Supplementary Materials

Changes in Soil-Borne Communities of Arbuscular Mycorrhizal Fungi during Natural Regrowth of Abandoned Cattle Pastures Are Indicative of Ecosystem Restoration

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Supplementary Figures

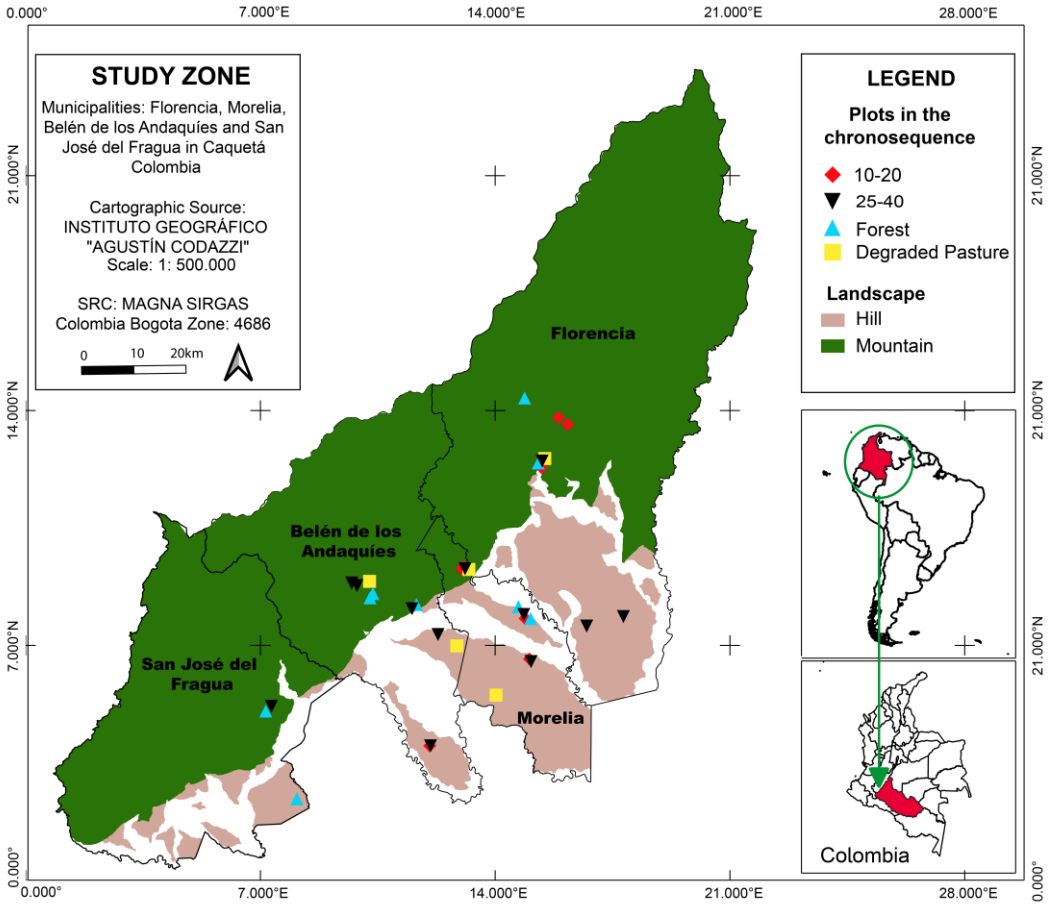

Figure S1. Map of the study area (Caquetá state, Northwestern Colombian Amazon).

