



Zooarchaeology in the south Italy: a perspective of study for the economic characters of the consumption and production during the middle ages

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Zooarchaeology and Medieval Studies in Southern Italy.

At the beginning of the seventy years of the last century, inside a research project of the British School at Rome concerning the “medieval lost villages” in the *Molise* region, Graeme Barker analysed the faunal remains from the site of Santa Maria in Cività, the first medieval zooarchaeological sample from an archaeological context in the Southern Italy. He suggested an High Medieval rural model based on an integrated breeding system: sheep for dairy products lived together with wild kept swine groups; an increasing of pig were explained with a people's decrease and with a growing environmental decay¹.

This kind of analyses came also in Sicily with the work of Corinne Bossard-Beck on the fauna of *Brucato*, a Norman-Swabian village. The osteological sample becomes an instrument to reconstruct «*la culture matérielle des habitants*», principally meant like alimentary and cooking uses. The high percentage of wild animals contributes to the definition of the game's role in the economy and in the society of the village².

The only example of animal bones from an urban context is represented by the analysis of *Otranto* city fauna. A sheep/goat raising strategy prevailed during all the medieval phase of occupation, with an increase occurred in the 13th to early 14th century. A fairly intensive pig raising regime was also indicated; the predominance of males was indicative of a selective slaughtering process to satisfy a meat supply from inhabitants³.

The faunal samples from religious settlements are not very frequent. They can be referred to the *San Vincenzo al Volturno* Abbey in *Molise* (9th century), one of the more influent Benedictine centre of the Medieval Europe. Besides a modest quantitative of mammal bones mostly belonging to pigs probably destined to the table of influential people visiting the monastery, a great part of the sample is constituted by fish remains⁴.

Until the end of the last century, Zooarchaeology and Middle Ages have known, in South Italy, isolated and no programmed cases of study. It's possible to assert that there was no an unitary plan or an historical question for proceeding to the study of the animal bones meant as one of the preference indicators to establish economical and cultural hierarchies between production and consumption sites on a determinate regional territory. Since 2000 the Department of Human Sciences of the University of *Foggia*, with the coordinating of the professor Giuliano Volpe, conducts a project of global archaeology concerning the landscapes of Late Antique and Medieval Apulia. The environment and, in particular, the exploitation of the animal and vegetable resources is one of the most interesting look-out point for understanding the changes of the population's trends in this age of transition.

The Rural Settlement.

The most evidences for reconstructing the stock-farming in the rural settlements of Medieval Apulia are represented by some substantial samples of animal bones (5926 identified fragments) come from the *casalia* of *Ortona* and *S. Lorenzo in Carminiano*, in North Apulia (*Tavoliere*), and from *Apigliano* in the South (*Salento*)⁵. *Casale* was a rural, not fortified, human habitat, usually in plain, with a marked function of deserted lands repopulation and ploughing⁶. During the Byzantine occupation (8th to 11th century) *Apigliano* probably was a *chorion*, a Greek word for a nucleate village of farmers, with a collective management of

¹ G. BARKER, *Stock keeping at D85 (Appendix 4)*, in R. HODGES, G. BARKER, K. WADE, *Excavation at D85 (Santa Maria in Cività): an early medieval hilltop settlement in Molise*, BSR, 48, 1980, pp. 70-124, pp. 97-102, 123-124.

² C. BECK-BOSSARD, *Le mobilier ostéologique et botanique*, in J.-M. PESEZ (ed.), *Brucato. Histoire et archéologie d'un habitat médiéval en Sicile*, Roma 1984, pp. 615-671.

³ J. CARTLEDGE, G. CLARK, V. HIGGINS, *The animal bones: a preliminary assessment of the stock economy*, in F. D'ANDRIA, D. WHITEHOUSE (eds.), *Excavation at Otranto. Volume II: the finds*, Galatina 1992, pp. 317-336.

⁴ S. CHILARDI, *I resti di mammiferi dall'area delle cucine dell'abbazia altomedievale di San Vincenzo al Volturno (IS): risultati preliminari*, in G. MALERBA, P. VISENTINI (eds.), *Atti del 4° Convegno Nazionale di Archeozoologia* (Pordenone, 13-15 novembre 2003), Pordenone 2005, pp. 355-359; A. CARANNANTE, *I resti di pesce e molluschi dall'area delle cucine dell'abbazia altomedievale di San Vincenzo al Volturno (IS): risultati preliminari*, in *Atti del 4° Convegno Nazionale di Archeozoologia* (cit.), pp. 361-366.

⁵ A preliminary report is in G. DE VENUTO, *Animals and Economic Patterns of Medieval Apulia*, in A. PLUSKOWSKI (ed.), *Breaking and Shaping Beastly Bodies. Animals as Material Culture in the Middle Age* (Papers of One Day Conference at McDonald Institute, University of Cambridge, Cambridge, 19th March 2005), Oxford c.s.

⁶ See J. M. MARTIN, GH. NOYÉ, *La Capitanata nella storia del Mezzogiorno medievale*, Bari 1991.

land, fiscally controlled by the State⁷. In *Ortona*, during the Swabian occupation (12th-13th century), it was attested a *domus massaricia*, a farm administrated by the Crown for the stock-raising and the cereal growing. In the 14th century its territory was an important area (*locatione*) for the transhumance movements of the shepherds coming from the *Abruzzo* during the winter⁸. The documentary sources mention *San Lorenzo in Carminiano* at first as a *casale* (1092), successively as a *castrum* (fortified site; 1166), than again as a *casale* in decline (1366)⁹. The fillings of some pits for the grain's storage, abandoned and used like garbage dump in the 14th century, constitute an interesting moment of comparison among three sites with different destiny in the same historical period.

Domestic Animals

At *Ortona* (fig. 1-2) the sheep/goats represent, with the 47% of the NISP and the 41% of the MNI, the most attested domestic species. The anatomical distribution of the bone's remains demonstrates that the animals were probably raised in the site: the ratio among the cranial fragments, the forelimbs, the hindlimbs and the skeletal elements usually discarded after the butchering (metapodials and phalanges) is equal.

