THE BLACK STUFF

Natural Organic Humate | Trial Report

DRY SEASON RICE TRIAL

Lao PDR | 2020

January – April 2020 | TBS-TR-LAO-DSR-2020

1. TRIAL OVERVIEW

Trial Reference	TBS-TR-LAO-DSR-2020
Location	Tha Ngon, Xaithany District, Vientiane Province, Lao PDR
GPS	18°08'31.4"N 102°39'16.1"E (18.142048, 102.654476)
Grower	Mr Sang and family; Mrs Keo Keomoungkhoune (site)
Crop	CR203 Sticky Rice (Glutinous Oryza sativa)
Soil Type	Sandy loam
Soil pH	4.4 (highly acidic)
Planting Date	January 2020 (inspected 24 January 2020)
Harvest Date	25 April 2020
Climatic Conditions	Severe drought year — approximately 50% of normal rainfall
TBS Application	Three lots at 1, 2 and 3 tonnes per hectare equivalents; one application prior to planting
Fertiliser Control	Standard rate NPK applied to control plot (3 applications over the season); no fertiliser on TBS lots

2. BACKGROUND & OBJECTIVES

The 2020 dry season rice trial at Tha Ngon was conducted during an exceptionally challenging year characterised by severe drought, with recorded rainfall approximately 50% below normal seasonal averages. This climatic stress provided a rigorous test of TBS performance under water-limited conditions — a scenario directly relevant to the increasing frequency of drought events across South-East Asian rice-producing regions.

A critical design feature of this trial was the deliberate exclusion of synthetic fertiliser from the TBS-treated lots. The three TBS lots received TBS only, while the control plot received the standard NPK fertiliser rate. This design tested whether TBS alone — with no additional inputs — could outperform conventional fertiliser management under drought stress.

3. TRIAL DESIGN

Lot 1	1 T/ha TBS — No NPK fertiliser
Lot 2	2 T/ha TBS — No NPK fertiliser
Lot 3	3 T/ha TBS — No NPK fertiliser
Control	No TBS — Standard rate NPK fertiliser
Baseline Yield	1,400 kg/ha (prior season average for this site)
Planting Date	January 2020
Harvest Date	April 2020

4. METHODOLOGY

TBS was applied as a dry granular product immediately prior to transplanting, incorporated into the top 10 cm of soil by rotary hoe. The three TBS lots received no further soil amendments or fertilisers throughout the growing season. The control lot received standard NPK applications at recommended intervals — the same management practice as the grower had used in the prior season.

Yield was measured at harvest by weighing grain from each lot separately using calibrated scales. Grain quality was assessed by the grower and independent observers. Ecological observations (soil biology, plant vigour) were recorded at mid-season and at harvest.

5. RESULTS

5.1 YIELD COMPARISON

Treatment	Application	Fertiliser	Baseline (kg/ha)	Trial Yield (kg/ha)	Change (kg/ha)	% Change
Lot 1 (TBS)	1 T/ha	None	1,400	1,820	+420	+30%
Lot 2 (TBS)	2 T/ha	None	1,400	1,820	+420	+30%
Lot 3 (TBS)	3 T/ha	None	1,400	1,820	+420	+30%
Control	None	Standard NPK	1,400	1,120	−280	−20%

KEY RESULT: All three TBS lots yielded +30% above baseline despite receiving zero synthetic fertiliser and experiencing a 50% drought year. Farmer failed to differentiate yield from Lots 1, 2 or 3.

CONTROL OUTCOME: The control plot, receiving standard NPK, suffered a −20% yield decline relative to baseline under the same drought conditions.

5.2 ECOLOGICAL OBSERVATIONS

The grower and supervising agronomist recorded the following additional observations on TBS-treated lots:

(a) Marked increase in fish, frog and earthworm populations in and around TBS-treated paddies compared to control, indicating significant improvement in soil and water biology.

(b) Plants on TBS lots were visibly stronger, greener and more vigorous throughout the growing season, with earlier canopy closure and better stand establishment.