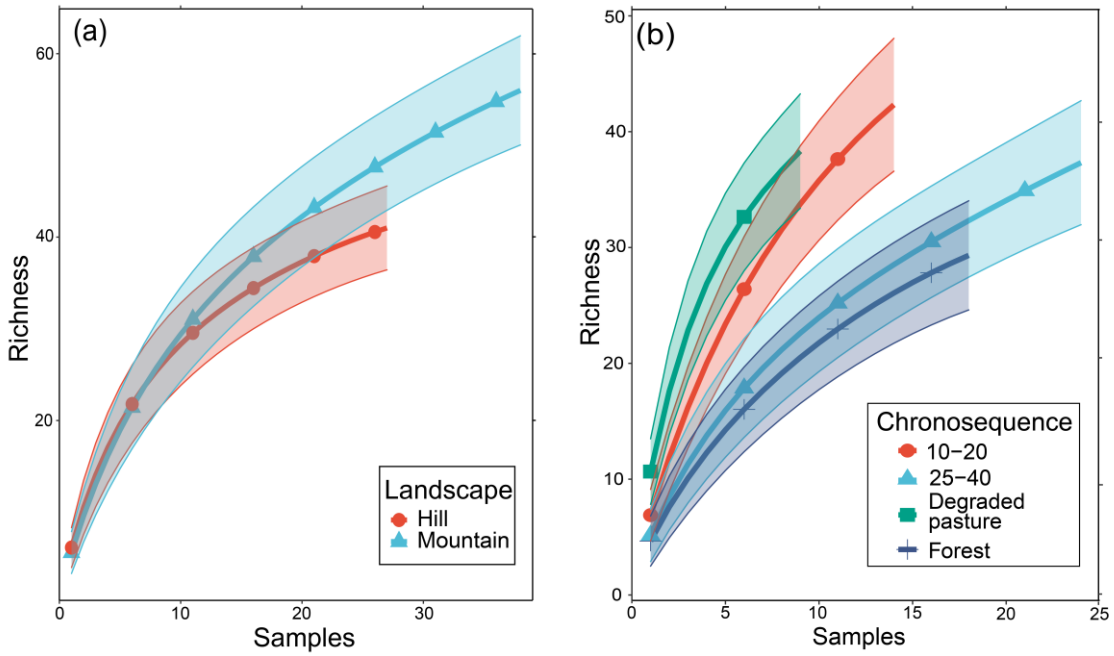

Figure S2. Accumulation curves (Mau-Tau method with a 95% confidence interval) of arbuscular mycorrhizal fungal species in soils of different landscapes (**a**), and different successional stages of a degraded pasture natural regrowth (**b**)

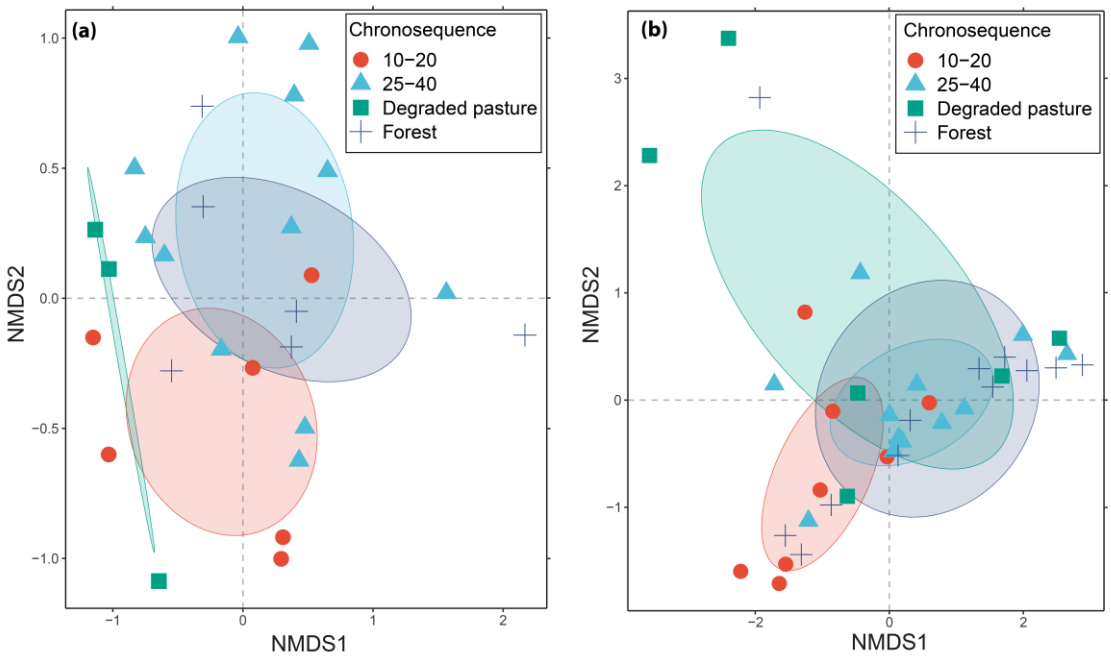

Figure S3. Non-metric multidimensional scaling (NMDS) plots displaying the composition of arbuscular mycorrhizal fungal communities in the hill landscape (**a**) and the mountain landscape (**b**) over successional stages of a degraded pasture natural regrowth

