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Leven en sterven langs de Limes : het fysisch-antropologisch onderzoek van vier grafveldpopulaties uit de noordelijke grenszone van Germania Inferior in de Vroeg- en Midden-Romeinse tijd

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Bijlage I. Valkenburg

I-1. Gewichtsverdeling van de crematieresten: totaal gewicht, de grote en kleine fractie en de skeletdelen per grafcategorie.

GRAF		N	Minimum	Maximum	Mean	Std. Deviation	Skewness
CATEGORIE							
1	TOTAAL GEWICHT	109	3	6330	901.81	1085.989	2.043
	GEW >10MM	109	0	4096	429.69	630.297	2.747
	GEW <10MM	109	3	2254	472.12	494.005	1.431
	NEUROCR	109	0	708	67.50	101.341	3.037
	VISCEROCR	109	0	149	16.82	22.961	2.515
	AXIAAL	109	0	1213	88.52	157.424	3.986
	EXTRDIAF	109	0	2389	209.90	325.390	3.452
	EXTREPIF	109	0	491	46.95	76.206	2.784
2	TOTAAL GEWICHT	228	4	4315	649.14	616.365	1.674
	GEW >10MM	228	0	2087	309.36	337.850	1.674
	GEW <10MM	228	2	2228	339.78	318.398	1.845
	NEUROCR	228	0	311	48.62	53.051	1.592
	VISCEROCR	228	0	86	12.03	13.806	1.907
	AXIAAL	228	0	480	59.66	82.005	2.047
	EXTRDIAF	228	0	1084	156.13	174.719	1.788
	EXTREPIF	228	0	290	32.92	44.570	2.307
3	TOTAAL GEWICHT	78	2	2764	974.08	733.256	.595
	GEW >10MM	78	0	1755	554.23	472.606	.748
	GEW <10MM	78	2	1857	419.85	359.271	1.383
	NEUROCR	78	0	255	66.09	58.478	.992
	VISCEROCR	78	0	74	17.60	17.387	1.275
	AXIAAL	78	0	530	137.06	144.666	1.095
	EXTRDIAF	78	0	857	262.15	221.013	.621
	EXTREPIF	78	0	413	71.32	73.610	1.818
4	TOTAAL GEWICHT	105	1	1903	113.18	240.322	4.938
	GEW >10MM	105	0	783	44.45	103.171	4.741
	GEW <10MM	105	0	1120	68.73	140.213	4.948
	NEUROCR	105	0	124	7.20	15.705	4.607
	VISCEROCR	105	0	54	1.97	6.407	6.523

AXIAAL	105	0	180	8.03	22.547	5.373
EXTRDIAF	105	0	371	23.78	54.308	4.136
EXTREPIF	105	0	74	3.47	9.586	5.003

1-2. Derdemachtswortel transformatie - totaal gewicht aan crematieresten per grafcategorie

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	109	7.9234	4.10038	.39275	7.1449	8.7019	1.44	18.50
2	228	7.6757	2.93972	.19469	7.2921	8.0594	1.59	16.28
3	78	9.0043	3.13943	.35547	8.2965	9.7122	1.26	14.03
4	105	3.6549	2.17431	.21219	3.2341	4.0757	1.00	12.39
Total	520	7.1150	3.59474	.15764	6.8053	7.4247	1.00	18.50

1-3. F-toets derdemachtswortel van totaal gewicht: grafcategorie en gewicht

GRAF CATEGORIE	GRAF CATEGORIE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
(I) TYPE	(J) TYPE				Lower Bound	Upper Bound
1	2	.2477	.36351	.904	-.6892	1.1846
	3	-1.0809	.46295	.092	-2.2741	.1123
	4	4.2685*	.42685	.000	3.1684	5.3687
2	1	-.2477	.36351	.904	-1.1846	.6892
	3	-1.3286*	.40947	.007	-2.3840	-.2732
	4	4.0209*	.36816	.000	3.0720	4.9698
3	1	1.0809	.46295	.092	-.1123	2.2741
	2	1.3286*	.40947	.007	.2732	2.3840
	4	5.3495*	.46662	.000	4.1468	6.5521
4	1	-4.2685*	.42685	.000	-5.3687	-3.1684
	2	-4.0209*	.36816	.000	-4.9698	-3.0720
	3	-5.3495*	.46662	.000	-6.5521	-4.1468

* The mean difference is significant at the .05 level.

