

Foliar & Bio-input Trial — Robusta Seedling Establishment

■ Trial Objectives

A. Compare vegetative growth and yield across foliar fertilizer options versus the standard nutrient recommendation (DAP) for new seedlings.

■ Plantation Details

Altitude	1,450 m asl
Variety	KR line mix clonal Robusta
Planting date	October 2025
Spacing	3 × 3 m
Planting hole	1.5 × 1.5 ft depth
Basal manure	Half basin in hole
Intercrop	Matoke 6 × 6 m
Shade	Albizia cor. 12 × 6 m
Ground cover	Jackbeans 2 × 2 ft



Lab Serum — treatment

■ Trial Design

12 rows

Total rows in trial

3 inputs tested

DAP · Foliar · Lab serum

8 combinations

4 combos run once, 4 repeated in 2 rows

≈ 10–12 trees/row

Approximate, per row

■ Treatments & Application Rates

Input	Form	Dose	Application	Notes
DAP (granules)	<i>Synthetic (standard)</i>	40 g / seedling	3 applications, every 3 weeks (25 Feb · 18 Mar · 8 Apr 2026)	Standard nutrient recommendation baseline; total 120 g/seedling
TM Rapid Fast (Commercial foliar)	<i>Liquid (N-P-K 20-15-15 + micros)</i>	80 ml / 20 L water	Weekly, early morning, spray on plant (7 rounds, 2 Mar–13 Apr 2026)	Twaha M Chemical Industries (U) Ltd; incl. Fe/Zn/Cu EDTA micronutrients
Lab Serum (rice-water ferment)	<i>Homemade bio-input</i>	1–5 ml / L water	Single application, spray on soil around seedling (20 Mar 2026)	14-day fermented Lactobacillus serum — see preparation below
Blanco (Control)	<i>None</i>	—	No input applied	No fertilizer or spray; baseline comparison

■ Input Photos



DAP granules — application



TM Rapid Fast — foliar



Lab Serum — stock

■ What We Measure (Dependent Variables)

■ Plant height

cm from ground to tip — every round

■ Number of nodes

Count of stem nodes — indicator of growth rate

■ Vigour score

Visual 1–5 scale (leaves, branching, colour)

■ Yield per tree

kg fresh cherry/tree — from Year 3 onwards

■ Row Layout Map (Rows 1–12)

Row	DAP	Foliar	Lab Serum	Combination	Notes
1	✓	✓	✓	ALL (DAP+Foliar+Lab)	Full combination
2	✓	—	✓	DAP + Lab serum	
3	—	✓	✓	Foliar + Lab serum	
4	—	—	✓	Lab serum only	
5	✓	✓	✓	ALL (DAP+Foliar+Lab)	Full combination
6	✓	—	✓	DAP + Lab serum	
7	—	✓	—	Foliar only	
8	—	—	—	Blanco (Control)	No input applied
9	✓	✓	—	DAP + Foliar	
10	✓	—	—	DAP only	Standard recommendation
11	—	✓	—	Foliar only	
12	—	—	—	Blanco (Control)	No input applied

■ Lab Serum Preparation (14-day fermentation)

Method provided by Rock & Soils

DAY 1

- Wash rice; collect the cloudy white water
- Transfer to an open-cut bottle, exposed to air
- Cover with mosquito net, secure with rope
- Ferment 1 week — watch for 2-phase separation

DAY 7

- Transfer clear liquid to a 2nd bottle
- Add 0.5 L milk; seal tightly
- Ferment 1 more week (2-phase again)
- Clear part = Lactobacillus serum

DAY 14

- Serum ready to bottle and use
- Dissolve 1–5 ml serum in 1 L water
- Apply to substrate / soil around seedling

■ Farm Worker Instructions — Step by Step

1

Check your row number

Confirm which row you are working in against this map before opening any product.

2

Prepare only the inputs listed for that row

DAP granules, TM Rapid Fast foliar spray, and/or Lab Serum — only what the row combination calls for. Never apply an input to a row that isn't listed.

3

Apply DAP correctly

Place 40 g of DAP granules evenly around the base inside the planting pit and cover with soil. Do NOT let granules touch the stem.

4

Apply commercial foliar correctly

Mix 80 ml TM Rapid Fast in 20 L water. Spray early morning, directly on the plant foliage, weekly.

5

Apply Lab Serum correctly

Dissolve 1–5 ml of prepared serum in 1 L water. Spray once on the soil around the base of the seedling — not on the leaves.

6

Blanco rows — apply nothing

Rows 8 and 12 are controls. Do NOT apply DAP, foliar spray, or lab serum.

7

Report problems immediately

Dead seedlings, wrong product on a row, or spilled input — tell the supervisor at once.