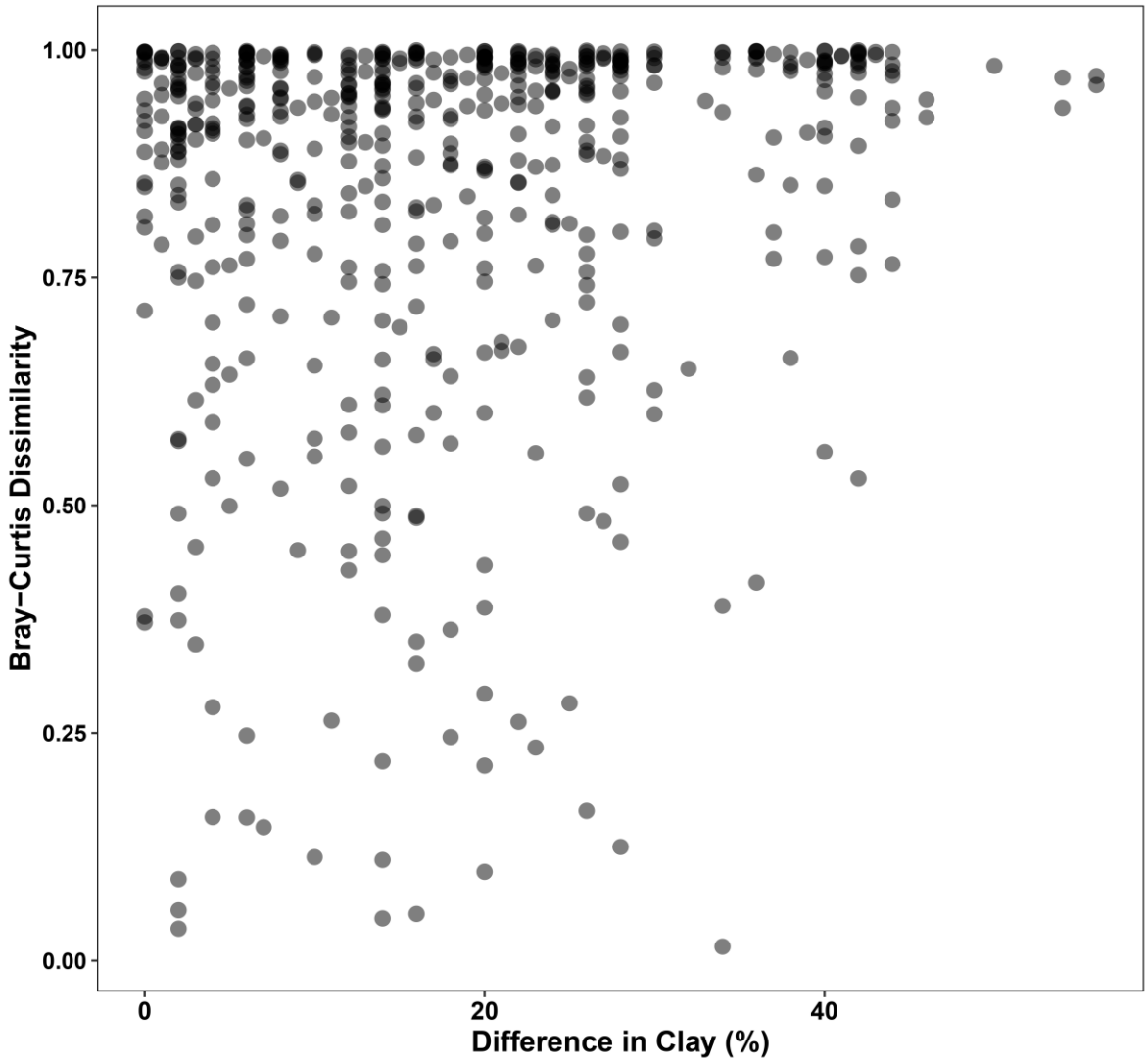

Figure S4. Mantel correlation scatter-plot between the dissimilarity of arbuscular mycorrhizal fungal VT species abundance (Bray-Curtis distance) and dissimilarity of the percentage of clay (Euclidean distance)