1-4. F-toets derdemachtswortel transformatie totaalgewicht: graftype en gewicht.

Tukey HSD

GRAF CATEGORIE	N	Subset for alpha = .05		
		Subset 1	Subset 2	Subset 3
4	105	3.6549		
2	228		7.6757	
1	109		7.9234	
3	78			9.0043

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 111.406.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

1-5. Fragmentatie van de crematieresten per grafcategorie.

G	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
GRAF CATEGORIE						
1	109	1	9	4.28	2.125	-.109
2	228	1	13	4.83	2.040	.479
3	78	1	11	5.83	2.230	-.009
4	105	1	7	2.71	1.747	.637

1-6. F-toets 3^e machtstransformatie: fragmentatie per grafcategorie.

Tukey HSD

GRAF CATEGORIE TYPE	N	Subset for alpha = .05		
		Subset 1	Subset 2	Subset 3
4	105	1.33		
1	109		1.56	
2	228		1.65	
3	78			1.76

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 111.406.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

I-7. Gewicht per geslachts- en leeftijdsgroep.

GESLACHT	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
Vrouw	70	20	3094	1172.43	642.472	.620
Man	56	82	3945	1408.59	790.184	.805
LEEFTIJD						
0-7	24	10	545	177.50	163.653	.893
7-14	39	12	1333	415.00	328.472	1.129
14-20	22	130	2358	831.95	587.032	.946

I-8. F-toets 3* machtstransformatie totaal gewicht: geslacht en leeftijdsgroepen

Tukey HSD

	N	Subset for alpha = .05		
		Subset 1	Subset 2	Subset 3
0-7	24	5.00		
7-14	39		6.90	
14-20	22		8.23	
Vrouw	70			10.10
Man	56			10.77

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 30.041.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

I-9. Gewicht per geslachts- en leeftijdsgroep en grafcategorie.

Graf categorie	Geslacht/leeftijd	Mean	N	Std. Deviation
1	Man	2099.73	11	1031.365
	Vrouw	1368.93	14	841.890
	0-7	304.00	3	238.057
	7-14	403.57	7	395.775
	14-20	1062.00	5	964.929
2	Man	1124.33	24	524.269
	Vrouw	1077.16	38	466.744
	0-7	197.54	13	171.516
	7-14	432.90	21	351.482
	14-20	776.64	14	491.506
3	Man	1468.33	18	646.052
	Vrouw	1386.20	15	719.209
	0-7	120.00	6	80.833
	7-14	508.57	7	225.193
	14-20	706.67	3	232.921
4	Man	790.00	3	969.862
	Vrouw	393.33	3	535.261
	0-7	30.00	2	19.799
	7-14	177.25	4	173.258

I-10. Fragmentatie per geslachts- en leeftijdsgroep.

LEEFTIJD	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
Vrouw	70	1	11	5.81	1.906	-.062
Man	56	3	10	6.22	1.618	.149
0-7	24	1	6	3.00	1.351	.267
7-14	39	1	7	4.21	1.218	.059
14-20	22	3	8	5.62	1.596	-0.486

I-11. F-toets 3^e machtstransformatie fragmentatie: geslacht en leeftijdsgroepen.

Tukey HSD

	N	Subset for alpha = .05		
		Subset 1	Subset 2	Subset 3
0-7	24	1.41		
7-14	39		1.60	
14-20	22			1.74
Vrouw	70			1.77
Man	56			1.83

Means for groups in homogeneous subsets are displayed.

a Uses Harmonic Mean Sample Size = 30.041.

b The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

I-12. Gewicht, inventarisatie en fragmentatie per grafttype.

