

Supplementary material

Table S1. List of plants found at sampling site 1, located in the plain close to Wari Maro, Benin.

Family	Genus/Species
Acanthaceae	<i>Lepidagathis alopecuroides</i>
Anacardiaceae	<i>Lannea kerstingii</i>
Anacardiaceae	<i>Lannea macroptera</i>
Annonaceae	<i>Annona senegalensis</i>
Anthericaceae	<i>Chlorophytum</i> sp.
Apocynaceae	<i>Ceropegia ledermannii</i>
Apocynaceae	<i>Ceropegia racemosa</i> subsp. <i>racemosa</i>
Apocynaceae	<i>Ectadiopsis oblongifolia</i>
Apocynaceae	<i>Sphaerocodon caffrum</i>
Araceae	<i>Amorphophallus abyssinicus</i>
Araceae	<i>Stylochaeton</i> sp.
Araliaceae	<i>Cussonia arborea</i>
Asparagaceae	<i>Drimia</i> sp.
Asteraceae	cf. <i>Bidens</i> sp.
Asteraceae	<i>Chromolaena odorata</i>
Asteraceae	<i>Tridax procumbens</i>
Asteraceae	cf. <i>Vernonia</i> sp.
Combretaceae	<i>Anogeissus leiocarpa</i>
Combretaceae	<i>Combretum collinum</i>
Combretaceae	<i>Combretum molle</i>
Combretaceae	<i>Pteleopsis suberosa</i>
Combretaceae	<i>Terminalia mollis</i>
Combretaceae	<i>Terminalia</i> sp.
Commelinaceae	<i>Commelina erecta</i>
Commelinaceae	<i>Cyanotis longifolia</i>
Cyperaceae	<i>Cyperus</i> cf. <i>cyperoides</i>
Cyperaceae	indet.
Dioscoreaceae	<i>Dioscorea</i> sp. 1
Dioscoreaceae	<i>Dioscorea</i> sp. 2
Dioscoreaceae	<i>Dioscorea</i> sp. 3
Dioscoreaceae	<i>Dioscorea</i> sp. 4
Dioscoreaceae	<i>Dioscorea</i> sp. 5
Dioscoreaceae	<i>Dioscorea abyssinica</i>
Euphorbiaceae	<i>Bridelia</i> sp.
Euphorbiaceae	<i>Euphorbia hirta</i>
Fabaceae	indet. 1
Fabaceae	indet. 2
Fabaceae (Caesalpinioideae)	cf. <i>Burkea africana</i>
Fabaceae (Caesalpinioideae)	<i>Chamaecrista</i> sp.
Fabaceae (Caesalpinioideae)	<i>Entada africana</i>
Fabaceae (Caesalpinioideae)	<i>Senna</i> sp.
Fabaceae (Cercidoideae)	<i>Piliostigma</i> sp.
Fabaceae (Cercidoideae)	<i>Piliostigma thoningii</i>
Fabaceae (Detarioideae)	<i>Daniellia oliveri</i>

Fabaceae (Detarioideae)	<i>Detarium microcarpum</i>
Fabaceae (Detarioideae)	<i>Isoberlinia doka</i>
Fabaceae (Faboideae)	indet. 3
Fabaceae (Papilionoideae)	<i>Indigofera</i> sp.
Fabaceae (Papilionoideae)	<i>Lonchocarpus sericeus</i>
Fabaceae (Papilionoideae)	<i>Nesphostylis holosericea</i>
Fabaceae (Papilionoideae)	<i>Pterocarpus erinaceus</i>
Lamiaceae	<i>Hyptis</i> sp.
Lamiaceae	<i>Rothea</i> sp.
Lamiaceae	cf. <i>Platystoma africanum</i>
Lamiaceae/Verbenaceae	indet.
Loganiaceae	<i>Strychnos spinosa</i>
Malvaceae	<i>Abutilon ramosum</i>
Malvaceae	<i>Bombax costatum</i>
Malvaceae	<i>Grewia</i> sp.
Malvaceae	indet.
Malvaceae	<i>Sida rhombifolia</i>
Malvaceae	<i>Waltheria</i> sp.
Moraceae	<i>Dorstenia cuspidata</i>
Moraceae	<i>Ficus</i> cf. <i>glumosa</i>
Opiliaceae	<i>Opilia celtidifolia</i>
Orchidaceae	indet.
Orchidaceae	<i>Calypstrochilum</i> sp.
Orchidaceae	<i>Nervilia kotschy</i>
Oxalidaceae	<i>Biophytum petersianum</i>
Phyllanthaceae	<i>Flueggea virosa</i>
Phyllanthaceae	<i>Phyllanthus</i> sp.
Poaceae	<i>Andropogon</i> sp.
Poaceae	cf. <i>Paspalum</i> sp.
Poaceae	cf. <i>Setaria</i> sp.
Poaceae	<i>Oplismenus</i> sp.
Poaceae	cf. <i>Panicum pilosum</i>
Rubiaceae	<i>Sericanthe chevalieri</i>
Rubiaceae	cf. <i>Spermacoce</i> sp.
Rubiaceae	<i>Pavetta crassipes</i>
Sapotaceae	<i>Vitellaria paradoxa</i>
Taccaceae	<i>Tacca leonpetaloides</i>
Verbenaceae	<i>Lantana rhodesiensis</i>
Verbenaceae	<i>Gmelina arborea</i>
Vitaceae	<i>Cayratia</i> sp.
Vitaceae	<i>Cayratia ibuensis</i>
Vitaceae	<i>Cissus</i> sp.
Vitaceae	<i>Cissus populnea</i>
Vitaceae	<i>Cyphostemma sokodensis</i>
Zamiaceae	<i>Encephalartos barteri</i> subsp. <i>barteri</i>
Zingiberaceae	<i>Siphonochilus aethiopicus</i>