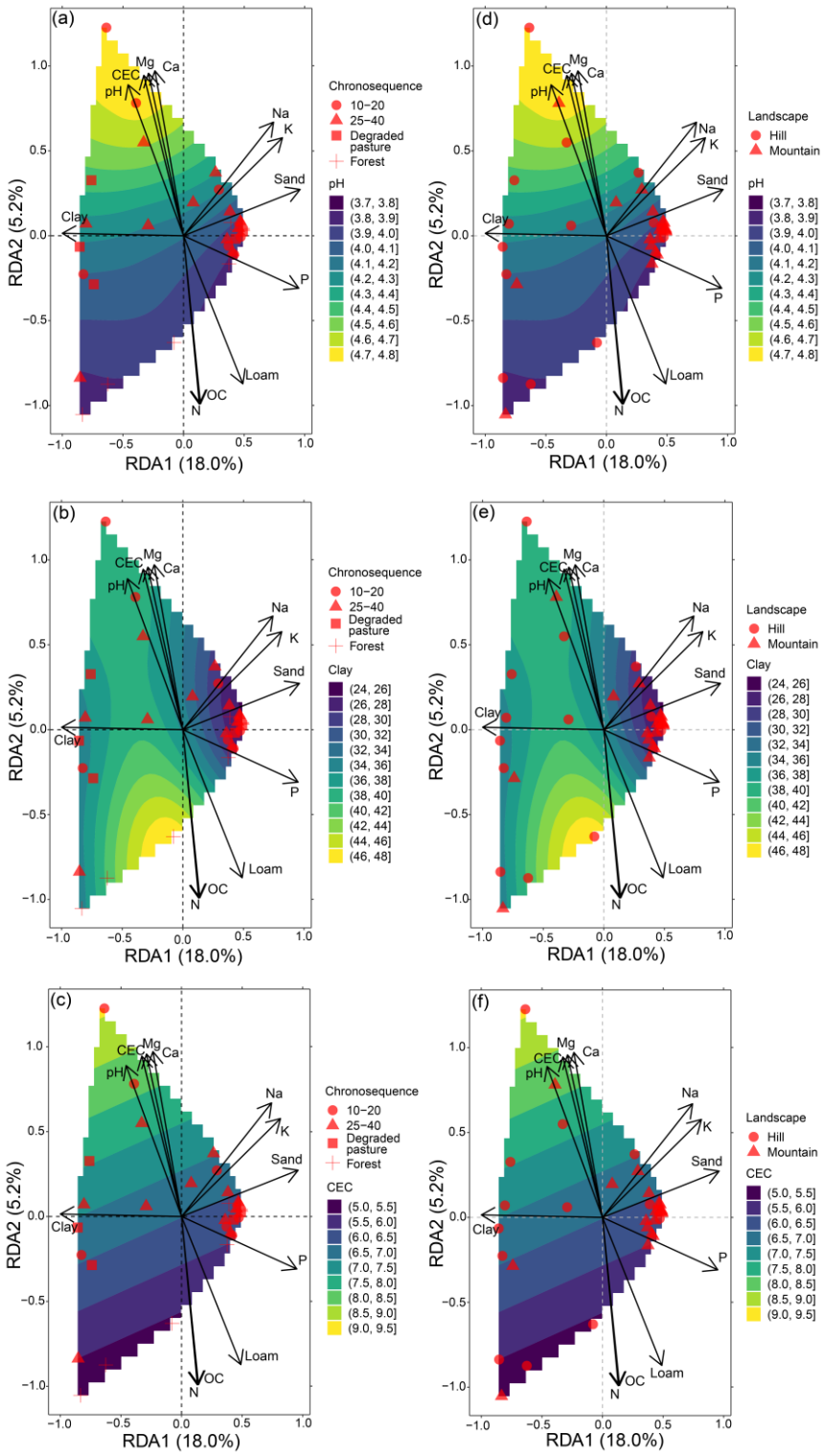

Figure S5. Redundancy analysis (RDA) of arbuscular mycorrhizal fungal species according to a soil (pH, clay and CEC) gradient in the different successional stages of a degraded pasture natural regrowth (**a**, **b** and **c**), and landscapes (**d**, **e** and **f**)

Supplementary Tables

Table S1. Soil samples collected and analyzed to study arbuscular mycorrhizal fungal communities.

Municipality	Location	N	W	Landscape	Chronosequence	Plot	No. soil samples collected	No. AMF samples analized
Morelia	Caldas	1°30'31.41"	75°44'9.57"	Mountain	Degraded pasture	DM11	3	2
Belén de los Andaquíes	Aletones	1°29'32.57"	75°52'20.63"	Mountain	Degraded pasture	DM15	3	2
Florencia	Bajo caldas	1°39'39.45"	75°37'54.36"	Mountain	Degraded pasture	DM6	3	2
Morelia	Caldas	1°30'36.47"	75°44'35.56"	Mountain	10-20	DM10	3	2
Florencia	Bajo caldas	1°38'53.46	75°38'9.79"	Mountain	10-20	DM16	3	2
Florencia	Palmichal	1°42´27,6"	75°35´59,8"	Mountain	10-20	DM2	3	2
Florencia	Palmichal	1°43'01.70"	75°36'45.40"	Mountain	10-20	DM1	3	2