The kill-off pattern (fig. 3) traced after the recordings of the teeth wear is compatible with an interest of the population in the wool production and it also shows an high value for the meat consumption¹⁰. The pig's raising at *Ortona* during the Angevine and the first Aragonese period could indicate both a supply qualitative improvement and an economical decay: it was not convenient to keep the pigs until the third year of life when they didn't grow on. They were killed within the first or the second year of life¹¹.

The samples from *S. Lorenzo* are mostly composed of piglets bones (fig. 4-5). The fragments belonging to the cattle and to the sheep/goats are scarce and probably not intentionally discarded by the people of the settlement. An abundant quantitative of fowl's remains seems to demonstrate a spread poultry breeding. The two domestic species were raised on the site as the kill-off patterns show: both neonatal, young and adult individuals are attested. For the pigs (fig. 6) it's possible to observe a large presence of animals below the 7 months, some fetuses and juvenile specimens (figg. 7-8); they rarely are over the one year of life. This could be explained or with an increment of the quantitative and qualitative people's demand or, otherwise, with a demographic decline and a consequent general impoverishment. The pig, for its fertility, is one of more convenient species to raise for meat supplying. When they reach two or three years of life, they furnish the biggest possible quantitative of meat. A very early killing could mean an incapacity to maintain over the animals.

At *Apigliano* (figg. 9-10) it's possible to observe that ovines were clearly prevalent, with an increment of cattle remains during the 11th century probably for the exigencies of ploughing and for an increment of agricultural activity. During the 11th century the sheep/goat keeping was firstly finalized to meat and wool production (fig. 11). For the pigs a larger demand of young individuals (below of one year) is attested, probably for the necessity of procuring an immediate quantitative of meat.

The Game

The rare wild animal remains from the three sites show that the game didn't affect the human economy or diet of the rural people. Their total percentage is about of 1% (fig. 12). The rural people could integrate their diet with occasional preys as hedgehogs (a mandible of this little mammal from *Apigliano* has butchering marks on the condyle), hares and foxes. The deer's bones are not numerous: they are fragments of antlers gathered and used as raw material for the handicraft necessities.

The Fortified Settlements

Bone's samples from fortified sites are less frequent. For the *Apulia* it's possible to consider only a substantial quantitative of faunal remains (4764 identified fragments) from the *castrum* of *Vaccarizza*. They dated from the late Byzantine Age (10th cent.) to the late Norman age (13th cent.). Originally *Vaccarizza* was a Byzantine castle with an urban expansion that gave to the centre the appellation of *civitas* during the 12th century. It is one of the best known case of artificial hilltop settlement (*motta*), constructed by the Norman conquerors in Northern *Apulia*¹².

⁷ P. ARTHUR (ed.), *Da Apigliano a Martano. Tre anni di archeologia medievale (1997-1999)*, Galatina 1999.

⁸ G. VOLPE, *Herdonia romana, tardoantica e medievale alla luce dei recenti scavi*, in G. VOLPE (ed.), *Ortona X. Ricerche archeologiche a Herdonia (1993-1998)*, Bari 2000, pp. 507-554.

⁹ P. FAVIA, G. DE VENUTO, A. DI ZANNI, *Progetto di ricerca archeologica a San Lorenzo "in Carminiano" (Foggia). L'avvio dell'indagine e i primi risultati*, in A. GRAVINA (ed.), *Atti del 26° Convegno sulla Preistoria, Protostoria e Storia della Daunia* (San Severo 2005), San Severo 2006, pp. 533-568.

¹⁰ After S. PAYNE, *Kill-off patterns in sheep and goats: the mandibles from Aşvan Kale*, *AnatSt*, XXIII, 1973, pp. 281-303.

¹¹ After G. Bull, S. Payne, *Tooth eruption and epiphyseal fusion in pigs and wild boar*, in B. Wilson, C. Grigson, S. Payne (eds.), *Ageing and sexing animal bones from archaeological sites*, «B.A.R.», British Series, 109, 1982, Oxford, pp. 55-71. See G. DE VENUTO, *Reperti archeozoologici dal casale medievale di Ortona (FG)*, in *Atti del 4° Convegno Nazionale di Archeozoologia* (cit.), pp. 367-371.

¹² E. CIRELLI, GH. NOYÉ, *La cittadella bizantina e la motta castrale di Vaccarizza (scavi 1999-2002)*, in R. FIORILLO, P. PEDUTO (eds.), *Atti del III Congresso Nazionale di Archeologia Medievale* (Castello di Salerno, Complesso di S. Sofia, Salerno 2-5 ottobre 2003), Firenze 2003, pp. 481-486.

The faunal sample permits to observe some substantial differences between the Byzantine and the Norman animal's exploitation (fig. 13-14). In the first case, fowling and fish were an important contribute for the human sustenance. Later these animals become minority, and it's possible to observe a more consistent investment in species like pigs, sheep/goat and cattle.

During the Byzantine Age the consume of fowl was very high: this could be also demonstrate by some particular remains. Some metatarsus present a strange deformation of their diaphysis: it's not excluded that this is the effect of an intensive birds-breeding through the use of nooses in captivity (fig. 15). The consume of pigeons meat was attested too: it's difficult to say certainly if they were domestic or wild species as there isn't a substantial osteometric differences in the sample. It's interesting to observe the presence of wild birds like swans, pheasants and lapwings (*Vanellus vanellus*).

During the Norman Age there was a substantial increase of the meat demand as the mortality data demonstrate. In particular, in the Norman Age, the pattern of killing of the ovines evidences a drastic decrease of the milk and diary products, with a consequent increment of animals butchered in an adult age (figg. 16-17).

The pig's meat was the most important element of sustenance for the two historical phases, but, as the mortality data demonstrate, in the Byzantine age there was a more programmatic kill-off pattern. In fact the animals were butchered between the first and the third year when a good balance between the breeding expenses and the meat output was warranted. In the Norman period the great part of the pigs was killed when they were young (7 months), probably because the human group needs a consistent and immediate quantitative of good quality meat.