		N	Minimum	Maximum	Mean	Std. Deviation	Skewness
1.1	Grafttype						
	?						
	TOTAAL GEWICHT	3	1	40	15.33	21.455	1.665
	GEW >10MM	3	0	15	5.00	8.660	1.732
	GEW <10MM	3	1	25	10.33	12.858	1.545
	NEUROCR	3	0	0	.00	.000	.
	VISCEROCR	3	0	0	.00	.000	.
	AXIAAL	3	0	0	.00	.000	.
	EXTRDIAF	3	0	15	5.00	8.660	1.732
	EXTREPIF	3	0	0	.00	.000	.
	Fragmentatie	3	1	2	1.33	.577	1.732
		3					
	B						
	TOTAAL GEWICHT	46	4	6330	1369.30	1309.077	1.733
	GEW >10MM	46	0	4096	693.65	800.926	2.212
	GEW <10MM	46	4	2254	675.65	562.068	1.255
	NEUROCR	46	0	708	106.98	131.123	2.479
	VISCEROCR	46	0	149	26.17	28.902	2.052
	AXIAAL	46	0	1213	153.20	208.435	3.160
	EXTRDIAF	46	0	2389	330.96	419.179	2.946
	EXTREPIF	46	0	491	76.35	93.641	2.349
	Fragmentatie	46	1	8	5.15	1.943	-.528
	C						
	TOTAAL GEWICHT	170	4	1943	540.74	506.256	.988
	GEW >10MM	170	0	1731	242.52	283.031	1.778
	GEW <10MM	170	4	1121	298.21	267.521	1.061
	NEUROCR	170	0	255	40.66	46.756	1.543
	VISCEROCR	170	0	67	10.38	12.538	2.018
	AXIAAL	170	0	362	43.66	66.468	2.445
	EXTRDIAF	170	0	978	121.98	149.145	2.031
	EXTREPIF	170	0	180	25.84	36.089	2.124
	Fragmentatie	170	1	10	4.55	1.931	.197
	D						
	TOTAAL GEWICHT	50	2	2764	1083.60	821.573	.392
	GEW >10MM	50	0	1755	602.06	536.548	.601
	GEW <10MM	50	2	1857	481.54	404.554	1.156
	NEUROCR	50	0	255	71.40	65.687	.881
	VISCEROCR	50	0	74	18.76	18.318	1.054
	AXIAAL	50	0	530	155.06	160.989	.869
	EXTRDIAF	50	0	857	279.62	245.467	.558
	EXTREPIF	50	0	413	77.22	86.434	1.608
	Fragmentatie	50	1	11	5.96	2.466	-.122

D*	TOTAAL GEWICHT	3	294	1483	892.33	594.537	-.058
	GEW >10MM	3	82	763	473.00	351.555	-1.186
	GEW <10MM	3	212	720	419.33	266.551	1.382
	NEUROCR	3	35	130	70.67	51.733	1.628
	VISCEROCR	3	5	15	11.33	5.508	-1.668
	AXIAAL	3	19	152	105.33	74.849	-1.715
	EXTRDIAF	3	15	439	242.00	213.586	-.620
	EXTREPIF	3	8	88	43.67	40.698	.915
	Fragmentatie	3	5	7	5.67	1.155	1.732
E	TOTAAL GEWICHT	18	39	4315	1344.17	1104.266	1.276
	GEW >10MM	18	14	2087	641.50	540.524	1.243
	GEW <10MM	18	25	2228	702.67	586.755	1.250
	NEUROCR	18	0	311	102.89	85.085	1.004
	VISCEROCR	18	0	86	20.83	21.637	1.743
	AXIAAL	18	5	480	131.06	134.291	1.425
	EXTRDIAF	18	0	1084	332.50	275.136	1.247
	EXTREPIF	18	5	181	54.22	52.466	1.109
	Fragmentatie	18	3	10	6.17	1.757	.447
F	TOTAAL GEWICHT	25	2	1794	764.84	496.015	.207
	GEW >10MM	25	0	1188	468.32	324.441	.380
	GEW <10MM	25	2	840	296.52	224.227	.763
	NEUROCR	25	0	140	54.92	41.806	.608
	VISCEROCR	25	0	67	16.04	16.496	1.752
	AXIAAL	25	0	381	104.88	109.011	1.379
	EXTRDIAF	25	0	590	229.64	167.657	.349
	EXTREPIF	25	0	145	62.84	41.835	.281
	Fragmentatie	25	1	9	5.60	1.826	.161
G	TOTAAL GEWICHT	40	20	1997	797.10	521.990	.194
	GEW >10MM	40	0	1170	443.95	317.679	.250
	GEW <10MM	40	2	1018	353.15	247.745	.691
	NEUROCR	40	0	171	58.05	45.010	.455
	VISCEROCR	40	0	42	15.05	12.930	.592
	AXIAAL	40	0	265	95.50	85.739	.582
	EXTRDIAF	40	0	605	221.90	156.257	.290
	EXTREPIF	40	0	290	53.45	62.114	2.120
	Fragmentatie	40	1	13	5.42	2.275	1.272
H	TOTAAL GEWICHT	81	1	1010	89.70	164.473	3.630
	GEW >10MM	81	0	465	35.05	76.453	3.847
	GEW <10MM	81	0	545	54.65	91.647	3.443
	NEUROCR	81	0	47	5.86	10.755	2.246