Morelia	Caldas	1°30'37.05''	75°44'27.01''	Mountain	25-40	DM12	3	2
San José del Fragua	Bellavista	1°19'16.21''	76°00'21.30''	Mountain	25-40	DM13	3	2
Belén de los Andaquíes	El chocho	1°27'20.25''	75°48'43.93''	Mountain	25-40	DM14	3	2
Belén de los Andaquíes	S. Antonio de Padua	1°29´24,66''	75°53´23,74''	Mountain	25-40	DM17	3	2
Florencia	Bajo caldas	1°39' 23.7''	75° 38' 06.0''	Mountain	25-40	DM7	3	2
Belén de los Andaquíes	S. Antonio de Padua	1°29'26.91''	75°53'40.34''	Mountain	25-40	DM8	3	2
Belén de los Andaquíes	El porvenir	1°28' 22.9''	75°52' 06.7''	Mountain	Forest	RM11	3	2
San José del Fragua	Bellavista	1°18' 52.2''	76°00' 53.6''	Mountain	Forest	RM13	3	2
Belén de los Andaquíes	Chocho alto	1°27' 38.2''	75°48' 28.4''	Mountain	Forest	RM14	3	2
Florencia	Bajo caldas	1°39' 17.9''	75° 38' 26.6''	Mountain	Forest	RM3	3	2
Florencia	Caraño	1°44´38,4''	75°39´34,2''	Mountain	Forest	RM8	3	2
Belén de los Andaquíes	El porvenir	1°28' 32.7''	75° 52' 03.8''	Mountain	Forest	RM9	3	2
Morelia	Caldas	1°24'13.68''	75°45'9.24''	Hill	Degraded pasture	DL11	3	2
Morelia	Morelia	1°20'10.96''	75°41'55.32''	Hill	Degraded pasture	DL10	3	1

Morelia	San Marcos	1°23'9.3''	75°39'10.38''	Hill	10-20	DL12	3	2
Morelia	Lagunilla	1°26¨23,6"	75°39´20,4"	Hill	10-20	DL2	3	2
Belén de los Andaquíes	Puerto Torres	1°15'59.9''	75°47'23.4''	Hill	10-20	DL6	3	2
Morelia	San Marcos	1°23'24.2"	75°39'04.0"	Hill	25-40	DL13	3	2
Florencia	Balcanes	1° 26' 39.1"	75° 31' 29.1''	Hill	25-40	DL16	3	2
Morelia	Lagunilla	1°27'21.63''	75°39'48.10''	Hill	25-40	DL3	3	2
Belén de los Andaquíes	El chocho	1°25'26.6''	75°46'43.27''	Hill	25-40	DL5	3	2
Belén de los Andaquíes	Puerto Torres	1°16'8.3''	75°47'17.6''	Hill	25-40	DL7	3	2
Florencia	Tominejo	1°25' 54.1"	75°34' 24.57"	Hill	25-40	DL14	3	2
Morelia	Lagunilla	1°26'28.8''	75°39'10.3''	Hill	Forest	RL2	3	2
Morelia	Lagunilla	1°27' 27.9"	75°39' 58.9"	Hill	Forest	RL3	3	2
San José del Fragua	El Triunfo	1°11' 38.4"	75°58' 19.7"	Hill	Forest	RL4	3	2

Table S2. Arbuscular mycorrhizal fungal virtual taxon (VT) recovered from two landscapes and four successional stages in a natural regrowth chronosequence of abandoned pastures in the Andean-Amazonian transition. Abundance as the number of read VT accounts.

Taxonomy				**Landscape**		**Chronosequence**				
Family	**Genus**	**Species**	**VT**	**Hill**	**Mountain**	**Degraded pasture**	**10 - 20**	**25-40**	**Forest**	**Total reads**
Acaulosporaceae	*Acaulospora*	sp.	VT24	31	135	85	6	29	46	166
	Acaulospora	sp.	VT102	1	0	0	0	0	1	1
	Acaulospora	sp.	VT227	20	0	0	18	2	0	20
	Acaulospora	sp.	VT26	0	4	0	4	0	0	4
	Acaulospora	sp.	VT231	99	43	65	48	29	0	142
	Acaulospora	sp.	VT15	210	0	0	210	0	0	210
	Kuklospora	sp.	VT249	0	3	2	0	1	0	3
Ambisporaceae	*Ambispora*	*leptoticha*	VT242	24	0	24	0	0	0	24
Archaeosporaceae	*Archaeospora*	sp.	VT4	7	1778	1778	3	0	4	1785
	Archaeospora	sp.	MO-Ar10	35	1	34	0	1	1	36
Claroideoglomeraceae	*Claroideoglomus*		LH-Cl01	342	94	315	0	121	0	436
Gigasporaceae	*Gigaspora*	*decipiens*	VT39	571	87	630	8	4	16	658