Conclusions

The gathered data are surely not sufficient to trace an exhaustive survey of the stock-raising during the Middle Ages in Apulia. Particularly there is no a complete typology of settlements with abundant zooarchaeological remains for reconstructing the whole hierarchic net of the 'consumption' and of the 'production' centres on the territory. It's even possible to define some preliminary economical models concerning the exploitation of the animal resources that in the future the research will can confirm or deny through the increment of analysed samples.

For the first centuries of the Late Middle Age (10th-13th cent.), in Apulia, a balanced presence of the two principal domestic species seems to be attested: both sheep/goats and pigs contributed to satisfy the primary (meat) and the secondary (milk and wool) exigencies of the rural people, probably not crystallized in specific ways of production. They were capable to furnish an adequate supply to their internal demand and to the nearest privileged administrative sites like cities, castles and monasteries. An exception could be represented by S. Lorenzo, probably a specialized pig's raising centre, for the exigencies of the near *Domus Pantani*, a residential building of Frederic II¹³. The real distinctive elements of the diet of these latter is the more frequent resort to the dairy products and to the fishing. Generally the game seems to be an important activity only in that sites where the Crown lived: the data from the *Lagopesole* castle, in *Basilicata*, a Regal Angevin Residence, show a consistent presence of deers, red deers, wild boars and hares¹⁴. The big game was absent in *Vaccarizza*, where the most common preys were fowling and hares. Apulia is not forested or mountainous; the most diffused habitat was the lowland for the grain growing with the alternation of the pasture and of the Mediterranean bush¹⁵. The historical sources report that the principal wild animals resources came from the region of Vulture in Basilicata. But some notices, for the Aragonese's period, attest the presence of herds of deers in the wood of *Incoronata*, near the city of Foggia and the *casale* of S. Lorenzo¹⁶. The absence of this species in the archaeozoological sample from this latter site could further demonstrate the elitist character of the game activity.

A more specialized stock-raising activity seems to characterize the region between the 14th and the 15th century, when the territory was marked by the rapid following of two dynasties, the Angevins and the Aragoneses. If the first continued to sustain the agricultural system given to the rural district by Frederic II with the spread of the *massariciae* structures, the second contributed to a reduction of the countryside peopling¹⁷. As the *Ordona* sample could demonstrate, in the second half of the 14th century only the more remunerative activities, like the wool production, were incremented. A site as S. Lorenzo, probably not

¹³ A recent study about the *Domus Pantani* and its territory is in P. FAVIA, C. ANNESE, G. DE VENUTO, A. V. ROMANO, *Insedimenti e microsistemi territoriali nel Tavoliere di Puglia in età romana e medievale: l'indagine archeologica del 2006 nei siti di S. Lorenzo in Carminiano e di Masseria Pantano*, in A. GRAVINA (ed.), *Atti del 27° Convegno sulla Preistoria, Protostoria e Storia della Daunia* (San Severo 2006), San Severo c.s.

¹⁴ R. FIORILLO, *La tavola dei D'Angiò. Analisi archeologica di una spazzatura reale, Castello di Lagopesole (1266-1315)*, Firenze 2005.

¹⁵ See D. NOVEMBRE, *L'ambiente fisico*, in G. MUSCA (ed.), *Uomo e ambiente nel Mezzogiorno normanno-svevo*, Atti delle ottave giornate normanno-sveve (Bari, 20 – 23 ottobre 1987), Bari 1989, pp. 21-48.

¹⁶ See A. HASELOFF, *Architettura sveva nell'Italia meridionale*, Bari 1992², pp. 54-55.

¹⁷ R. LICINIO, *Uomini e terre nella Puglia medievale*, Bari 1983; Id., *Masserie medievali. Masserie, massari e carestie da Federico II alla Dogana delle pecore*, Bari 1998.

included in the most haunted routes of the great transhumance, was definitively abandoned as the fillings of the grain pits should confirm. In this direction the analyse of the pig's remains could lead to a not usual interpretation (fig. 18): in a context of economical decline, the high percentage of animal killed below the 7 months of life doesn't reflect a privileged condition (supply of fresh and tender meat), but it could be the mirror of a not programmed stock-raising activity, inattentive to the most profitable ways of production. Only in the site of *Vaccarizza*, in fact, during the second half of the 11th century, corresponding to an increase of the settlement, the animals were killed in conformity with an intensive pattern of killing.

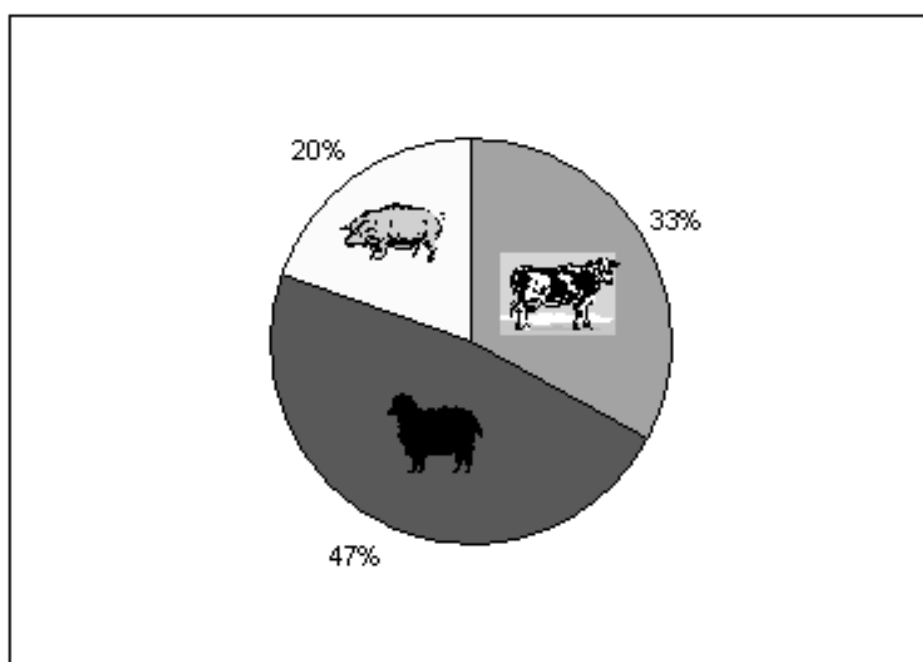


Fig 1 – *Ordoná*, 13th-15th century: percentages of NISP of the three principal domestic species (2375 identified fragments).

