

Supplementary Material 2 - Part1 Soil chemical properties.

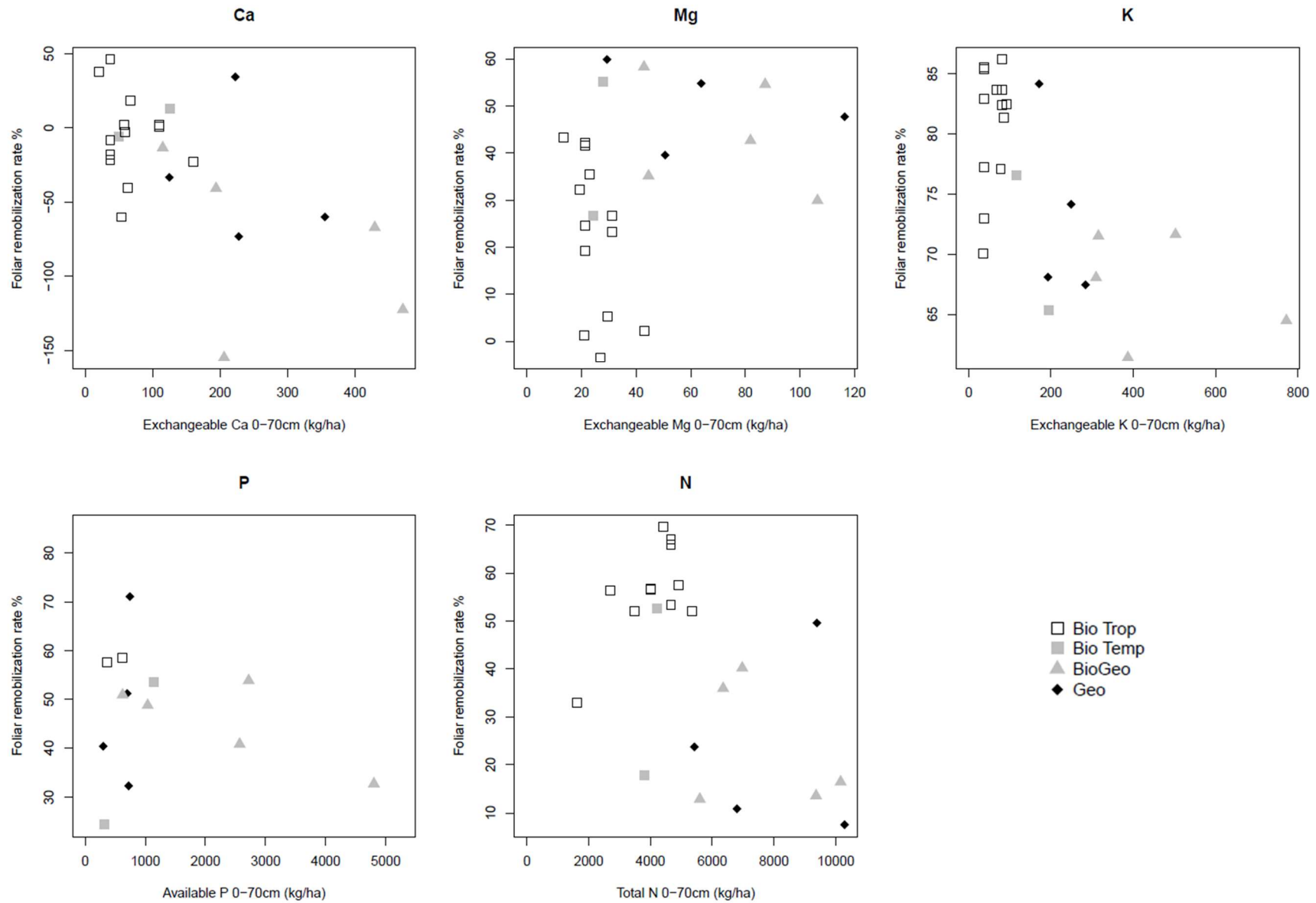
	Abreschviller		Ardennes		Aubure 1		Aubure 2		Bonhomme		Breuil		Fougères		Gemaingoutte		Itatinga			Kondi			Vauxrenard																
C (Kg ha⁻¹)	Mean	St dev	n	Mean	St dev	n	Mean	St dev	n	Mean	St dev	n	Mean	St dev	n	Mean	St dev	n	Mean	St dev	n	Mean	St dev	n															
LFH	4444.2	1399.8	10	10626.5	4067.4	2	17234.3	4626.2	20	11049.8	1471.0	4	13619.8	6877.7	106	12321.4	15454.4	164	1155.7	291.1	10	8947.1	2224.3	4	12439.4	6472.9	2												
0-10	22939.4	4453.8	12	50927.0	26314.4	8	44231.2	13178.1	25	49371.0	36707.3	7	48785.5		1	26122.1	8164.4	126	48061.8	14610.9	92	33887.2	10502.7	10	10205.4	11018.8	23	7652.8	1118.7	20	21052.6	5181.4	4						
10-30	23842.8	2895.3	12	34664.9	8263.1	8	44149.0	14321.0	24	45900.4	13650.8	7	41227.1		1	32411.0	8188.8	126	47248.6	14833.8	91	23473.7	4853.5	10	8375.0	7728.2	23	11081.2	1768.8	20	41783.6	8581.1	4						
30-70	21329.5	2430.1	3	22661.4	4565.5	6	73264.1	30848.1	25	100363.1	32860.1	7	52070.7		1	28524.3	6887.0	13	36576.5	16629.9	88	23521.2	4797.9	10	28210.5	1375.0	9	18474.8	3999.2	10	28997.1	14196.3	5						
70-100	7024.0	3115.2	2	9103.8	3568.0	6	18017.9	6197.0	5	37947.7	9031.1	3				10527.5	5579.5	3	8286.8	1882.9	13	13039.5		1	17988.4	1191.0	9	9513.2	3810.8	10	7735.5	4212.6	5						
70-R95%	10018.0	4238.6	2	13422.5	4190.1	4	24104.5	15906.1	6	83028.0		1	12026.0		1	41846.3	50139.7	5	20206.0	4820.3	12	21960.9		1	102426.6	9424.8	3	54029.4	3860.3	3	4613.3	2713.3	5						
N (Kg ha⁻¹)																																							
LFH	132.3	41.9	10	494.0	193.1	4	716.6	158.2	20	491.7	54.7	4				531.2	254.0	106	626.3	397.3	98	49.8	12.3	10				294.5	69.3	64	52.2	159.8	4						
0-10	1227.8	220.3	12	3662.7	601.5	8	2702.3	688.2	25	2873.7	1916.9	7	2682.3		1	1336.5	297.3	116	2259.0	797.5	92	2034.8	663.3	10	1333.2	410.3	9	400.2	100.1	20	1700.7	408.9	4						
10-30	1179.8	152.8	12	3387.3	614.8	8	2977.0	868.2	24	2462.3	611.6	7	1848.9		1	1853.0	533.7	116	1831.7	753.9	91	1714.7	368.7	10	1200.4	248.5	9	652.5	150.2	20	3592.1	666.3	4						
