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ALIMENTATION IN ROMAN DACIA

-ABSTRACT OF THE PHD THESIS-

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Key words:

- Alimentation
- Roman Dacia
- Foods and drinks
- Cereal cultivation
- Animal breeding
- Viticulture
- Beekeeping
- Hunting and fishing
- Imported foods
- Consumption
- Social life

Introduction

1. State of research

Alimentation, foods, culinary customs, recipes of the ancient world are fascinating for the modern man. A lot of studies from the XX-XXIth century deal with these subjects. We can make reference here to: ***Patrick Faas,*** *Around the Table of the Romans: Food and Feasting in Ancient Rome* (2002), ***Ilaria Gozzini Giacosa,*** *A Taste of Ancient Rome* (1992), ***Mark Grant,*** *Roman Cookery: Ancient Recipes for Modern Kitchens* (1999); ***Andrew Dalby & Sally Grainger***, *The Classical Cookbook* (1996); ***Sally Grainger***, *Cooking Apicius: Roman Recipes for Today* (2006); ***Jacques André***, *L´alimentation et la cuisine á Rome* (1981); ***Andrew Dalby***, *Food in the Ancient World from A to Z*; ***H. E. M. Cool,*** *Eating and drinking in Roman Britain* (2006); ***D. L. Thurmond,*** *A handbook of food processing in classical Rome* (2006); ***J. P. Alcock,*** *Food in the ancient world* (2006).

Research about alimentation in Roman Dacia is in a very inchoate state and there are no special studies dedicated to this theme. To deal with such a subject we need to approach some secondary domains like food production (agriculture, beekeeping, viticulture, animal breeding, hunting and fishing), salt mines, imported foods, tableware and kitchenware, epigraphical and archaeological

sources. Because there are no special studies dealing entirely with this subject, we have to use articles or references from various studies, like: Popa D., *Villae, vici, pagi. Aşezările rurale din Dacia romană intracarpatică,* 2002*;* Tătulea C. M., *Contribuţii la cunoaşterea tipologiei, evoluţiei şi răspândirii brăzdarelor romane în Dacia. Depozitul de fiare de plug de la Ghidici,* în *Oltenia* 4,1982; Gudea Al., *Contribuţii la istoria economică a Daciei romane (Studiu arheozoologic),* 2007; Gudea N., *Aşezări rurale în Dacia romană (106-275 p. Chr). Schiță pentru o istorie a agriculturii și satului daco-roman,* Oradea, 2008; Ardeț A., *Amforele din Dacia romană,* Timișoara, 2006; Gudea Al. I., *Soldatul roman în Dacia (106- 275 p. Chr.). Studiu de arheozoologie privind creşterea animalelor şi regimul alimentar în armata romană,* Cluj-Napoca, 2009.

2. Methodology

This study is trying to offer a general view, based on the existing information, about agriculture, viticulture, animal breeding, epigraphical and archaeological sources, paleo-faunistical studies in Dacia, because all these are secondary sources for alimentation in the province. The project is structured in introduction and five big chapters, each with subchapters.

Due to the fact that research and publishing have their shortages and we don't have sufficient information, this study is trying to draw attention to a problem, not to solve it. It is very important for the subsequent research the publishing (as complete and fast as posible) of discoveries. Attention must be given also to small finds, like carbonized seeds and carpological and paleo-faunistical studies must be carried out. The situation at present is not due to the lack of descoveries, but to the deficient research and the lack of publishing. The rectification of these deficiencies will offer material for a more complete study of alimentation.

3. Sources

Because there are no written ancient sources, in studying the situation in Dacia we have to resort to epigraphical sources (the waxed tablets, especially Tab. Cer. D XVI, the will from Sucidava) and mainly archaeological sources (*Cella vinaria* from Potaissa, farms, particularly rural farms, agricultural implements, tableware and kitchenware, carpological material, archaeo-zoological studies, amphoras).

Even if sometimes incomplete, these are important sources in attempting to make a sketch of alimentation in Roman Dacia.