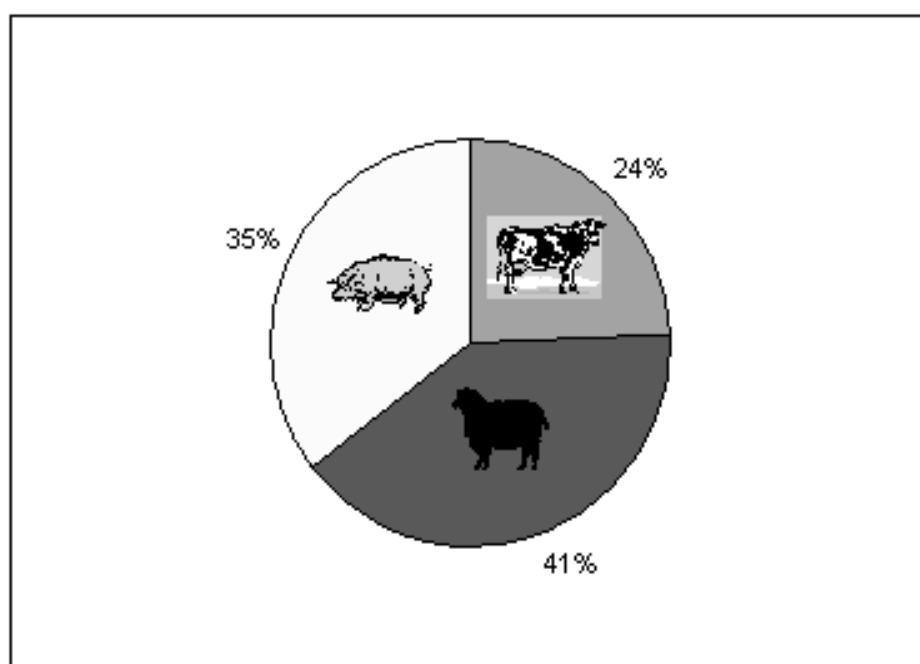


Fig 2 – *Ordoná*, 13th-15th century: percentages of MNI of the three principal domestic species (189 individuals).

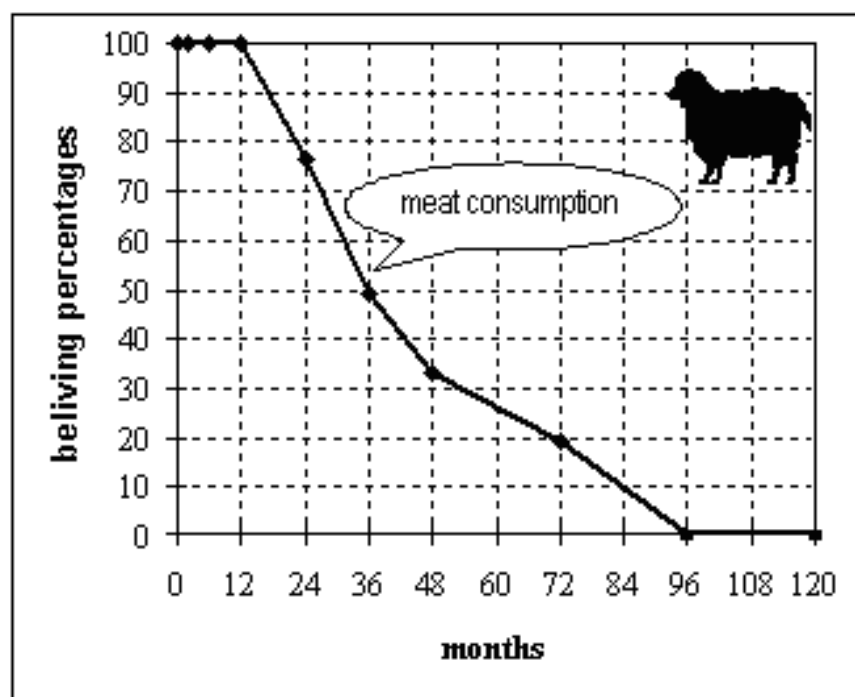


Fig 3 – *Ordon*, 13th-15th century: kill-off pattern of sheep/goat, after Payne 1973.

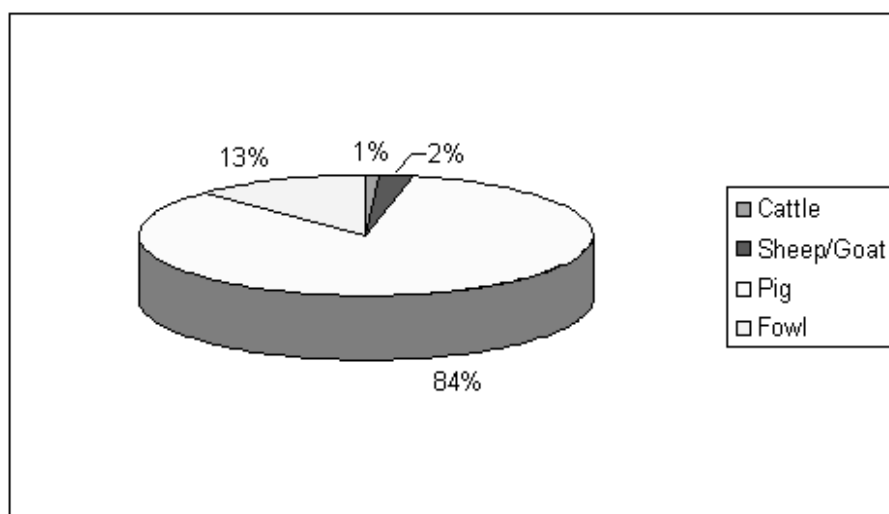


Fig 4 – *S. Lorenzo in Carminiano*, 13th-14th century: percentages of NISP of the three principal domestic species (2011 identified fragments).

