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Lampiran

Gambar Lampiran 1. Keranjang (*in-growth*) yang ditempatkan di antara kakao (a) dan langsung (b) pada sistem agroforestri sederhana.



Gambar Lampiran 2. Mini profil pengamatan akar kakao dan langsung diameter 30 cm dan tinggi 40 cm dengan menggunakan bor tanah spesifik yang dibuat.



Gambar Lampiran 3. Pemasangan keranjang *in-growth* pada lubang hasil pemboran di plot pengamatan: a) dan b) belum terisi; c) sedang diisi dengan tanah yang sudah dibuat *rootless* dan sudah dipupuk; d) keranjang *in-growth* yang sudah terisi tanah yang telah dipupuk dan *rootless*.



Gambar Lampiran 4. Pengambilan sampel daun setelah perlakuan pada kakao dan langsung untuk analisis kadar fosfor jaringan. Daun yang diambil adalah daun yang aktif (bukan daun muda atau tua) dan terletak di bagian tengah dari suatu cabang.



Gambar Lampiran 5. Pengambilan sampel tanah terganggu kakao-langsak pada sistem agroforestri sederhana.



Tabel Lampiran 6. pH tanah (kedalaman 0–20 cm) pada sistem agroforestri sederhana kakao-langsak.

Perlakuan	Ulangan		
	1	2	3
Tanpa pupuk (kontrol)	5.68	6.01	6.54
500 g Phonska Plus	6.16	6.59	6.49
500 g Phonska Plus + 190 g Urea	6.43	5.62	6.30

Tabel Lampiran 7. pH tanah (kedalaman 20–40 cm) pada sistem agroforestri sederhana kakao-langsak.

Perlakuan	Ulangan		
	1	2	3
Tanpa pupuk (kontrol)	5.75	5.76	5.63
500 g Phonska Plus	6.50	6.42	5.87
500 g Phonska Plus + 190 g Urea	6.18	6.24	5.86

Tabel Lampiran 8. Rata-rata panjang akar (*root length* - R), massa akar kering (m), kerapatan panjang akar (*root length density* - RLD) dan panjang akar spesifik (*specific root length* - SRL) kakao pada sistem agroforestri sederhana. Sumber: (Asmi, 2021).

Perlakuan	Kakao				
	R	m	V	RLD	SRL
	cm	g	cm ³	cm cm ⁻³	cm g ⁻¹
Tanpa pupuk (kontrol)	1102.6299	0.5042	14130	0.0780	20.1559
500 g Phonska	707.7366	0.3660	14130	0.0501	18.8054
500 g Phonska + 190 g Urea	526.8004	0.3431	14130	0.0373	15.6717

Tabel Lampiran 9. Rata-rata panjang akar (*root length* - R), massa akar kering (m), kerapatan panjang akar (*root length density* - RLD) dan panjang akar spesifik (*specific root length* - SRL) langsung pada sistem agroforestri sederhana. Sumber: (Asmi, 2021).

Perlakuan	Langsat				
	R	m	V	RLD	SRL
	cm	g	cm ³	cm cm ⁻³	cm g ⁻¹
Tanpa pupuk (kontrol)	63.9523	0.2000	14130	0.0045	6.6483
500 g Phonska	15.6100	0.0233	14130	0.0011	8.1089
500 g Phonska + 190 g Urea	55.2791	0.1567	14130	0.0039	3.9081

Tabel Lampiran 10. Kriteria penilaian hasil analisis tanah. Sumber: (BPT, 2009).

Karakteristik tanah	Nilai				
	Sangat rendah	Rendah	Sedang	Tinggi	Sangat tinggi
C (%)	<1	1–2	2–3	3–5	>5
N (%)	<0.1	0.1–0.2	0.21–0.50	0.51–0.75	>0.75
C/N	<5	5–10	11–15	16–25	>25
P ₂ O ₅ HCl 25% (mg 100 g ⁻¹)	<15	15–20	21–40	41–60	>60
P ₂ O ₅ Bray (mg kg ⁻¹ P)	<4	5–7	8–10	11–15	>15
P ₂ O ₅ Olsen (mg kg ⁻¹ P)	<5	5–10	11–15	16–20	>20
K ₂ O HCl 25% (mg 100 g ⁻¹)	<10	10–20	21–40	41–60	>60
KTK (me 100 g tanah ⁻¹)	<5	5–16	17–24	25–40	>40
Susunan kation					
- Ca (me 100 g tanah ⁻¹)	<2	2–5	6–10	11–20	>20
- Mg (me 100 g tanah ⁻¹)	<0.3	0.4–1	1.1–2.0	2.1–8.0	>8
- K (me 100 g tanah ⁻¹)	<0.1	0.1–0.3	0.4–0.5	0.6–1.0	>1
- Na (me 100 g tanah ⁻¹)	<0.1	0.1–0.3	0.4–0.7	0.8–1.0	>1
Kejenuhan basa (%)	<20	20–40	41–60	61–80	>80

Karakteristik tanah	Nilai					
	Sangat masam	Masam	Agak masam	Netral	Agak alkalis	Alkalis
pH H ₂ O	<4.5	4.5–5.5	5.5–6.5	6.6–7.5	7.6–8.5	>8.5