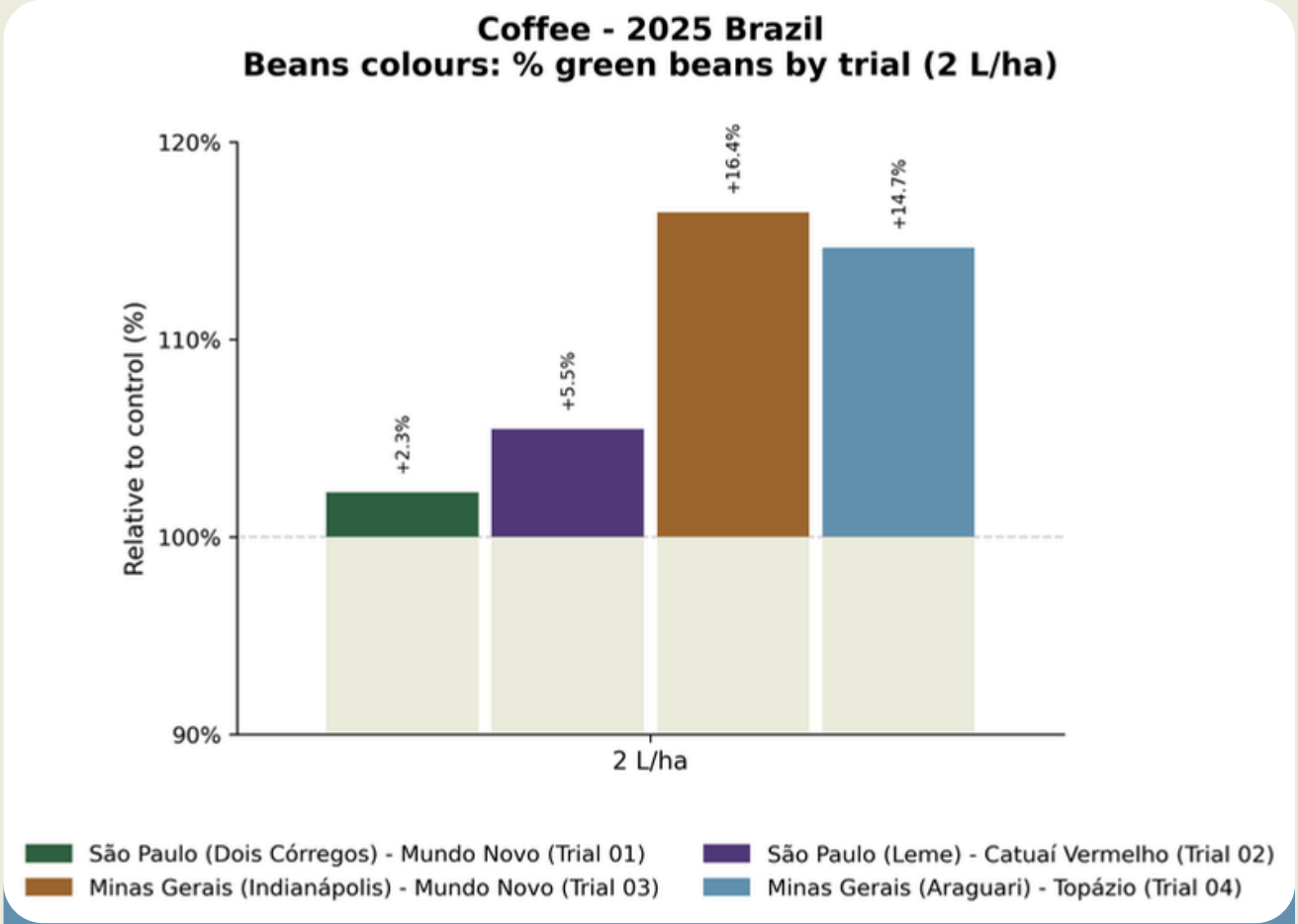
Across 4 trials, the application of StimBlue+ resulted in a greater proportion of sieve 17 beans of between +8% and +62%.