I. Alimentation of the Romans

1. Literary and archaeological sources

Ancient authors offer us precious information about the development of agriculture, alimentation, cereals, vegetables, fruits, agricultural implements, animal breeding, even recipes: ***Cato the Elder,***

De agri cultura; ***Marcus Terentius Varro,*** *Res rusticae*; ***Vergiliu,*** *Georgica*; ***Columella***, *De re rustica*; ***Plinius the Elder,*** *Naturalis Historia*; ***Apicius,*** *De re coquinaria*; ***Petronius,*** *Satyricon* (*Cina Trimalchionis).*

Archaeological research offer important information about alimentation, customs, tableware. Abroad a lot more attention has been given to carpological, paleo-faunistical studies, to the study of the content of amphoras or other containers. For Britain, for example, there is an on-line data base which contains all the carpological descoveries: http://intarch.ac.uk/journal/issue1/tomlinson_index.html. An other very important data base is dealing with the houses from Pompeii: www.stoa.org/projects/ph/home. More and more attention is given to underwater archaeology, with the help of which often entire cargoes of sunken ancient boats can be recovered. Sometimes whole amphoras or other jars still keep the ancient product (oil, *garum*, wine, fish products) and studying them can offer imformation about alimentation, but also about trade.

2. General aspects of alimentation

a.) Historical background

After the establishment of Rome, in the time of Romulus, the cuisine was military, crude and lacking elegance. After the marriage with the Sabine women, the Romans remained soldiers in war time, but in peace they started to grow vegetables. The daily meal consisted of cereals, *puls* and vegetables.

In the Republican period Romans conquered broad territories, mainly for fertile agricultural lands. The Greek cuisine had a great influence over the Roman. By conquering the west Mediterranean Romans gained control of trade routs towards India and China, and spices were introduced to Rome.[1]

Roman cuisine gradually abandoned the virtues of simplicity, making way for the cosmopolitism of Imperial Rome.[2]

A lot has changed with christianity. Roman gastronomy didn't collapse because of the alimentary laws and the change-over of a culture that took shape in over o thousend years did not took place over night. Christianity considered delicacies a way towards hell and curse.[3]

b). The origins of food

Ancient cuisine was rather diversified. Various types of ***fish, meat*** (pork, lamb, chicken, mutton, goose, dove, rabbit, boar, partridge, pheasant, venison, deer, trush, snail, bacon, sausages, ham), ***vegetables*** (asparagus, beet, cabbage, carrots, artichoke, horseradish, onion, leek, cucumber,

[1] Faas 1994, 17-19
[2] Faas 1994, 26-29
[3] Faas 1994, 35-37

mushrooms, truffles, bean, lupin, lentil, pea, chickpea), ***milk, cheese, fruits*** (apples, pears, pomegranate, quince, plums, blackberry, mulberry, cherry, watermelon, crenshaw, nuts, almonds, dates, olives, berries, grapes, figs), ***cereals*** (barley, wheat, millet, oat, rye, rice), ***puls, bread*** were consumed.

c). Cooking

The Latin term for cook is *"coquus"* or *"cocus"*, but also *"coctor",* and the chef is called *"archimagirus", "praepositus cocorum", "supra cocos".*

After the dissemination of luxurious meals increased the popularity of specialized cooks. Due to the culinary extravagances of the Imperial period cooks could affirm their mastery and cooking became an art.[4]

Plautus gave information about cooks. Pliniu, Plautus and Terentius tell us that cooks were hired from the *macellum,* also called *forum coquinum.*

In the Greek comedies cooks were marked as boastful, thieves, proud of their craft, in rivalry with each other. Roman cooks were also boastful, proud of their craft, thieves, treacherous, quarrelsome.[5]

Two vital elements in the cooking process were water and fire. After the building of the aqueducts, many Roman houses were connected to the cities water system, ensureing running water for kitchens and baths. Besides the walled ovens were also used portable ovens and furnaces. Roman cooks had numerous kitchen equipment: knives, trencher, meat forks, soup spoons, sieve, grater, skewer, nutcracker, jugs, all kind of caldrons and pans.[6]

d). Savours

The basic savours were those that we know today: ***sour*** (lemon, vinegar), ***salty*** (salt, brine, *garum,* different fish sauces), ***sweet*** (honey) and ***bitter***. From the four savours the most widespread was the sweet. Bitter wasn't very loved and cooks usualy tried to put it aback or to soothe it.

e). Herbs and spices

Latin literature tells of many ***herbs***, like: lovage, cumin, rue, mint, basil, celery, parsley, marjoram, silphium, thyme, dill, fennel, anise, laurel, myrtle, mustard, poppy, saffron, rosemary, sage, sesame.