30-70	1385.0	111.2	3	4576.0	279.9	6	4953.0	1357.1	25	4865.9	1364.4	7	2271.7		1	1729.8	429.1	3	1518.1	956.8	88	1674.0	347.3	10	1892.7	446.3	9	1714.3	302.1	10	2753.2	1186.0	5						
70-100	663.7	120.1	3	3840.5	603.3	6	1925.4	690.6	5	2032.7	485.3	3				4521.4	4373.2	5	1063.7	108.7	13	796.9		1	1270.1	160.8	9	534.1	139.8	10	917.1	454.1	5						
70-R95%	962.9	286.6	2	5867.0	892.5	4	1991.7	637.6	6	4576.6	564.6	1	503.9		1	4172.4	5128.9	5	2963.5	564.6	12	1343.7		1	6147.1	3088.2	3	4652.4	1786.2	3	538.4	303.6	5						
P₂O₅ available (Kg ha⁻¹)																																							
0-10	72.1	68.9	10	80.8	49.0	6	381.4	210.8	5	335.3	96.4	2	39.6		1	146.7	44.4	124	167.3	94.8	92	50.6		1	110.1	58.7	14	73.7	74.9	6	244.8	143.5	2						
10-30	101.2	56.3	10	209.3	81.2	6	1402.1	344.4	4	1227.9	142.5	2	66.2		1	366.8	138.4	124	308.6	117.5	92	175.2		1	140.2	87.5	14	94.5	90.9	6	394.0	167.6	2						
30-70	159.6		1	602.7	56.3	6	6257.8	3723.4	4	3437.4	237.4	2	194.3		1	1086.8	792.6	35	951.0	330.8	88	472.5		1				190.1	159.9	6	1240.4	876.8	2						
70-100	168.0		1	317.1	123.4	6	6305.8	2793.0	4	4632.2	449.3	2				747.0	200.6	13	747.0	200.6	13	352.7		1				172.8	119.8	6	951.8	853.7	2						
70-R95%				414.3	193.6	6	6195.5	2431.3	5				62.5		1				2840.1	2788.4	12	597.6		1				1460.4	1575.0	3	572.1	522.3	2						
K exch (Kg ha⁻¹)																																							
LFH																																							
0-10	32.1	6.6	12	57.7	17.1	8	157.1	11.7	7	22.3	6.7	4				50.5	15.1	133	74.3	23.0	92	56.1	16.1	10	4.8	0.7	23	17.2	6.3	20	61.4	28.4	18						
10-30	31.6	7.4	12	89.0	69.1	8	243.3	102.8	37	213.4	108.1	7	69.4	20.7	5	63.3	19.9	133	68.9	21.9	92	73.8	20.8	10	9.6	1.0	23	25.5	10.7	20	95.9	35.0	18						
30-70	47.5	24.3	3	110.0	17.2	6	468.0	178.4	38	267.2	118.4	7	105.3	51.5	5	120.1	49.5	132	115.6	44.2	89	153.9	28.9	10	21.3	0.5	9	40.1	15.2	10	155.0	47.9	18						