Table S2. List of plants found at sampling site 2, located on top of the inselberg Soubakpérou close to Wari Maro, Benin.

Family	Genus/Species
Amaryllidaceae	<i>Scadoxus multiflorus</i>
Araceae	<i>Amorphophallus dracontoides</i>
Araceae	<i>Anchomanes</i> cf. <i>difformis</i>
Araceae	<i>Stylochaeton</i> sp.
Capparaceae	<i>Cleome rutidosperma</i>
Capparaceae	<i>Crateva adansonii</i>
Commelinaceae	<i>Commelina erecta</i>
Cyperaceae	<i>Cyperus</i> cf. <i>soyauxii</i>
Ebenaceae	<i>Diospyros</i> sp.
Lamiaceae	<i>Solenostemon</i> sp.
Malvaceae	cf. <i>Abutilon ramosum</i>
Malvaceae	<i>Adansonia digitata</i>
Malvaceae	<i>Bombax costatum</i>
Moraceae	<i>Ficus abutilifolia</i>
Orchidaceae	<i>Nervilia bicarinata</i>
Poaceae	<i>Oplismenus</i> sp.
Poaceae	indet. 1
Poaceae	indet. 2
Sapotaceae	<i>Manilkara multinervis</i>
cf. Urticaceae	indet.
Urticaceae	<i>Pouzolzia guineensis</i>
Vitaceae	<i>Cissus populnea</i>

Table S3. Soil characteristics of the two Geric Ferralsols in Benin, investigated in this study. Samples denoted by site / horizon and layer. Amounts of iron, manganese and aluminium: oxalate soluble, dithionite soluble and the activity (ratio between oxalate and dithionite soluble).

sample		iron			manganese			aluminium		
		ox	dith.	activity	ox	dith.	activity	ox	dith.	activity
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
site 1	1/I1	0.03	0.36	8	0.03	0.03	98	0.03	0.08	33
	1/I2	0.02	0.30	7	0.02	0.02	98	0.02	0.08	21
site 2	2/I1	0.10	0.80	11	0.08	0.08	100	0.06	0.17	36
	2/II1	0.10	1.29	8	0.06	0.06	89	0.07	0.05	28
	2/II2	0.10	1.20	9	0.06	0.07	98	0.07	0.23	30

Table S4. Yields and quality of fungal read pairs obtained by environmental sequencing of the ITS2 region from two Geric Ferralsols from Benin. Number of read pairs, total number of bases, proportion of bases that reach a quality of at least 30 (i. e. 99,9 % probability for a correct base call), average base quality for all samples and number of MOTUs found in each replicate gained from the two sites, their defined depth and horizon. The negative control was provided by the company that conducted the sequencing.

Replicate name		Number of read pairs	Yield (Kbp)	% bases Q ≤ Q30	Mean Q	Number of MOTUs
site 1	1/I1/a	131,672	73,736	77	31	1,307
	1/I1/b	193,802	108,529	77	31	1,415
	1/I1/c	131,775	73,794	76	31	1,257
	1/I2/a	180,019	100,810	75	31	1,011
	1/I2/b	76,125	42,630	76	31	1,127
	1/I2/c	157,246	88,057	74	30	1,349
site 2	2/I1/a	110,176	61,698	75	31	1,235
	2/I1/b	141,824	79,421	74	31	1,327
	2/I1/c	137,124	76,789	75	31	1,231
	2/I1/d	152,465	85,380	75	31	1,327
	2/II1/a	102,721	57,523	74	30	858
	2/II1/b	105,784	59,239	74	30	415
	2/II1/c	172,021	96,331	73	30	850
	2/II2/a	194,870	109,127	74	30	796
	2/II2/b	111,407	62,387	74	30	752
	2/II2/c	147,696	82,709	74	30	812
Total		2,250,129	1,260,065	75	31	4,299
Negative control		3,402	1,905	76	31	not determined