The most used ***spices*** were pepper, cinnamon, cardamom, ginger.

f). Other ingredients

Other ingredients used in the Roman kitchen were ***olive oil***, ***animal fat***, ***parfume***, ***cheese***.

g). *Tavernae* and inns

[4] Gaskins Harcum 1914, 5-14
[5] Gaskins Harcum 1914, 39-50
[6] Faas 1994, 128-134

Rome had a lot of taverns and inns. ***Taverns*** (*tabernae*) could be found near the baths, libraries and public buildings. Food at the taverns was less spectacular than that of the large meals of the rich, but the owner prepared it fresh. Typical dishes were *puls*, beans, peas, lentil.

Most frecqunetly inns were named *popina* and in the countryside *caupona*. There were also more respectable restaurants, *cenationes*, which often had beautiful gradens, pools and fountains.[7]

h). *Triclinia* and ancient dining rooms

After the development of the Roman house with the Greek architectural elements, dinner was served in the ***triclinium***, where feasts were organized. In Greek *triclinium* means „three tables". The couches were arranged in a hourseshoe shape and on every couch was room for three people.[8]

Often Romans dined outside, *triclinia* were surrounded with gorgeous gardens. An ideal Roman dinner party included nine guests, in honor of the nine muses.

i). Table settings

A hierarchical model was respected when sitting on the couches, which respected the relationships between people in Rome. The central couch A was for the honored guest. In the right was couch B for the host and his family. In left was couch C for the rest of the guests.[9]

The underworld was simbolized by the floor, the heaven by the ceiling, *triclinium* stood for the Roman society, the gods lived in the *lararium* and earth was simbolized by the table.

j). Customs and traditions

In the upper classes, on occasion of formal dinners, a proper clothing, named *toga cenatoris*, was indispensable.

Guests steped in the dining room with their right foot, to avoid bad luck. Than, as a ritual purification, the hands of the guest were washed. Feet were washed by a slave, with hot water in winter and cold in summer. It was common to wear wreaths and parfume.[10]

Behind the scenes of every successful dinner party was a whole team of people. Slaves not only served and swept up, but also recited poems, seng, played, danced, juggled. [11]

k). Tableware

Roman tableware was an important form of artistic expression. The raw material varied, from the cheapest wooden pieces to the finest chinaware. The most common were those of terracotta. Bronze and glass vesels had a special status. Rich people, however, prefered gold and silver pieces.[12]

k). Main dishes

[7] Faas 1994, 41-45; Gozzini Giacosa 1992, 207-209; Cowell 1961, 140-141
[8] Faas 1994, 45-46; Ellis 1995, 165-166; Dunbabin 1998, 89
[9] Faas 1994, 57-60
[10] Faas 1994, 49-50
[11] Faas 1994, 68-70
[12] Faas 1994, 73

Traditionaly, in the morning was served a breakfast, named *iantaculum* or *ientaculum*, at noon a little snack and in the evening the main meal.

At ***breakfast*** *(iantaculum)* people used to consume bread dipped in milk or undiluated wine, or curd cheese with honey, olives, raisins, fruits or nuts; at ***lunch*** (*prandium*) bread, *puls*, porridge, cold meat or fish, or leftovers from the previous day's dinner. After *prandium* the last tasks were accomplished, followed by a visit to the baths (public or private).[13]

The most important meal for all the social classes was the ***dinner.*** In the Republican period *cena* consisted of a main dish and a dessert with fruits or seafood. Untill the end of the Republic dinner was served in three parts: starters (*gustatio*), main course (*cena* or *primae mensae)* and dessert(*secundae mensae*). After dining came the drinking party, *comissatio.*[14]