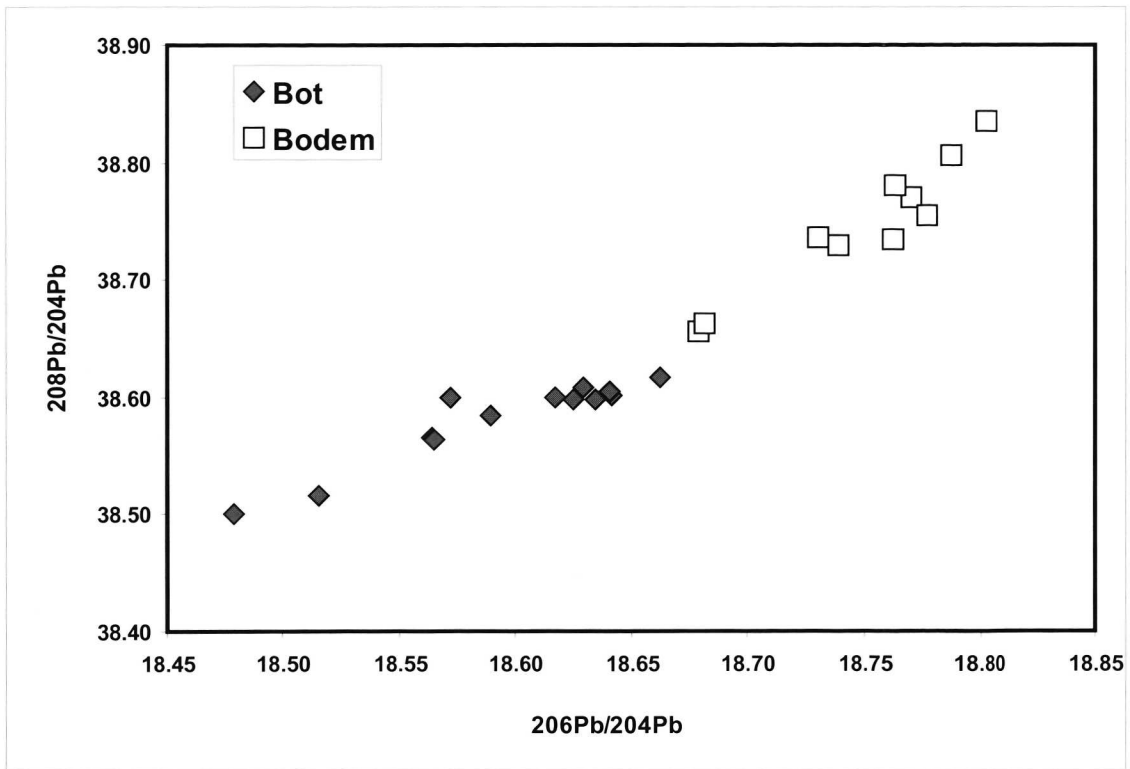
	VISCEROCR	81	0	54	1.77	6.223	7.640
	AXIAAL	81	0	103	5.73	14.645	4.696
	EXTRDIAF	81	0	252	19.20	44.105	3.889
	EXTREPIF	81	0	40	2.49	6.777	4.235
	Fragmentatie	81	1	7	2.65	1.755	.704
I	TOTAAL GEWICHT	19	221	3094	1288.95	702.108	.759
	GEW >10MM	19	38	1473	543.26	400.993	.823
	GEW <10MM	19	183	1621	745.68	328.059	.580
	NEUROCR	19	11	241	96.42	66.926	.395
	VISCEROCR	19	4	60	22.37	14.338	1.029
	AXIAAL	19	0	438	98.16	100.612	2.218
	EXTRDIAF	19	11	908	268.37	220.830	1.420
	EXTREPIF	19	1	262	57.95	65.005	1.961
	Fragmentatie	19	1	8	4.68	1.765	-.612
J	TOTAAL GEWICHT	42	3	1867	198.67	375.303	3.189
	GEW >10MM	42	0	1033	73.76	185.240	4.103
	GEW <10MM	42	3	834	124.90	198.627	2.486
	NEUROCR	42	0	136	10.14	23.330	4.231
	VISCEROCR	42	0	36	3.62	7.939	3.034
