



Figure 1. Sites location: 1-Lozna Strateni, 2 – Udesti, 3 – Todiresti, 4 – Ghilanesti, 5 – Podeni, 6 – Poiana, 7 – Malesti, 8 – Vararie, 9 – Davideni, 10 – Nicolina, 11 – Stefan cel Mare, 12 – Carligi Filipesti, 13 – Izvoare Bahna, 14 – Gara Banca, 15 – Valea Seaca, 16 – Barlaesti.

The paper was realized on the study of seventeen faunal assemblages from Eastern Romania. Among the animal resources domestic mammals constituted the majority. Animal husbandry was an important subsistence activity during the Early Middle Ages in Moldavia, but wild mammal remains were still present, even if only in smaller amounts. The percentage of domestic mammals varies from one settlement to another and ranges between 85.7% at Ghilanesti and 100% at Valea Seaca and Izvoare Bahna. For the majorities of the assemblages the percentage of domestic mammal remains exceeds 95%. The identified domestic mammals, as well as their frequencies, based on number of identified specimens, are shown in Table 2. They consist of: cattle (*Bos taurus*), sheep (*Ovis aries*), goat (*Capra hircus*), pig (*Sus domesticus*), horse (*Equus caballus*), donkey (*Equus asinus*) and dog (*Canis familiaris*). In all assemblages the predominant species are cattle, sheep/goat and pigs, both by the number of identified specimens (NISP) and by minimal number of individuals (MNI). The percentage of these species varies from one sample to other, but cattle are dominant in fifteen of them (the percentage from all the identified domestic mammals range between 38.3% at Udesti and 74% at Nicolina); Udesti and Vararie are the only assemblages in which pig exceeds the cattle.

Cattle is followed by pig in nine assemblages: Podeni (21%), Todiresti (16.8%), Poiana (30.4%), Lozna Strateni (27.9%), Izvoare Bahna (26.4%), Malesti (36%), Ghilanesti (14%), Stefan cel Mare (21.7%) and Carligi Filipesti (18.8%); for the other six assemblages on the second place (after cattle) is sheep/goat, as follows: Nicolina (13.1%), Gara Banca (3-5th centuries; 17.5%), Davideni (17.1%), Barlaesti (8.4%), Gara Banca (9-10th centuries; 14.9%), Valea Seaca (16.3%).

The pig (% NISP) percentages range between 7-8% (Barlaesti, Nicolina and Valea Seaca) and 43-45% (Udesti and Vararie). The sheep/goat percentages vary from 5-6% (at Izvoare Bahna and Carligi Filipesti) till 17% (Gara Banca) (Table 1).

Table 1. Quantification of domestic species (NISP – number of identified specimens).

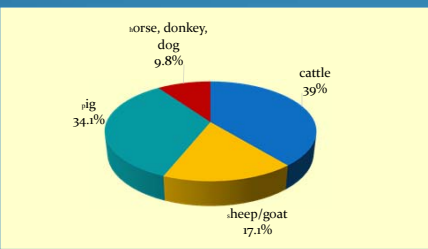
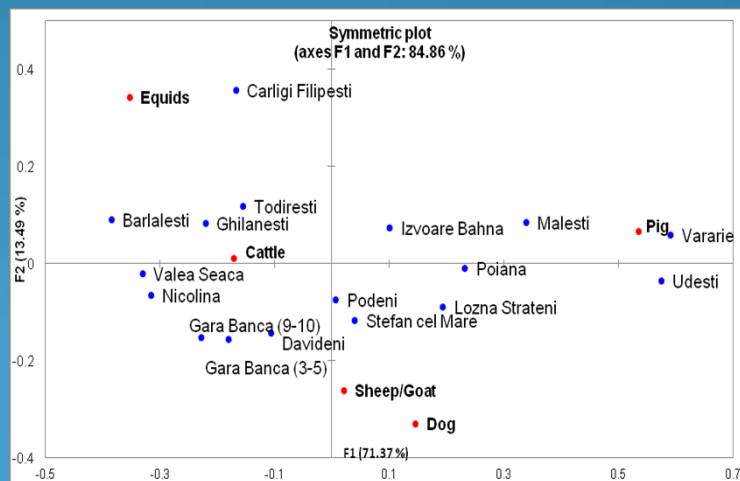
Assemblage	Domestic mammals		Cattle		Sheep/Goat		Pig		Horse		Donkey		Dog	
	NISP	%	NISP	%	NISP	%	NISP	%	NISP	%	NISP	%	NISP	%
Suceava Plateau														
Podeni	1019	62.2	61.0	14.4	14.1	214	21.0	30	3.0	0	0	9	0.9	
Todiresti	274	18.1	66.0	28	10.2	46	16.8	19	7.0	0	0	0	0	
Udesti	703	26.9	38.3	112	15.9	308	43.8	11	1.6	0	0	3	0.4	
Poiana	798	41.8	52.4	93	11.6	243	30.4	26	3.3	0	0	18	2.3	
Siret Corridor														
Carligi Filipesti	80	50	62.5	5	6.2	15	18.8	10	12.5	0	0	0	0	
Davideni	176	113	64.2	30	17.1	28	15.9	5	2.8	0	0	0	0	
Stefan cel Mare	92	53	57.6	15	16.3	20	21.7	3	3.3	0	0	1	1.1	
Malesti	164	82	50.0	18	11.0	59	36.0	5	3.0	0	0	0	0	
Izvoare Bahna	53	34	64.1	3	5.7	14	26.4	0	0	1	1.9	1	1.9	
Vararie	77	32	41.5	8	10.4	35	45.5	1	1.3	0	0	1	1.3	
Moldavian Plain														
Nicolina	933	690	74.0	122	13.1	80	8.5	38	4.1	0	0	3	0.3	
Lozna Strateni	659	300	45.5	130	19.7	184	27.9	39	5.9	0	0	6	1.0	
Ghilanesti	186	135	72.6	16	8.6	26	14.0	9	4.8	0	0	0	0	
Barlad Plateau														
Gara Banca (3-5th centuries)	1731	1085	62.6	302	17.5	215	12.4	93	5.4	0	0	36	2.1	
Valea Seaca	49	33	67.3	8	16.3	4	8.2	4	8.2	0	0	0	0	
Barlaesti	907	686	75.6	76	8.4	66	7.3	65	7.2	2	0.2	12	1.3	
Gara Banca (9-10th centuries)	851	590	69.3	127	14.9	92	10.8	28	3.3	0	0	14	1.7	