(c) No evidence of nutrient deficiency symptoms on any TBS-treated lot despite the complete absence of synthetic fertiliser.

(d) Grain quality on TBS lots assessed as outstanding — fully formed, uniform grain with excellent weight.

5.3 GRAIN QUALITY

TBS-treated grain was assessed as outstanding quality by both the grower and independent buyers at the Tha Ngon market. The grain exhibited superior weight, lustre and cooking characteristics compared to control and prior season harvest. No off-flavours or quality defects were noted.

6. CONCLUSIONS

The 2020 dry season rice trial demonstrates with particular force that TBS improves crop resilience and productivity under drought stress:

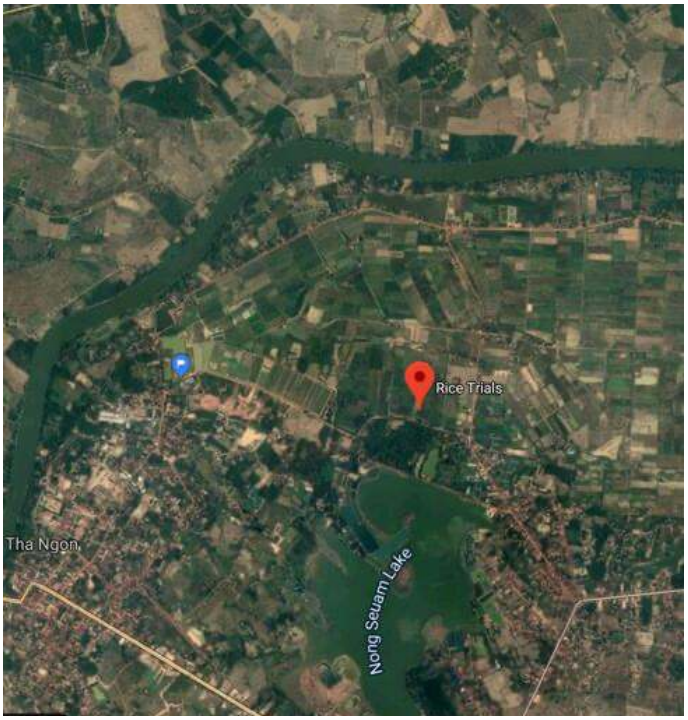
(a) TBS-only lots yielded +30% above the prior season baseline during a 50% drought year, without any synthetic fertiliser input.

(b) The control, receiving standard NPK, yielded −20% below baseline under the same drought conditions.

(c) The +50 percentage point differential between TBS (no fertiliser) and standard NPK management under drought represents a commercially significant and agronomically important outcome.

(d) Soil biological recovery (earthworms, amphibians, aquatic species) was clearly observable in TBS-treated areas, consistent with TBS mode of action as a biological soil conditioner rather than a soluble nutrient input.

7. SITE LOCATION MAP



Trial site — Tha Ngon, Xaithany District, Vientiane Province. GPS: 18.142048, 102.654476. "Rice Trials" pin marks the TBS trial plots adjacent to Nong Seuam Lake.

8. PHOTO GALLERY

All photographs were taken by the supervising agronomist during the January 2020 planting and inspection visit, and at harvest on 25 April 2020.

Trial site overview — TBS-treated rice paddy showing vigorous green stand, Tha Ngon, 2020

Planting day — family operated farm, transplanting CR203 sticky rice by hand

Transplanting by hand — paddy establishment, January 2020

Paddies 3 days after transplanting — uniform establishment across TBS-treated lots

Harvest — TBS-treated CR203 sticky rice at peak grain fill, April 2020. Dense, healthy grain heads confirm outstanding quality.

9. CONTACT & FURTHER INFORMATION

Company	The Black Stuff Pty Ltd
Website	theblackstuff.com.au
Email	info@theblackstuff.com.au
Product	TBS Natural Organic Humate — Dry Granular Product
Availability	Available ex-factory in 1m³ bulk bags. Minimum order 1m³.