	Scutellospora	*castanea*	VT41	0	29	1	0	0	28	29
	Scutellospora	sp.	VT318	0	4	4	0	0	0	4
Glomeraceae	*Glomus*	*coremioides*	VT368	28	1	0	3	25	1	29
	Glomus	sp.	VT222	0	11	0	11	0	0	11
	Glomus	sp.	VT135	0	10	0	10	0	0	10
	Glomus	sp.	VT209	0	4	0	4	0	0	4
	Glomus	sp.	VT191	0	2	0	2	0	0	2
	Glomus	sp.	VT87	16	12	2	3	17	6	28
	Glomus	sp.	VT269	152	99	129	39	9	74	251
	Glomus	sp.	VT280	5	8	3	3	3	4	13
	Glomus	sp.	VT126	622	1162	747	75	480	482	1784
	Glomus	sp.	VT223	8174	14	7409	770	8	1	8188
	Glomus	sp.	VT80	10	31	12	23	5	1	41
	Glomus	sp.	VT76	50	85	34	15	8	78	135
	Glomus	sp.	VT268	0	1	0	0	0	1	1
	Glomus	sp.	VT292	373	278	162	185	164	140	651

Glomus	sp.	VT312	34	29	16	43	2	2	63
Glomus	sp.	VTX89	1404	627	1298	352	109	272	2031
Glomus	sp.	LH-Gl07	0	2	0	0	0	2	2
Glomus	sp.	VT360	0	2	0	1	1	0	2
Glomus	sp.	LH-Gl05	0	16	13	0	3	0	16
Glomus	sp.	VT124	2	6	1	0	5	2	8
Glomus	sp.	VT70	449	123	144	16	292	120	572
Glomus	sp.	VT343	6	1419	1424	0	1	0	1425
Glomus	sp.	VT93	51	36	53	0	7	27	87
Glomus	sp.	VT79	253	263	118	117	241	40	516
Glomus	sp.	VT215	0	4	0	1	1	2	4
Glomus	sp.	VT359	601	338	196	29	142	572	939
Glomus	sp.	MO-G76	0	1	0	0	1	0	1
Glomus	sp.	VT111	1	0	0	1	0	0	1
Glomus	sp.	VT247	0	1	0	0	1	0	1
Glomus	sp.	VT253	702	1	639	64	0	0	703

Glomus	sp.	VT433	1	8	0	9	0	0	9
Glomus	sp.	VT96	152	7	20	32	107	0	159
Glomus	sp.	MO-G74	7	3	0	10	0	0	10
Glomus	sp.	VT101	59	145	199	5	0	0	204
Glomus	sp.	VT370	9	1	0	0	1	9	10
Glomus	sp.	VT426	55	15	0	64	6	0	70
Glomus	sp.	VT399	4	0	4	0	0	0	4
Glomus	sp.	VT270	0	1	1	0	0	0	1
Glomus	sp.	VT167	0	31	0	0	31	0	31
Glomus	sp.	VT166	3	0	0	3	0	0	3
Glomus	sp.	GCL-4	0	72	0	72	0	0	72
Glomus	sp.	VT183	53	0	53	0	0	0	53
Glomus	sp.	VT178	0	46	27	0	19	0	46
Glomus	sp.	VT454	0	50	32	17	1	0	50
Glomus	sp.	VT219	0	1	0	0	0	1	1
Rhizophagus	*clarum*	VT264	1	1	1	1	0	0	2

	Rhizophagus	*manihotis*	VT90	10	5	7	1	1	6	15
Paraglomeraceae	*Paraglomus*	sp.	VT444	2106	35280	6816	2042	10698	17830	37386
	Paraglomus	sp.	VT1	0	18	0	18	0	0	18
	Paraglomus	sp.	VT446	0	18	0	18	0	0	18
TOTAL				16733	42466	22498	4356	12576	19769	59199