Starters (*promulsis* and *gustatio*) were supposed to aid digestion. They might consist of oysters, marinated octopus, marinated vegetables, cauliflower, onion, garlic, snails, sea urchins, wild mushrooms and *salsamentum*: ham, bacon, salted fish, but also sausages, fish and meatballs, small fish and birds, raw or boiled vegetables, like asparagus, pea, bean, carrot, lettuce, chicory, radishes, cucumber.[15]

Main course(*mensa prima*) was also called ***caput cenae***, „ head of the dinner". It could be served a hearty soup with vegetables and boiled meat, a plain *puls* or a dish of legumes, a *minutal* or expensive delicacies such as parrot-brains, moray eel livers, sow's wombs, sensational roasts like pelican, giraffe, bear, crane. No food was complete without it's very flavored and seasoned sauce.[16]

Dessert (*mensa secunda*) could consist of apples, pomegranates, pears, quinces, figs, dates, peaches, apricots, plums, cherries, raspberries, strawberries, grapes, walnuts, hazelnuts, beechnuts, almonds, pine kernels, pistachios, sweet chestnuts. Sweet nut cakes were offered, too, such as marzipan, sesame-seed or poppy seed buns with honey and filo pastry with crushed nuts.[17]

Romans adopted the practice of the drinking bout from the Greeks, who called it the *symposium.* The Roman *comissatio* followed much the same rules as the *symposium.* The Romans had many more types of vessels for drinking than for food. The *comissatio,* or *symposium,* did not consist solely of singing and drinking. The guests entertained one another with intellectual diversions such as solving riddles and inventing rhymes. Telling a story or reciting a poem were also appreciated. There were other games, such as draughts, backgammon and dice.[18]

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[13] Faas 1994, 38-40; Lascu 1965, 216-217; *http://en.wikipedia.org/wiki/Roman_cuisine ; http://www.romans-in-Britain.org.uk/arl_roman_cooking-pt1.htm*
[14] Faas 1994, 40-41
[15] Faas 1994, 78-79; *http://www.romans-in-Britain.org.uk/arl_roman_cooking_pt1.htm ;* Lowrance 1939, 89
[16] Faas 1994, 79-81
[17] Faas 1994, 81-83; *http://www.romans-in-Britain.org.uk/arl_roman_cooking_pt1.htm*
[18] Faas 1994, 87-91

Aside from the pleasures of food, wine, scent, music and entertainment, it was customary to spoil the guests with little ***gifts,*** called *apophoreta*, which could consist of food, objects, art, animals and slaves.[19]

m). Peculiarities of the Roman kitchen

In the majority of cases meat was boiled to restore tenderness of dried or salted meat, but boiling was necessary in the case of game, too, because of the hard meat. Another peculiarity of the Roman kitchen was the frequency of sauces, which accompanied vegetables, meat, game, fish, even fruits. Especialy for meat were a lot of varieties of cold or hot sauces.

Other peculiarity is the excessiv useing of flavored substances. To these we can add the frequent use of honey, which was put in almost all kinds of dishes. Often on the same dish different savors were present: honey, vinegar, pepper. Even on sweets they used to strew pepper.[20]

3. Recipes

In the last decades the interest for Roman recipes constantly grew, some people tried to adapt them to modern kitchens. Some researchers (like Sally Grainger) made culinary experiments trying to get the right proportion of diferent ingredients in hope of recreating tastes from 2000 years ago.

Now we can find Roman recipes (some adapted to the modern kitchen) in diferent books (Sally Grainger, *Cooking Apicius. Roman recipes for today*, Prospect Books, Devon, 2006) but also on-line (http://www.romans-in-britain.org.uk/url_roman_cooking_pt1.htm).

In this study are mentioned only o few recipes tried by us in our own kitchen and our impressions about the tastes of the Roman cuisine.