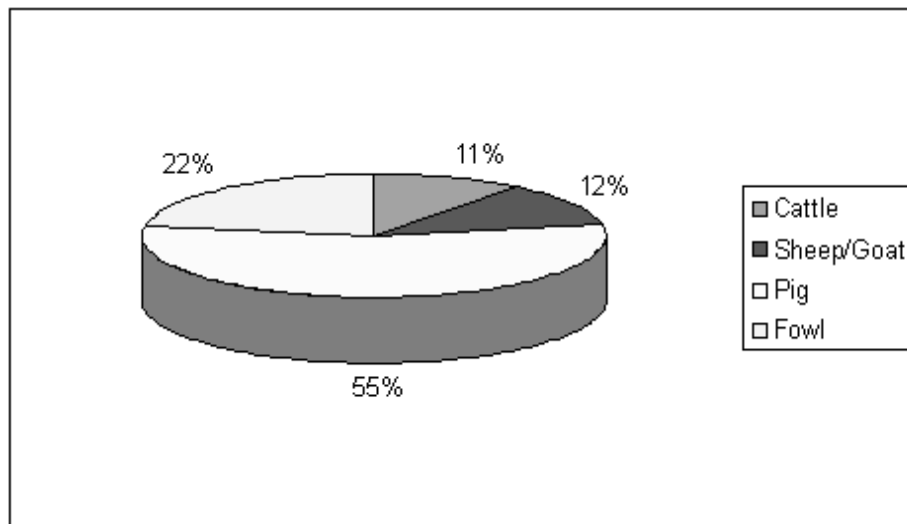


Fig 5 – *S. Lorenzo in Carminiano*, 13th-14th century: percentages of MNI of the three principal domestic species (104 individuals).

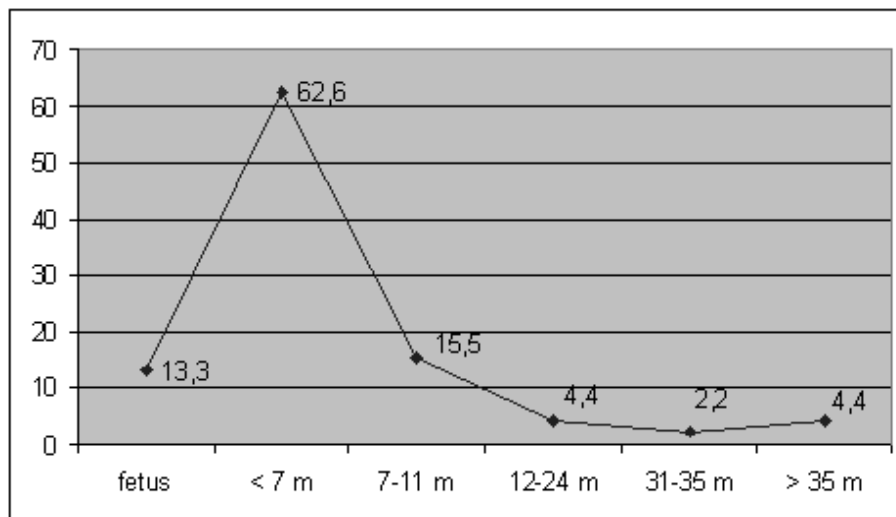


Fig. 6 – *S. Lorenzo in Carminiano*, 13th-14th century: pig's kill-off pattern (45 individuals).



Fig. 7 – S. Lorenzo in Carminiano, 13th-14th century: pig's fetuses bones.



Fig. 8 – *S. Lorenzo in Carminiano*, 13th-14th century: below 7 months pig's mandibles.

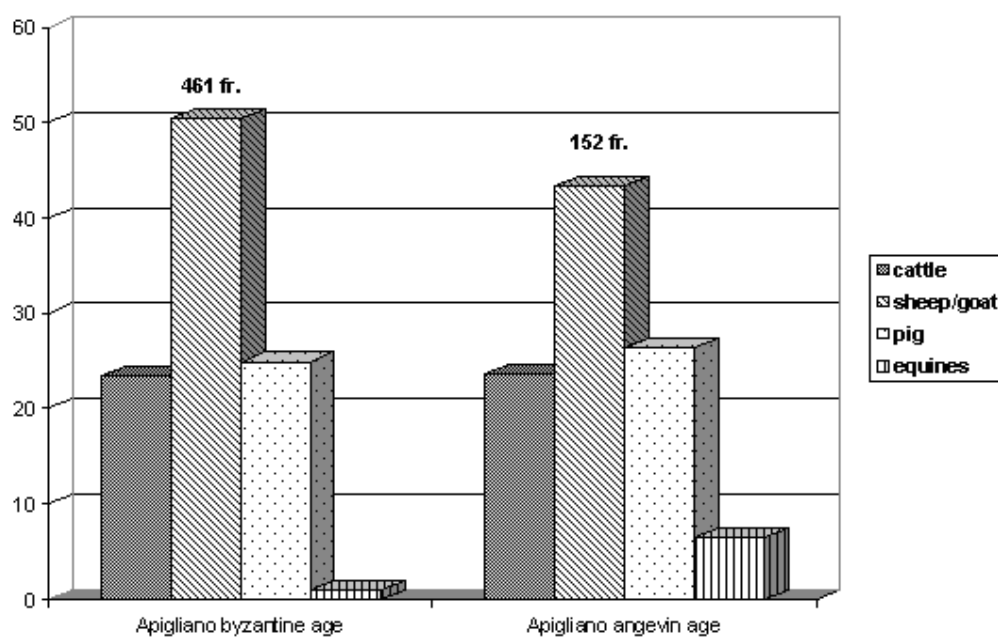


Fig. 9 – *Apigliano*, Medieval Age: NISP of principal domestic species.

