

THE BLACK STUFF

Natural Organic Humate | Trial Report

EAST PALMERSTON TR1 PLANTAIN TRIAL

Panama TR1 Disease Resistance | East Palmerston, Queensland 2021–2025

January 2021 – Ongoing (2025 Update) | TBS-TR-QLD-TR1-2021

1. TRIAL OVERVIEW

Trial Reference	TBS-TR-QLD-TR1-2021
Location	East Palmerston, Far North Queensland, Australia
Grower	Matt Dunne
Crops	Pacific Plantain (Musa spp.) and Ducasse Banana
Disease Pressure	Panama TR1 (Race 1) — Fusarium oxysporum f.sp. cubense — confirmed "dirty" soil
Soil Type	Red volcanic basalt soil
Annual Rainfall	Approx. 3,300 mm (tropical wet season climate)
Application Date	January 2021
TBS Volume Applied	Approximately 2 m ³ applied to 2 rows × ~150 plants by belt spreader
Approx. Rate	~3 m ³ /ha equivalent (applying to rows, not inter-row)
Control	Syngenta TR pathogen product — applied per label recommendation
Trial Status	Ongoing — 2025 update included

2. BACKGROUND & CONTEXT

The East Palmerston trial is the first Australian field trial evaluating TBS performance against Panama TR1 disease in a commercial plantation setting. The trial is significant for several reasons:

- (a) The trial site soil had been independently verified as TR1 "dirty" — meaning TR1 pathogen was confirmed present at commercially destructive levels.
- (b) A concurrent control using a proprietary Syngenta TR pathogen suppression product was maintained on the same property under identical growing conditions, providing a direct commercial benchmark for comparison.
- (c) The trial has been maintained continuously since January 2021 and has now accumulated over four years of field observation data — a longitudinal timeframe rarely achieved in commercial farm trials.
- (d) The 2025 observation confirms that TBS-treated rows remain TR1-free after four years, with no further TBS application since 2021.

3. TRIAL ESTABLISHMENT — JANUARY 2021

TBS was applied in January 2021 using a belt spreader. Approximately 2 m³ of dry TBS was applied across two rows containing approximately 150 plants per row. Application was concentrated in the plant rows; inter-row areas did not receive TBS application. The Syngenta control treatment was applied to adjacent rows according to the manufacturer's recommended protocol.

APRIL 2024 — CRITICAL MILESTONE: Control rows (Syngenta TR product) showing 10% TR1 infection with full infection of balance expected within 6 months. TBS rows remain completely TR1-free at 39 months post-application.

4.4 JUNE 2024 — 42 MONTHS POST-APPLICATION

June 2024 photographic inspection documents continued commercial production on TBS-treated rows across both varieties — Ducasse at the gate and Pacific Plantain rows.



June 2024 — Ducasse at Gate: healthy plants, commercial bunches, no TR1



June 2024 — Ducasse bunch development at 42 months post-TBS application

4.5 NOVEMBER 2024 — 46 MONTHS POST-APPLICATION

Critical milestone: Grower removed all control rows in November 2024 after 100% TR1 infection rendered them commercially non-viable. The Syngenta TR control had completely failed. TBS rows remained in full commercial production with no TR1 symptoms, now approaching four years post-application.

NOVEMBER 2024: Control rows (Syngenta TR product) removed by grower — 100% TR1 affected and commercially dead. TBS rows flourishing with no TR1. Four years post a single TBS application.

4.6 2025 UPDATE — 48+ MONTHS POST-APPLICATION

As of early 2025, TBS-treated rows at East Palmerston remain unaffected by TR1, with no further TBS application since January 2021. The grower has confirmed sustained commercial productivity across all treated rows.

Note: The trial design concentrated TBS application in plant rows only. Inter-row areas did not receive TBS. The supervising agronomist has noted that this may allow some inter-row TR1 pathogen survival and potential re-introduction via soil movement. A full-coverage application (including inter-row) is recommended for maximum long-term suppression.

5. SUMMARY TIMELINE

Date	Months Post-Application	TBS Rows	Control Rows (Syngenta)	Key Event
Jan 2021	0	TBS applied	Syngenta applied	Trial established
Nov 2022	22	Healthy — no TR1	Healthy — no TR1	First inspection: both treatments comparable
Jul 2023	30	Full bunches — no TR1	Not documented	TBS: commercial production at 2.5 years
Apr 2024	39	Full bunches — no TR1	10% TR1, 90% expected within 6 months	Divergence confirmed: TBS holding, control failing
Nov 2024	46	Flourishing — no TR1	100% TR1 — ALL REMOVED	Control eliminated; TBS rows only survivor
2025	48+	TR1-free, productive	Removed — commercially dead	TBS 4-year persistency confirmed

OVERALL RESULT: TBS achieved 4+ years of continuous TR1 suppression on confirmed "dirty" soil from a single January 2021 application, while the commercially available Syngenta TR control product failed completely by 46 months.

6. GROWER STATEMENT — MATT DUNNE, EAST PALMERSTON

"The TBS rows have been clean since day one. I've watched the control rows get worse and worse — we pulled them all out in November 2024. The TBS rows are still going strong. Four years from one application. I've never seen anything like it."

— Matt Dunne, East Palmerston, Queensland, 2025

7. CONCLUSIONS

The East Palmerston trial is the most significant long-term TBS field trial dataset available and delivers several conclusions of exceptional commercial and scientific importance:

- (a) A single application of TBS (approximately 2 m³ applied to plantation rows, approx. 3 m³/ha) achieved complete TR1 suppression on confirmed "dirty" soil for over four years.
- (b) TBS outperformed the commercially available Syngenta TR control product, which failed completely at 46 months with 100% infection.
- (c) No further TBS was required during the four-year observation period, demonstrating the persistency of TBS in tropical volcanic soil under high-rainfall conditions.
- (d) Commercial production (full bunches) was maintained across both Ducasse and Pacific Plantain varieties throughout the trial.
- (e) Inter-row application is recommended as an enhancement to the current protocol to eliminate potential re-introduction vectors.

8. CONTACT & FURTHER INFORMATION

Company	The Black Stuff Pty Ltd
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Product	TBS Natural Organic Humate — Dry Granular, available in 1m ³ bags
Related	2024 Plantain Trial Report & 2025 Update on file; Alex Report on TR1 (Matt Dunne) available on request