II. Food production

1. Cereals

a). General aspects of Roman agriculture

The first Romans were animal breeders and learned agriculture from the Sabines and the Etruscans, who had advanced knowledge about irrigation and soil draining.[21]

Cultivation evolved during the Republic, mainly because of the economical changes. Agriculture became specialized, detined to produce profit. [22]

Under the Empire agriculture made considerable progresses. Techniques have been emproved, irrigation and fertilization were used on a large-scale.[23]

[19] Faas 1994, 99-101
[20] Lascu 1965, 249-253
[21] Robert 2007, 127
[22] Robert 2007, 128, 131
[23] Louis 1927, 267

Roman peasants used from ancient times manure. Cato the Elder said that the permanent works on a farm were the slaves duty. It was a common practice to lease seasonal works like harvesting, rakeing, vintage, harvesting olives.

The owner ususaly lived in the city and administered the farm with the help of a *vilicus*, a smarter and lettered slave. The land was the main productive mean. It was worked by slaves, but at the seasonal works were also used free workers and peasants. The economical unit described by Cato wasn't self-sufficient, buying thinks that he needed and selling the surplus. In the exchange of products money was used.

b). Agriculture in Dacia

Romania has a balanced relief, the mountains are roamed by numerous passes making possible transcarpathian connections. Due to the altitude, dominant relief forms and natural conditions, almost the whole country is habitable. The climate is moderate continental, propitious for living conditions. A peculiarity of the territory is the rich water system (rivers, lakes). Almost all the streams are collected by the Danube. The vegetation is tiered by altitude. Forests occupy the broadest part of the country. The soils, particular to the temperate climate, have a medium or higy productivity. [24]

The basic occupation of the Dacians were agriculture and animal breeding. Population growth leads to the increase of cultivated acreages, to the improvement of tools and cultivating techniques.

Evidence for agricultural practices in Dacia are also the numerous discoveries of agricultural implements, a fragment of funerary aedicula from Şeica Mică, Sibiu county, that shows a peasant ploughing with a plough pulled by two oxes, three wooden barrels from Tibiscum containing carbonized wheat, barley and hemp seeds, the waxed tablet with the shopping list for a banquet (CIL III, TabCer XV= IDR I, TabCerD XVI) which makes reference to salad and onion. [25]

c). Types of ownership, cultivated fields

The basis of the wealth of the rich and of the wealth of the Empire was the land. Seneca, Plinius and Columella criticised the existence of huge properties. The term of *latifundium* appears in the literary sources in the middle of the first century A.D.

Probably the properties of the very rich did not form a huge unitary domain, rather they were made of several smaller parts, scattered in different areas.

For the administration and working of the properties the owners had more options. One would be the domains based on the work of the slaves, where slaves were used as labour force but also in administration. When needed, temporary work, of slaves or freemen, was also used. The owner could administer the farm with a *vilicus* or he could lease it.

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[24] *Istoria românilor,*I, 4-8, 13-16

[25] Ţeposu- Marinescu 1982, 217, nr. 74; Moga, Benea 1977, 326

After the Roman conquest of Dacia, along with the numerous military sent in the province came a large number of civilians. The colonial organization was introduced in Dacia, addopting it to the local characteristics. The legal status of the soil was probably *ager publicus*, as in the case of all the conquered areas. Gradually the better lands were divided between the settlers. The pastures and mines were in the imperial propriety. [26]

In Roman Dacia, besides the large imperial domains, prevailed the small and middle sized freeholds and the *villa rustica* type private property.[27]

d). The cultivation of cereals

Cereals, rich in carbohydrates, were very important in alimentation. The cereal crop could be kept for a long period if fended from gnawers and diseases, and could be used in many different ways. Even if the Romans practiced a polyculture of cereals, wheat was always the basis for Rome. The main cereal species were wheat and barley. The oldest cultivated cereal varieties were barley and millet. If in the Western Mediterranean the first place in cereal cultivation is occupied by wheat, in the eastern part, especially in Greece, barley prevails.[28]

Cereals can be kept for a long time but their cultivation needs intensive labour. The most widespread cereal in the prehistoric agriculture of the Old World was *Triticum L.* Wheat played a very important role in the diet of men, especially because of it's nutrient quality. Other frequently used cereals were: barley, millet, oat, rye, lentil, rice.