The remains of horse, donkey and dog are generally less frequent and their frequencies also differ between assemblages. The lowest frequency for horse is 1-2% (at Vararie, Udesti) and the highest is 12.5% (at Carligi Filipesti); only at Izvoare Bahna this species was not identified. Donkey bones were identified only at Izvoare Bahna and Barlaesti. Dog remains were identified in eleven assemblages, most of them being from Gara Banca (3-5th centuries).

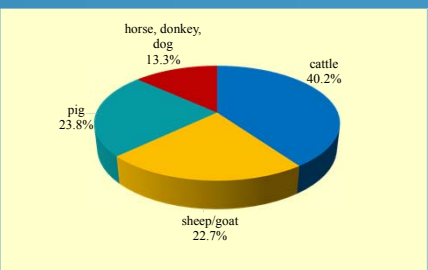
In order to describe the relation between assemblages and domestic mammal species, the chi squared test was used. The calculated chi-squared value is significant at $p < 0.05$ and we accepted the alternative hypothesis of associations between sites and numbers of domestic mammal remains. This means that the differences between assemblages and species have a real basis and are not result of sampling. The first pattern is about the association of species in assemblages. According to Axis 1 which represents 71.37% of total variability, there seems to be a strong negative association between cattle and pig. Also, along the first axis a separation between the following groupings are obvious: cattle - equids and sheep/goat - pig. The distribution of species along Axis 2 which represents 13.49% of total variability shows less separation than on Axis 1.

The second pattern is about relation between assemblages in correlation of the domestic species. The Axis 1 realized a separation in two groups: one of them is associated with equids and cattle (on the negative part of axis) and the other is associated with pig, dog and sheep/goat (on the positive part of axis). One significant cluster is represented by Udesti, Malesti and Vararie where the most bones of pig were identified. Another cluster is represented by Ghilanesti, Barlaesti, Todiresti, Valea Seaca, Nicolina and Gara Banca (9-10 centuries) where the presence of cattle is higher than in other assemblages. The high frequency of horse (Equids) in Carligi Filipesti sample explain the position of these points on the map.

Figure 2. Plot of Correspondence analysis.



In the samples located in Suceava Plateau and Siret Corridor, region with hills of medium high altitude, high levels of humidity and large surfaces of land covered by forest, the husbandry of pig and cattle was predominant; pig represent 34% (from the total MNI estimated for domestic mammals) and cattle 39%, while sheep/goat has only 17% (Figure 3).



Sheep and goat have higher frequencies (22%), although they do not predominate, in settlements situated in the more arid lowland areas characterized by xerophile vegetation, such as the Barlad Plateau and Moldavian Plain; pig has a lower proportion (23%) compared with the Suceava Plateau and Siret Corridor; in this region husbandry was specially orientated towards cattle and sheep/goat breeding (Figure 4).

Figure 4. Percentage (% MNI) of domestic mammals in Moldavian Plain, Barlad Plateau

Animal breeding was an essential activity for the inhabitants of Early Medieval settlement from Eastern Romania. The archaeozoological samples contain large amounts of domestic mammal remains. The domestic mammals identified are: cattle, sheep, goat, pig, horse, and dog. As far as the number of remains and the minimum number of individuals are concerned, the prevailing domestic mammal in the investigated assemblages is cattle, excepting those at Udesti and Vararie, where pig is on the first place. There have been identified two specialized breeding regions: one where the livestock was dominated by cattle and pig (the region with medium altitude in the Sub-Carpathians and hills), and other with cattle and sheep/goat (in the flat-land arid region with xerophile vegetation).