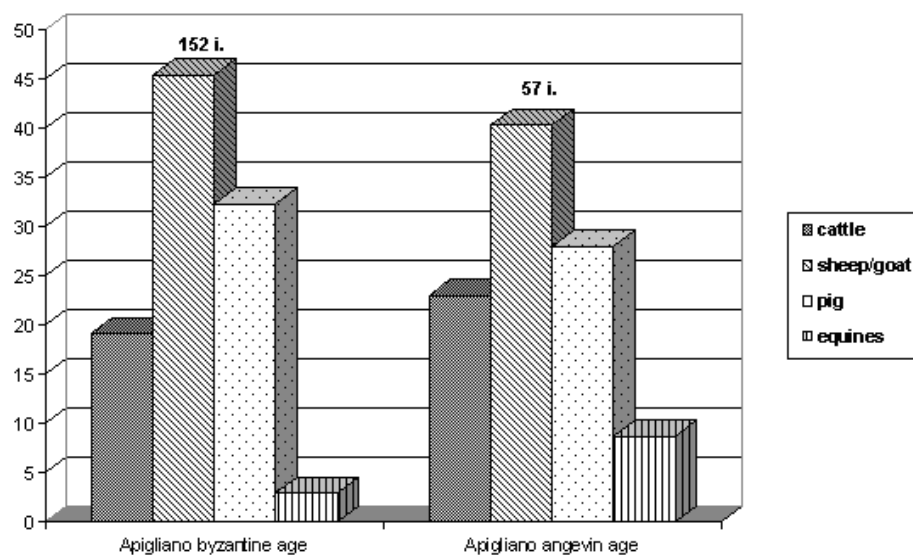


Fig. 10 – *Apigliano*, Medieval Age: MNI of principal domestic species.

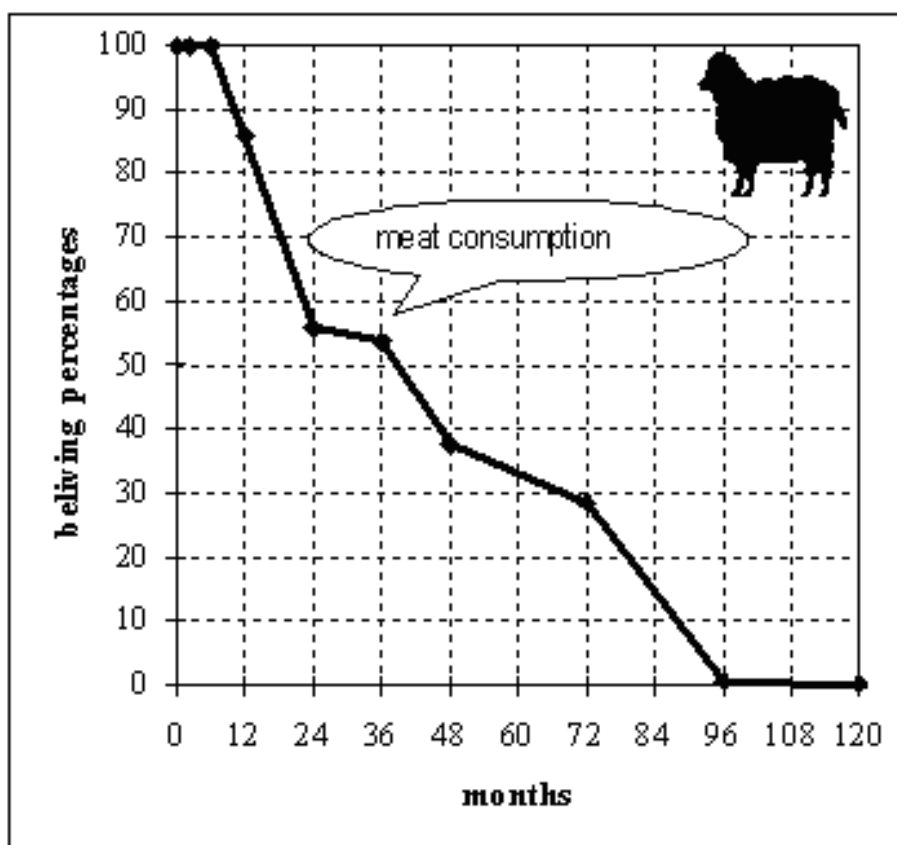


Fig. 11 – *Apigliano*, 11th cent.: sheep/goat kill-off pattern, after Payne 1973.

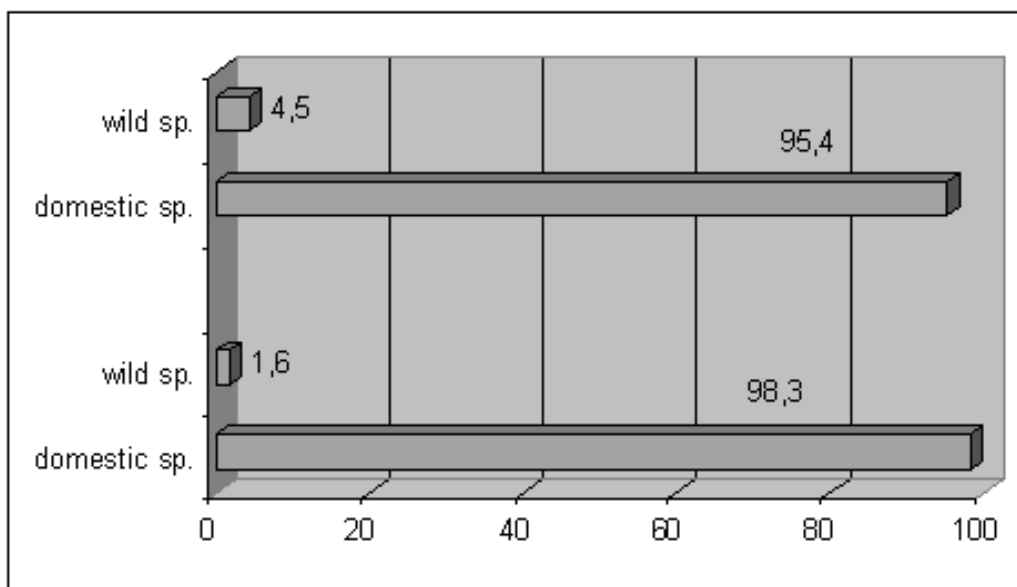


Fig. 12 – Ratio between domestic and wild animals in *S. Lorenzo in Carminiano*, 13th-14th century (lower diagram: NISP; upper diagram: MNI).

