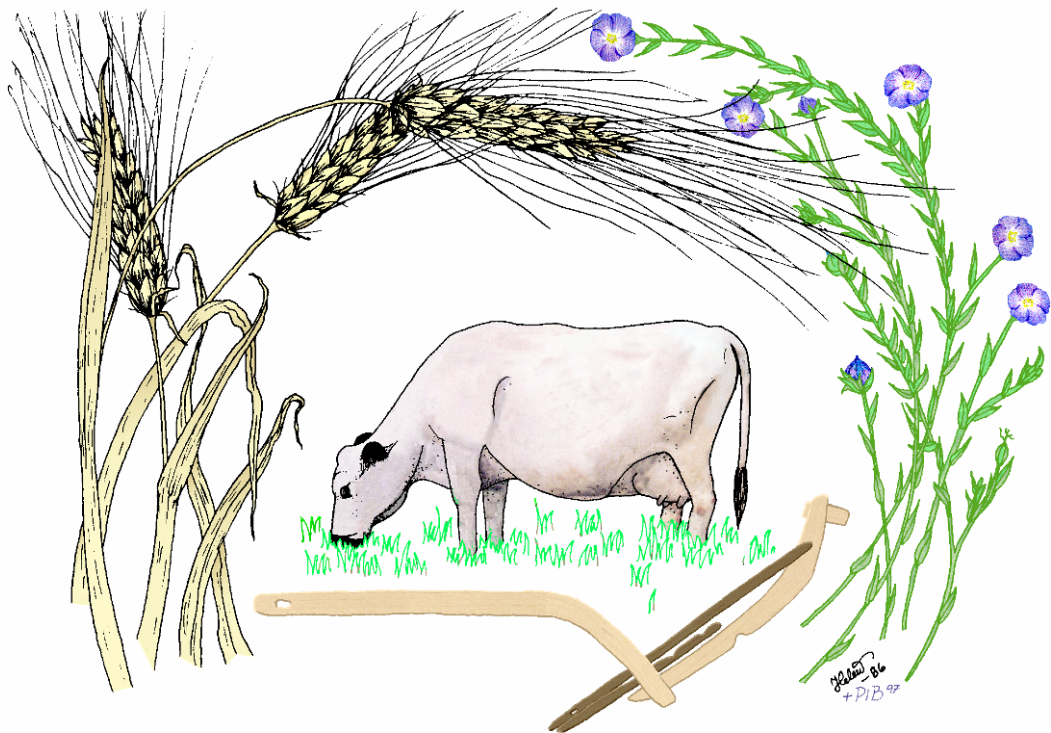


MILJÖARKEOLOGISKA LABORATORIET

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Supplementary soil analyses to the
micromorphology samples from Aske
Østre (4019/4,6), Larvik kommune,
Vestfold and Telemark county, Norway.

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INSTITUTIONEN FÖR IDÉ – OCH SAMHÄLLSSTUDIER



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Project: Aske Østre (4019/4,6), Larvik, Vestfold og Telemark

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Introduction

This is a supplementary analysis to the micromorphology conducted by Dr Richard I Macphail at University College London.

All samples have been provided by Jessica Leigh McGraw and Christian Løchsen Rødsrud, Kulturhistorisk museum, Universitetet i Oslo.

Sample treatment

Geochemistry

Prior to all analyses all samples were dried at 30°C. Samples were then passed through a 1.25 mm sieve and any presence of material of cultural significance noted (such as bone, charred material, ceramics etc.). The chemical methods employed here are the same as those used in Swedish soil chemical studies following the methodological approach of Engelmark and Linderholm (1996 and 2008). The parameters analysed and abbreviations used are explained in table 1.

Table 1. Geoarchaeological methods and abbreviations as used in this report.

Abbreviation	Method	Description
MS_{lf}	Magnetic Susceptibility	Magnetic susceptibility measured on 10g of soil, with a Bartington MS3 system with an MS2B probe (Dearing 1994). Data are reported as SI-units per ten grams of soil, (corresponding to X_{lf} , $10^{-8} \text{ m}^3 \text{ kg}^{-1}$) (Thompson & Oldfield 1986).
MS550	Magnetic Susceptibility after burning at 550°C	Magnetic susceptibility after 550° C ignition (units as above)
LOI (%)	Loss On Ignition	Soil organic matter, determined by loss on ignition at 550° C, in percent (Carter, 1993).
Cit-P	Inorganic phosphate content (mg P/kg dry matter, ppm)	Extraction with 2% citric acid (corresponding to the Arrhenius method (Arrhenius 1934))
Cit-POI	Total phosphate (mg P/kg dry matter, ppm) (inorganic & organic)	Extraction with 2% citric acid on ignited soil (Engelmark & Linderholm 2008)
P quota	Cit-POI/Cit-P	Ratio of inorganic & organic to inorganic phosphate

These methods have been developed and adapted for soil prospection and the bulk analysis of occupation soils and features. Analysed parameters comprise organic matter (loss on ignition [LOI, and pH], Carter 1993), two fractions of phosphate (inorganic [Cit-P], and sum of organic and inorganic [Cit-POI]) (Engelmark & Linderholm 2008, Linderholm 2007) and magnetic susceptibility (MS- χ_{lf} MS- χ_{hf}) and MS550- χ_{lf} (Crowther 1993, Linderholm 2007, Engelmark & Linderholm 2008). These analyses provide information on various aspects concerning phosphate, iron, red-ox potential and other magnetic components and total organic matter in soils and sediments, and their relationship to phosphate.

Results

Results from the various analyses are presented in table 1.

Table 1 analytical results

MALNo	Monolith	Sample	Context	DepthFrom_cm	DepthTo_cm	Thin section	LabNote	MSif	MS550lf	CitP (ppm)	CitPOI (ppm)	PQuota	LOI	MSQ
21 0015 001	7147	x7147a	A2473	0	0,5	ASK-7147		38	39	823,2	1309,7	1,6	1,8	1,0
21 0015 002		x7147a		0,5	1,5		Probably x7147b	28	102	386,3	1024,6	2,7	2,3	3,6
21 0015 003	7297	x7297a	A919	0	5	ASK-7297		31	35	759,1	1205,1	1,6	1,7	1,1
21 0015 004		x7297b		5	10			22	54	440,4	1021,5	2,3	2,0	2,4
21 0015 005	7718	x7718a	A4545	0	4	ASK-7718		11	17	456,1	1009,3	2,2	1,8	1,6
21 0015 006		x7718b		4	9		plastic in sample	9	11	441,7	876,8	2,0	0,8	1,2
21 0015 007	7719	x7719a	A4545	7	10	ASK-7719		11	16	358,4	1005,4	2,8	2,0	1,5
21 0015 008		x7719b		10	14			15	20	454,7	1207,7	2,7	1,6	1,3
21 0015 009		x7719c		14	16			9	21	412,5	1158,0	2,8	4,7	2,3
21 0015 010	7845	x7845	A2640	0	5	ASK-7845		75	68	851,5	1378,6	1,6	2,1	0,9
21 0015 011	9475	x9475	A2298	2	11	ASK-9475		17	17	521,0	877,7	1,7	1,5	1,0
21 0015 012	9267	x9267a	A2298	0	5	ASK-9267		22	33	731,6	1102,6	1,5	2,1	1,5
21 0015 013		x9267b		5	12			30	64	565,1	1084,8	1,9	1,6	2,2

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