70-100	55.7	7.3	3	105.6	13.6	6	180.8	168.7	5	58.1	41.9	3				87.5	25.0	8	251.4	49.1	13	131.3	36.7	10	15.8	0.5	9	32.2	27.1	10	106.6	37.3	18						
70-R95%	128.2	30.5	2	142.3	18.2	6	181.8	150.9	6	264.8		1	26.9	17.5	5	86.1	54.0	8	709.4	99.8	12	219.7	63.8	10	176.0	6.8	9	266.6	88.7	3	54.5	18.3	18						
Na exch (Kg ha⁻¹)																																							
LFH																																							
0-10	3.2	1.0	7	19.2	17.7	2	1.0	0.4	7	1.0	0.2	5				5.0	11.8	124	14.1	5.2	91	9.3	3.4	10	2.7	0.2	23	7.7	3.9	20	8.3	2.7	18						
10-30	5.6	0.2	7	10.6	0.0	2	12.5	8.9	8	16.5	10.2	5				8.3	18.6	124	21.6	6.4	92	19.1	6.9	10	5.7	0.6	23	12.3	6.0	20	20.8	6.8	18						
30-70	11.4	0.7	2				25.8	27.9	8	31.3	22.7	5				20.3	45.2	123	51.1	19.4	89	42.8	15.7	10	12.5	0.3	9	24.4	13.2	10	47.9	20.5	18						
70-100	9.2	0.2	2				99.5		1	51.5		1				13.2	4.3	8	74.2	22.6	13	31.2	18.5	10	9.3	0.3	9	17.7	11.4	10	42.7	20.5	18						
70-R95%	18.9	2.3	2				99.5		1	112.5		1				13.3	8.3	8	275.1	85.6	11	54.2	34.6	10	103.4	4.4	9	313.7	184.1	3	21.4	9.9	18						
Ca exch (Kg ha⁻¹)																																							
LFH																																							
0-10	42.5	11.3	11	72.5	19.4	8	84.2	52.3	7	65.3	20.6					81.9	86.8	39	53.3	58.1	7	54.0	41.4	5	22.1	15.8	134	72.6	41.9	91	86.8	43.6	10	13.4	10.9	23	12.6	8.0	20
10-30	26.5	5.8	11	54.7	25.5	8	78.2	80.1	38	164.0	241.9	7	27.9	11.9	5	9.8	14.3	134	40.3	24.1	92	106.8	68.0	10	9.0	3.9	23	21.7	12.7	20	90.3	56.3	18						
30-70	57.6	7.2	3	132.9	56.4	6	110.8	141.1	38	188.2	168.7	7	43.0	30.7	5	14.9	18.6	133	49.9	30.3	89	161.7	59.2	10	10.9	0.3	9	49.2	30.8	10	179.7	144.7	18						
70-100	56.8	10.2	3	112.3	43.9	6	317.6	194.0	5	222.7	194.2	3				9.4	4.2	8	146.8	163.2	13	133.8	44.3	10	8.1	0.3	9	39.6	22.9	10	208.9	227.2	18						
70-R95%	90.3	8.1	2	165.6	67.1	6	354.6	195.7	6	38.8			8.7	5.6	5	11.0	10.6	8	602.1	416.9	11	222.0	83.4	10	91.7	8.4	9	461.8	264.3	3	99.4	131.0	18						
Mg exch (Kg ha⁻¹)																																							
LFH																																							
0-10	9.3	4.3	12	21.8	5.3	8	7.3	4.6																															