	AXIAAL	42	0	289	12.69	46.618	5.484
	EXTRDIAF	42	0	424	40.29	90.548	3.096
	EXTREPIF	42	0	148	7.02	24.668	5.029
	Fragmentatie	42	1	9	3.05	1.937	.690
K	TOTAAL GEWICHT	2	311	2164	1237.50	1310.269	.
	GEW >10MM	2	139	1369	754.00	869.741	.
	GEW <10MM	2	172	795	483.50	440.528	.
	NEUROCR	2	35	143	89.00	76.368	.
	VISCEROCR	2	4	48	26.00	31.113	.
	AXIAAL	2	18	186	102.00	118.794	.
	EXTRDIAF	2	66	798	432.00	517.602	.
	EXTREPIF	2	16	194	105.00	125.865	.
	Fragmentatie	2	6	6	6.00	.000	.
L	TOTAAL GEWICHT	20	1	564	133.45	171.129	1.418
	GEW >10MM	20	0	198	51.50	65.279	1.234
	GEW <10MM	20	1	402	81.95	111.777	1.785
	NEUROCR	20	0	42	7.85	11.352	1.718
	VISCEROCR	20	0	9	1.50	2.565	1.975
	AXIAAL	20	0	47	9.95	16.922	1.639
	EXTRDIAF	20	0	118	27.80	37.916	1.641
	EXTREPIF	20	0	17	4.40	6.394	1.025
	Fragmentatie	20	1	5	2.95	1.538	-.101