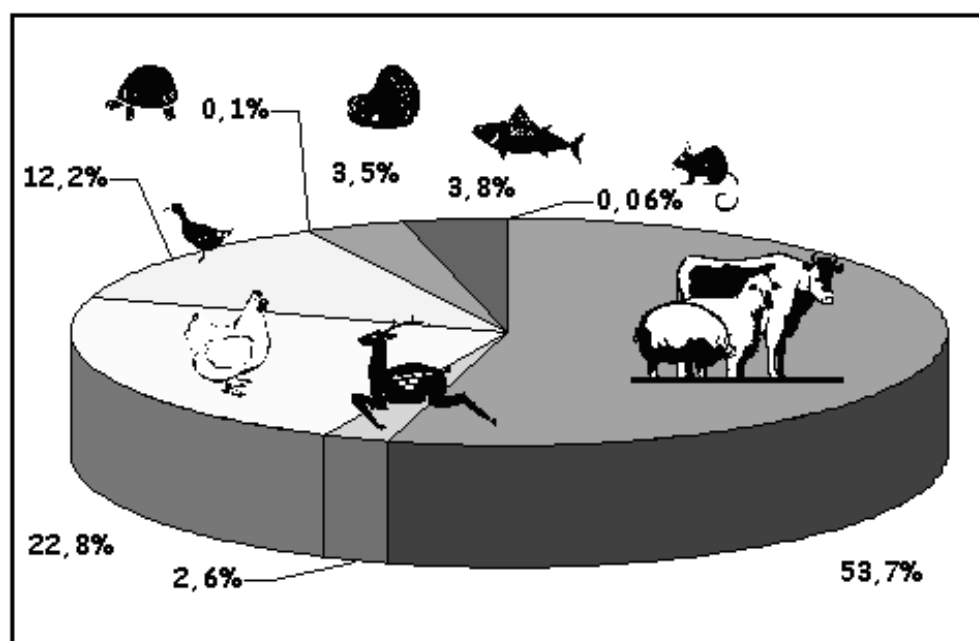


Fig. 13 – *Vaccarizza*, 10th-11th century: graph with the indication of the percentages of the species attested (2881 identified fragments).

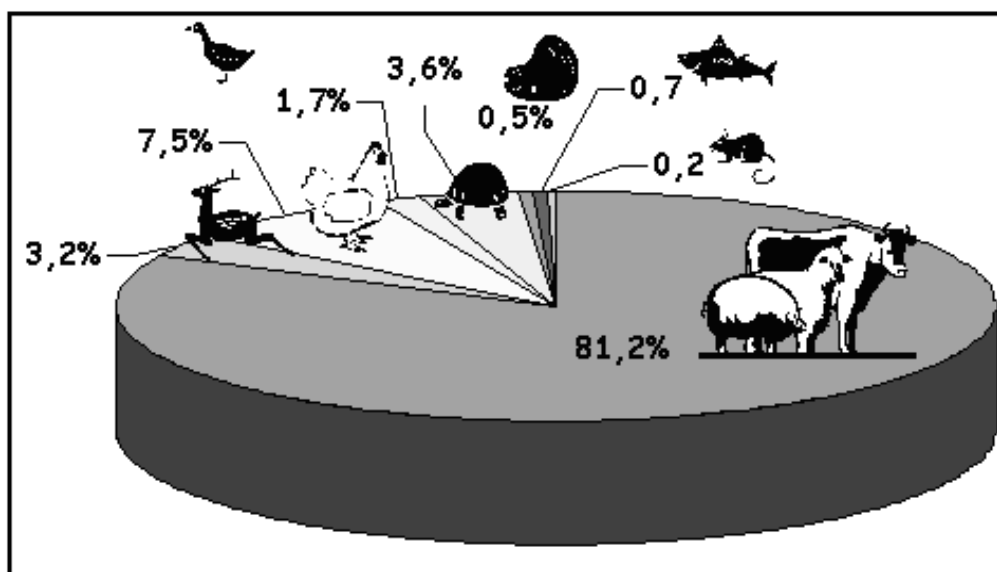


Fig. 14 – Vaccarizza, 11th-13th century: graph with the indication of the percentages of the species attested (2161 identified fragments).



Fig. 15 – Vaccarizza, 10th-11th century: fowl's metatarsus with the deformation of the diaphysis.

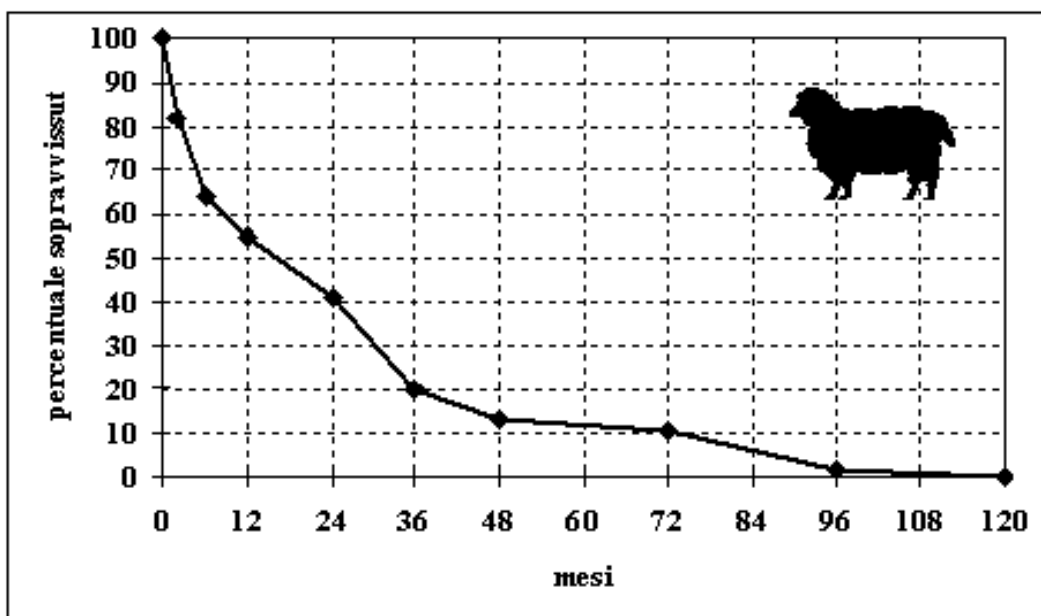


Fig. 16 – Vaccarizza, 10th-11th century: sheep/goat kill-off pattern, after Payne 1973.