In Dacia the cultivated species are little known. Dacians cultivated three types of wheat, a lot of barley, two-rowed barley, rye, bean, pea, lentil, garlic, mustard, poppy, chickpea, textile plants (like hemp). The discovery of fodder plant seeds in settlements and fortifications show the existence of fodder supplies for domestic animals. Probably were cultivated all the known cereals from Roman Europe, vegetables, fruit-trees, textile plants.[29]

e). The Roman *villa rustica*

Ancient authors like Cato, Varro and Columella give us information about Roman *villa*s. Based on these sources we can see an evolution from the relatively small, simple *villa*s to the those bigger and more luxurious. The literature speaks about two categories of *villa*s: *villa rustica* and *villa urbana* or *suburbana.*[30]

Mainly productive activities characterise the *villa rustica romana*: agricultural (cereals, vegetables, fruits), but also handicraft (wool and leather processing). In Roman economy the term

[26] Soraci 1982, 65-97
[27] *Istoria românilor,* II, 170
[28] Thurmond 2006, 15-18; Jasny 1944, 14-16
[29] *Istoria românilor,* I, 766; Ardevan, Zerbini 2007, 83
[30] Marzano 2007, 85-101

villa means farm. Probably in the western provinces *villa*s developed with the biggest succes, evolveing towards a wide variety of models.

Based on their plans *villa*s were classified as: *corridor villa* (a house with a simple portico along the facade, usualy open on the external side and a one sloped roof); *winged corridor villa* (a development of the first, transforming the two rooms from the corners into wings); *courtyard villa* (an ulterior step) and than a second courtyard is added. [31]

In **Britain** the earliest *villa*s had a simple rectangular plan, usualy with a row of smaler rooms, not one larger as on the continent. The majority of the *villa*s in Britain appear in the first century A.D. and develop until the 3rd century. In the 4th century some of them disappear, others survive until the 5th or even later. A typical model is that of the corridor *villa* (like Lockleys, Boxmoor), which sometimes develops into the courtyard *villa* (Gadebridge Park, Dicket Mead).[32]

The western part of the **Italian peninsula** was more densely populated. The *villa*s preponderant agrarian role is shown by their development in areas with ferile soils. The majority of the studied *villa*s are centered on working activities and not on the owners confort. Besides the *villa rustica* and *villa suburbana* there were also *villa maritima.*[33]

Spain had a very fertile soil and there are evidence for cereal exportation since the 2nd century B.C. The emergence of *villa*s also depends on the fertile soils, found especialy in the valleys of the rivers. In Spain, a mediterranean country, the plans of the *villa*s were intensely influenced by those from Italy.[34]

In the northern part of **Africa** the areas cultivated with cereals before the Roman conquest were more intensively exploited and the new territories were transformed in olive plantations. The most common *villa* type is the small olive farm, with a marked utilitarian character. Some seem almost unplaned, developing to satisfy the special agrarian needs. Others are strictly planed. All are working farms bereft of luxurious arrangements. The cereal cultivating *villas* from the central area can be dated as from the first century B.C. and the olive farms a few generations later. [35]

In **Gaule** the *villas* developed early, from the beginings of the province. They seem to be pretty big, but they were also working farms. Often there are no farms in dry areas where complex irrigation systems were required. In Gaule, the closeness of o big town wasn't that important, because there was the posibility of water transportation. The first settlements were dated in the first century A.D. The most flourishing period for the most of them was the 4th century. It's an area with small and middle sized settlements, with a certain degree of confort (Cadeilhan-St-Clar).[36]

[31] Marzano 2007, 72-82
[32] Marzano 2007, 91-105
[33] Marzano 2007, 52-59
[34] Marzano 2007, 59-61
[35] Percival 1976, 61-66
[36] Percival 1976, 67-82

Many of the settlements from **Germania Superior** and **Inferior, Raetia** and **Norricum** were exposed to military conflicts, barbarian riots, destructions caused by invasions and raids, economical ruin due to the lost of markets. The *villa*s are working places, their plans and models are influenced by the need for security and eficiancy, not by confort. Generally they were small or medium constructions, with agrarian buildings, surrounded with walls or stockade. Many of these *villa*s were associated with legionary forts. There is a special type of *villa* in the germanic provinces, the so called *villa* with hall, which had big halls instead of the groups of small rooms.[37]

In **Norricum** *villas* appeared in the vicinity of great centers. Most common were the small, simple settlements (like Wimsbach), but there were also big and luxurious ones (Löffelbach, Thalerhof). Many of the *villas* existed until the 4th century or even later.[38]

From the agrarian point of view **Dalmatia** wasn't very attractive, due to the lack of water and fertile soils. The majority of the population, romanization and prosperity concentrated in the coastal area, where fertile soil could be found, it was rich in fish and had a favorable mediterranean climate. These *villa*s simbolized the addoption of romanized methods and way of life by the local population.