R	TOTAAL GEWICHT	1	1903	1903	1903.00	.	.
	GEW >10MM	1	783	783	783.00	.	.
	GEW <10MM	1	1120	1120	1120.00	.	.
	NEUROCR	1	124	124	124.00	.	.
	VISCEROCR	1	34	34	34.00	.	.
	AXIAAL	1	180	180	180.00	.	.
	EXTRDIAF	1	371	371	371.00	.	.
	EXTREPIF	1	74	74	74.00	.	.
	Fragmentatie	1	7	7	7.00	.	.

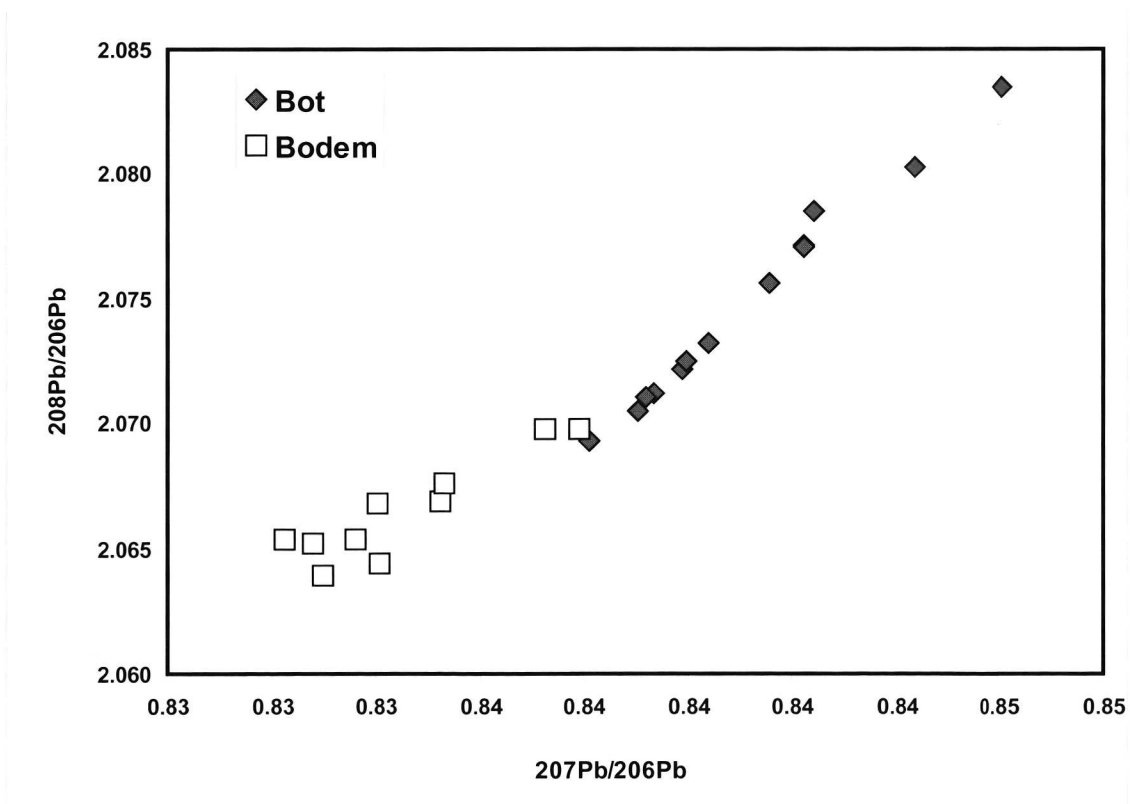
I-13. Loodiostopenverhoudingen.

Monster		207Pb/208Pb	
Bot		Bodem	
6-333/6	0,4051	6-333A	0,4015
6-225/5	0,4047	6-225A	0,4006
6-225/6	0,4045	6-225B	0,4014
64-90/5	0,4048	6-329A	0,4024
64-90/6	0,405	6-329B	0,4021
59-176/6	0,4045	64-90B	0,4016
59-209/5	0,4051	59-176A	0,4012
59-209/6	0,4053	59-209A	0,4035
59-245/6	0,4057	59-209B	0,4027
59-241/5	0,4056	59-91A	0,4024
59-241/6	0,4054	59-91B	0,4023
59-103/5	0,4071		
59-103/6	0,4055		