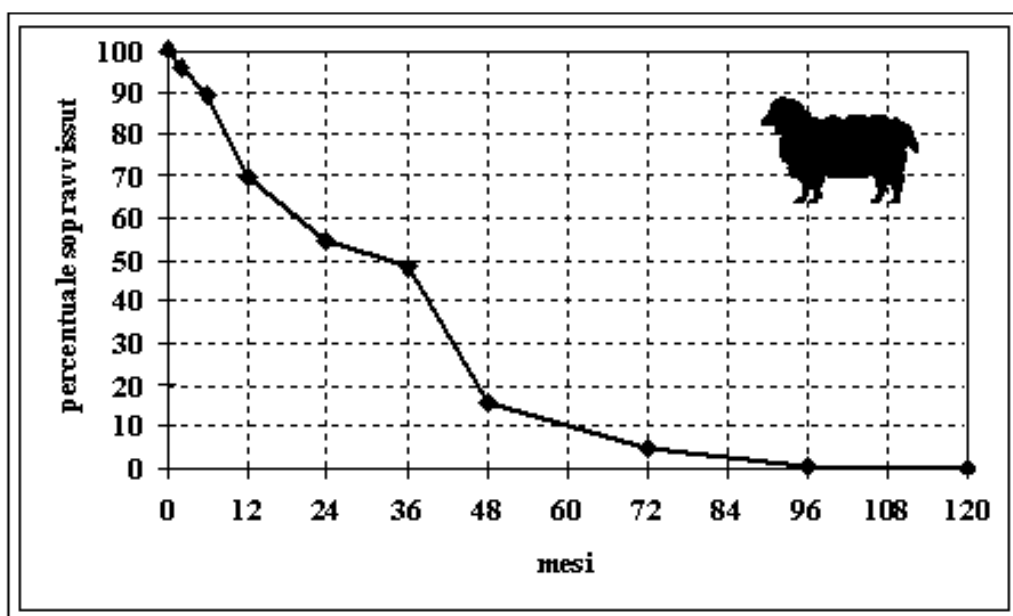


Fig. 17 – Vaccarizza, 11th-13th century: sheep/goat kill-off pattern, after Payne 1973.

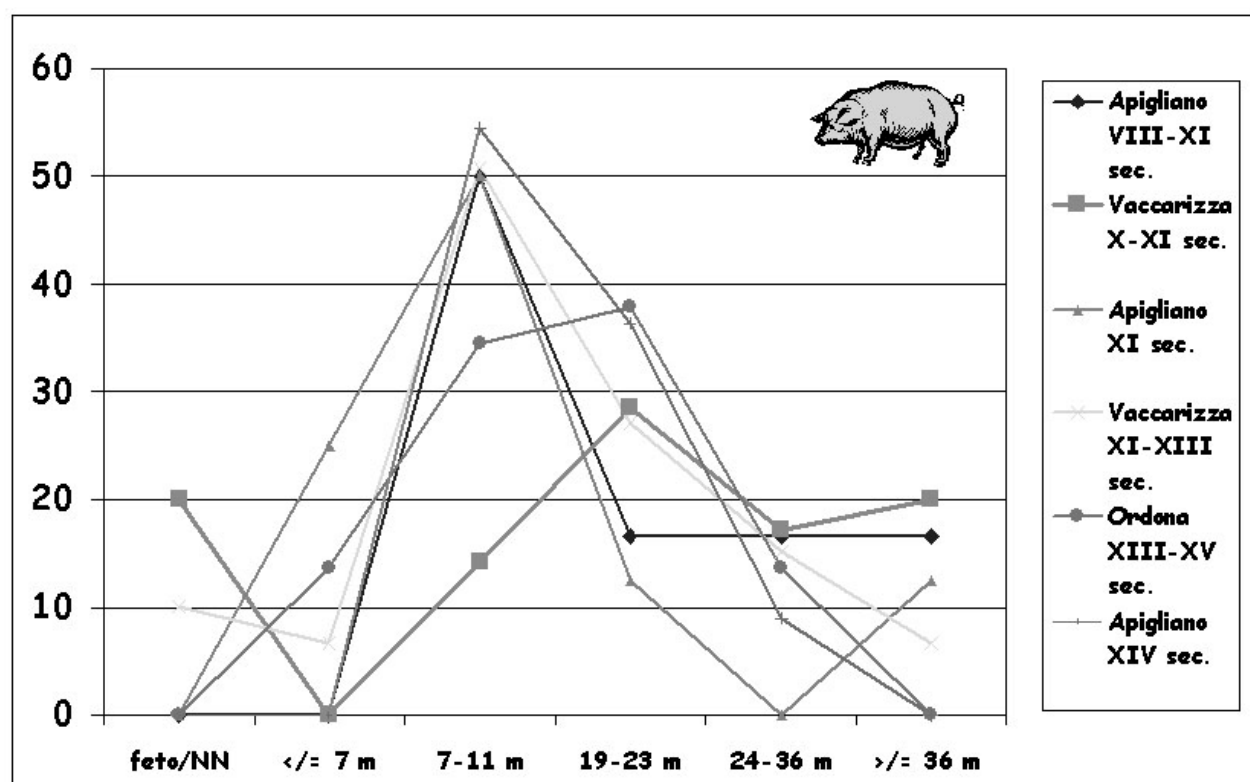


Fig. 18 – Pig's kill-off pattern in the Apulian medieval sites.