Supplementary Material 3. Foliage concentrations at the studied sites and deficiency threshold for the different elements.

		Ca	K	Mg	N	P
		(%)				
<i>Deficiency threshold*</i>		0.1	0.35	0.06	1.2	0.11
<i>Critical level*</i>		0.2	0.45	0.08	1.4	0.15
Bio	AbrAa55	0.5	0.55	0.06	1.4	0.10
Bio	BreFs30	0.3	0.67	0.06	2.4	0.11
Bio	ItaEu0-1	0.7	0.74	0.29	2.3	0.15
Bio	ItaEu1-2	0.5	0.60	0.30	2.0	0.11
Bio	ItaEu2-3	0.5	0.61	0.30	2.4	0.11
Bio	ItaEu3-4	0.4	0.51	0.26	2.0	0.12
Bio	ItaEu4-5	0.5	0.45	0.26	2.0	0.11
Bio	ItaEu5-6	0.6	0.45	0.25	1.8	0.15
Bio	KonEu0-1	0.5	0.54	0.49	1.9	0.18
Bio	KonEu1-2	0.3	0.46	0.47	1.9	0.17
Bio	KonEu2-3	0.4	0.43	0.46	2.0	0.17
Bio	KonEu3-4	0.4	0.40	0.44	2.1	0.17
Bio	<i>KonEu4-5</i>	0.4	0.40	0.44	2.0	0.17
Bio	<i>KonEu6-7</i>	0.4	0.42	0.33	2.1	0.15
Bio	<i>KonEu7-8</i>	-	-	-	-	-
Bio	<i>KonEu8-9</i>	-	-	-	-	-
BioGeo	Au1Pa15	0.6	0.64	0.07	1.2	0.17
BioGeo	Au1Pa35	0.2	0.58	0.06	1.3	0.15
BioGeo	Au1Pa85	0.2	0.78	0.06	1.5	0.18
BioGeo	Au2Fs150	-	-	-	-	-
BioGeo	VauPm20	0.4	0.74	0.14	1.7	0.21
BioGeo	VauPm40	0.3	0.62	0.11	1.5	0.13
BioGeo	VauPm60	0.4	0.56	0.12	1.6	0.13
Geo	ArdPa50	0.5	0.48	0.08	1.3	0.11
Geo	ArdQp140	0.3	1.11	0.11	2.5	0.23
Geo	BonPa70	0.2	0.79	0.06	1.5	0.15
Geo	FouFs13	0.5	0.68	0.15	2.5	0.14
Geo	FouFs30	0.3	0.73	0.13	2.6	0.14
Geo	FouFs86	0.4	0.78	0.11	2.3	0.12
Geo	FouFs150	0.4	0.75	0.12	2.5	0.13
Geo	GemPa84	0.2	0.53	0.11	1.4	0.20

* Bonneau et al. 1995, p 142; Le Goaster et al 1991

Supplementary Material 4. Foliar remobilization rate related to exchangeable (Ca, Mg, K), available (P) and total (N) pools in the 0-70cm soil of the studied sites, depending on the type of ecosystem functioning (Bio, BioGeo and Geo).



Supplementary Material 5. Input-Output budgets (I-O Budget) for Ca, Mg, K, N and P related to H0:Hmax, depending on the type of ecosystem functioning (Bio, BioGeo and Geo).