Monster	206Pb/204Pb		207Pb/204Pb		208Pb/204Pb		207Pb/206Pb		208Pb/206Pb	
Bot										
6-333/6	18.617±	0.002	15.647±	0.001	38.599±	0.003	0.84041±	0.00001	2.07321±	0.00004
6-225/5	18.629±	0.001	15.647±	0.001	38.608±	0.004	0.83990±	0.00003	2.07216±	0.00008
6-225/6	18.625±	0.001	15.645±	0.001	38.598±	0.002	0.83997±	0.00002	2.07253±	0.00007
64-90/5	18.641±	0.002	15.642±	0.001	38.601±	0.003	0.83902±	0.00002	2.07053±	0.00004
64-90/6	18.634±	0.001	15.642±	0.001	38.598±	0.003	0.83933±	0.00002	2.07124±	0.00006
59-176/6	18.572±	0.002	15.645±	0.001	38.599±	0.004	0.84241±	0.00002	2.07850±	0.00009
59-209/5	18.564±	0.002	15.637±	0.001	38.565±	0.003	0.84222±	0.00003	2.07714±	0.00007
59-209/6	18.565±	0.001	15.637±	0.001	38.564±	0.002	0.84221±	0.00002	2.07709±	0.00005
59-245/6	18.589±	0.001	15.645±	0.001	38.584±	0.002	0.84156±	0.00002	2.07560±	0.00006
59-241/5	18.515±	0.001	15.633±	0.001	38.516±	0.002	0.84436±	0.00002	2.08026±	0.00008
59-241/6	18.479±	0.002	15.635±	0.001	38.501±	0.004	0.84606±	0.00002	2.08351±	0.00006
59-103/5	18.662±	0.002	15.642±	0.001	38.616±	0.003	0.83812±	0.00003	2.06928±	0.00007
59-103/6	18.640±	0.002	15.643±	0.002	38.605±	0.004	0.83921±	0.00002	2.07108±	0.00006
Bodem										
6-333A	18.787±	0.002	15.646±	0.002	38.806±	0.005	0.83280±	0.00003	2.06520±	0.00006
6-225A	18.770±	0.002	15.649±	0.002	38.771±	0.004	0.83362±	0.00002	2.06537±	0.00006
6-225B	18.762±	0.002	15.651±	0.002	38.735±	0.004	0.83406±	0.00002	2.06444±	0.00006
6-329A	-	-	-	-	-	-	-	-	-	-
6-329B	18.777±	0.004	15.643±	0.003	38.755±	0.008	0.83299±	0.00003	2.06392±	0.00006
64-90B	18.739±	0.002	15.652±	0.001	38.729±	0.003	0.83522±	0.00002	2.06693±	0.00005
59-176A	18.730±	0.005	15.646±	0.004	38.737±	0.011	0.83530±	0.00004	2.06764±	0.00007
59-209A	18.679±	0.002	15.651±	0.001	38.656±	0.003	0.83793±	0.00003	2.06976±	0.00007
59-209B	18.681±	0.001	15.641±	0.001	38.663±	0.002	0.83725±	0.00003	2.06979±	0.00007
59-91A	18.802±	0.002	15.650±	0.001	38.836±	0.003	0.83225±	0.00003	2.06540±	0.00005
59-91B	18.763±	0.001	15.650±	0.001	38.780±	0.002	0.83405±	0.00003	2.06679±	0.00009



I-13a De verhouding $^{208}\text{Pb}/^{204}\text{Pb}$ - $^{206}\text{Pb}/^{204}\text{Pb}$.



I-13b De verhouding $^{208}\text{Pb}/^{206}\text{Pb}$ - $^{207}\text{Pb}/^{206}\text{Pb}$.

I-14 Graftype en datering: het aantal individuen per graftype in de 1^e en 2^e eeuw.

Graftype	1 ^e eeuw	2 ^e eeuw	'Romeins'	Totaal aantal individuen	Totaal aantal graven
Bu	25	23	6	54	46
IJK	34	24	14	72	63
Bg	71	53	48	172	170
Bs	6	7	6	19	18
Cr	8	5	27	40	40
U	13	5	7	25	25
Uo	1	2	-	3	3
Us	33	14	7	54	50
X(H,RL)	37	26	47	110	105
Totaal	228	159	162	549	520

I-15 Chi-square test: 1^e versus 2^e eeuw per graftype.

Graftype	1e eeuw (n graven)	2e eeuw (n-graven)	Som Chi- kwadraat coefficient	p-waarde
Bg	71	52	2.935	0.1
Bs	5	7	0.333	0.6
Cr	8	5	0.692	0.5
U	13	5	3.566	0.05 (sign.)
Us	29	14	5.233	0.02 (sign.)
Bu	24	16	1.6	0.2