In the Brazilian green coffee trade, the share of large flat beans (sieve 17 and above) is the main attribute buyers use to set the price per bag.[6] Internationally, lots specified as screen 17/18 are the premium commercial grade and command the highest price.[7] Uniform bean size also helps ensure an even roast, which roasters value.[8]

IMPROVED BEAN COLOUR

StimBlue+ shifted bean colour distribution, characterised by more green beans and fewer green-yellow, yellow and white-ish beans.

Bean colour is an indicator of green coffee freshness, quality and processing.[9] A uniform blue-green to green hue is associated with fresh beans at optimal moisture (10–12%)[10] and with the absence of defects from over-fermentation or improper drying, which typically show as brown, blotchy or bleached beans.[11]



At 2 L/ha, StimBlue+ shifted the proportion of green beans by between +2% and +16%.

APPLICATIONS

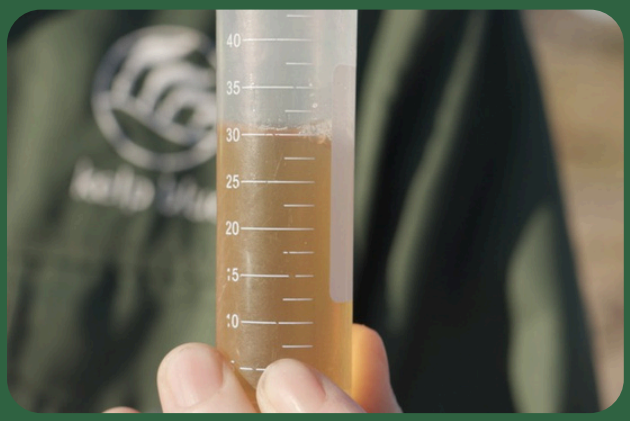
3 foliar applications at 2 L/ha

- First application: Inflorescence buds swelling in leaf axils | BBCH51
- Second application: 50% of flowers open | BBCH65
- Third application: Fruits are light green | BBCH73

Optional fourth application when fruits have reached 70% of their final size (BBCH 77).

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









REFERENCES

1. USDA Foreign Agricultural Service (2025). Brazil: Coffee Annual, GAIN Report BR2025-0013. Brasília.
2. Venancio, L.P. et al. (2020). Impact of drought associated with high temperatures on Coffea canephora plantations: a case study in Espírito Santo State, Brazil. Scientific Reports, 10, 19719.
3. Koh, I., Garrett, R., Janetos, A. & Mueller, N.D. (2020). Climate risks to Brazilian coffee production. Environmental Research Letters, 15, 104015.
4. Ali, O., Ramsubhag, A. & Jayaraman, J. (2021). Biostimulant properties of seaweed extracts in plants: implications towards sustainable crop production. Plants, 10(3), 531.
5. CONAB. (2026). Café: Análise de Mercado - Junho de 2026.
6. MAPA (2003). Instrução Normativa nº 8, de 11 de junho de 2003: Regulamento Técnico de Identidade e de Qualidade para a Classificação do Café Beneficiado Grão Cru. Diário Oficial da União, 13 June 2003.
7. Incaper. Tamanho dos grãos de cultivares de café arábica, após esqueletamento [Bean size of arabica coffee cultivars after skeleton pruning]. Biblioteca Incaper.
8. Claduta Corp (2026). Brazilian Arabica Coffee Grades: Complete Buyer's Guide.
9. Evaluation of the sensory and color quality of coffee beans stored in hermetic packaging (2012). Journal of Stored Products Research.
10. Maintenance of the Quality of Coffee (Coffea arabica L.) in Different Packaging and Storage Locations (2025). pmc.ncbi.nlm.nih.gov/articles/PMC12658285
11. Royal Coffee. Green Coffee Analytics Part III – Visual Defects. royalcoffee.com



ABOUT
STIMBLUE+

StimBlue+ is a biostimulant made from 100% cultivated Giant Kelp (Macrocystis Pyrifera), has shown to be a great solution for coffee cultivation. The trial data suggests that it offers measurable, significant economic benefits, with greater yield and higher-quality beans.

We plant kelp forests around the globe to boost the health and biodiversity of the oceans while locking away CO2, and producing products to offer sustainable alternatives to help transition agriculture to more sustainable practices.



FIND MORE INFORMATION

https://www.kelp.blue/us/field-trial/coffee


GROW
MORE
kelp blue
STIM
BLUE