From a geographical point of view **Pannonia** was very different. Work on the farms was very extensive and efficient. The earliest *villa*s appeared in the valleys of the Sava and Drava, aspecially in the triangle between Poetovio, Emona and Siscia. These *villa*s are working settlements, even if many had heated rooms, floors with mosaic and other endowments (Csúcshegy, Testvérhegy). Realy luxurious and towering *villa*s appeared around lake Balaton (Nemesvámos-Balácapuszta, Keszthely-Fenékpuszta).

A similar situation to Pannonia can be found in **Moesia Inferior, Superior** and **Tracia.** The first *villa*s appeared behind the borders, close to the big cities (like Serdica). Important settlements are Amira and Chatalka in Thrace, Bela Palanka in Moesia Superior and Kolarovgrad in Moesia Inferior.[39]

f). *Villa rustica* in Roman Dacia

After the Roman conquest the natives continued the agricultural exploitation, on the Roman properties or on new areas, less fertile, that weren't used in these purposes before. The most common way of exploitation was the agrarian settlement- the *villa rustica*. The agrarian and animal breeding settlements represent the basis of rural life in Dacia.[40]

All the Roman farms are placed in fertile areas, the majority along the main roads of the province. Usually the *villa rustica* includes the house of the owner and other annexes: stables,

[37] Percival 1976, 83-85; King 1990, 96
[38] Percival 1976, 86-87
[39] Percival 1976, 87-91
[40] Mărghitan 1987, 59-65

barns, storehouses, houses for the casual labourers. Often all of these were surrounded by walls and had a tower for shelter and observation. The house of the owner had different confort elements, like baths heated with a system of *hypocaustum.* [41]

Many *villa*s were discovered in Dacia (like Aiton, Aiud, Apahida, Apulum, Caransebeş, Chinteni, Cinciş, Ciumăfaia, Cristeşti, Dalboşeţ, Deva, Dezmir, Gârbău, Gârla Mare, Gornea, Hobiţa, Jucu de Sus, Mănerău, Mediaş, Miercurea Sibiului, Răhău, Romula, Sarmizegetusa, Tibiscum). These *villae rusticae* were positioned, like in other parts of the Empire, in valleys or on the tereaces of hills, in the close proximity of a thread of water, close to the major roads, not very far from cities or forts, which represented important markets for the products. The main building, the house of the owner, was found in all of the *villa*s. Some said that the type of farms was that of *villae rusticae* with buildings dispersed inside a precinct, with a marked agrarian character, also found in Italy, Africa, Gaule, Germany and Pannonia.

The majority of these *villa*s were small in the begining and than they developed into well defined agricultural units. The point of the highest development seems to be in the second half of the 2nd century and the first half of the 3rd.

The owners were veterans, soldiers, many settlers, maybe even natives. Workers were mostly natives, fact proved by the presence of Dacian ware in many annexes of the *villae*. Probably slaves were also used, but on a smaller scale, especially for domestic jobs, since cheap workers were available.

These *villae* seem to be inhabited all year long, so their residents tried to recreate urban confort in a rural area (pavements, *hypocaustum*, installations for water and bath, painted walls). Some managed to procure even imported wines and oil. Besides their agrarian character, these *villae rusticae* were important diffusion centers of Roman civilization and culture.[42]

g). Agricultural implements

Agricultural implements went through considerable changes. In the begining they were very primitive. In the 3rd-2nd centuries B.C. the new agricultural methods transformed the Roman economy. In the first century B.C. the great domains described by Varro had a rich and improved agricultural inventory.

Based on the fabric from which they were made up, tools could be grouped in *wooden tools* (ploughs with iron ploughshare, yokes, shovels, carts, kits, interweaved baskets), *clay tools* (containers of different sizes, amphoras), *bronze and lead tools* (cauldrons, caldrons, ladles, scales), *iron tools* (ploughshares, hoe, scythe, fork, sickle, saw, shovel, drill, knife) and *stone tools* (grinder, *mortaria*).

[41] Fodorean 2006, 339-341
[42] Mitrofan 1977, 245-256

K. D. White divided them in two groups: *manual agricultural implements* (spit, mattock, shovel, hoe, ax, knife, sickle, hook, scythe, fork, saw, scissors) and *agricultural machines* (plough, drag, trailer, treshing and harvesting machines). Improvements of already existing equipment are also important. [43]

g.1. Agricultural implements in Dacia

In Dacia agriculture played an important role and we have a lot of discoveries of agricultural tools.

We have a lot of tools (agricultural, smithy, carpentry) discovered in **Dacian** settlements and deposits. The oldest ploughshare dates in the second half of the 2nd century B.C. Probably ploughshares arrived to Dacia from the south Thracian world, where the oldest ones were dated in the 4th century B.C.

Leopold Schmidt is talking about two types of iron of the plough: the Roman provincial and the Celtic. In Dacia the Celtic type is rarely found (Ichimen, Moldova), but the Roman is much more widespread (Hobiţa, Garvăn-Dinogetia). In Dacia is also known a so called Dacian type, found at Costeşti, Cristeşti, Tinosul, Lechniţa, Pecica, Poiana, Popeşti, Grădiştea-Muncelului.

The knives of the plough were less frequent in Dacian discoveries (Bicfalău, Cetăţeni, Craiva, Grădiştea Muncelului, Strâmbu, Poiana) and their smaller number shows that for the Dacian plough the ploughshare was more important.[44]

In agriculture more types of hoes and mattocks were used, but it seems that the most widespread tool was the sickle with hook, specifically Dacian, found in all the studied rural settlements. In the second half of the first century A.D. appeares the scythe with tongue and sleeve, creation of the handymen from Sarmizegetusa Regia. Other tools were pruning hooks for vine, scissors for trimming sheep.[45] The iron rake was discovered rarely in Dacia, at Grădiştea Muncelului.

The difference between hoe and adze is made based on the size: hoes are the bigger ones (19-20 cm) and adzes the smaller ones. Hoes and mattocks have different types.

The most common tools discovered are the sickles, a basic tool in the agricultural economy. There are two types: with a narrow blade and with a wide blade. Other tools that were discovered in Dacia are scythes, scissors, pruning hooks.[46]

We can observe the diversity of Dacian agricultural implements, the large number of pieces, some even specialized, the use of iron on a large scale to make tools.

In the **Roman period** the implements are made from iron with wooden accessories, usually in the local workshops. Many pieces were discovered in rural settlements, in the proximity of forts (

[43] White 1967, 12-14
[44] Glodariu, Iaroslavschi 1976, 63-64
[45] *Istoria românilor,* I, 76
[46] *Istoria românilor,* I, 75

Hoghiz, Bumbeşti, Răcari, Slăveni), in *villae rusticae* (Hobiţa, Chinteni, Apahida), in the rural territory of towns (Apulum, Napoca, Tibiscum, Romula). Hoes, spits, sickles, scythes, chains, plough irons, forks were discovered.[47]

Ioan Horaţiu Crişan established 3 types of plough irons: Dacian, Celtic, Roman provincial. The Roman type will be widespread in Dacia after the Roman conquest, but it could have arrived in the first century A.D. It's efficiency was higher than of the Dacian so natives used it together with or instead of the Dacian type.

The plough knife is similar to a big knife and was used to cut the soil. It does not appear always together with the ploughshare which could mean that not everywhere both pieces were used.

Corneliu Mărgărit Tătulea made a typology of the ploughshare: four types, some with subtypes.

Other agricultural implements were: hoes, mattocks, sickles, scythes (with a long blade- *falx foenaria* or short, solid blade- *falx sirpicula*) [48], spades, cutters, pruning hooks.

The large number of agricultural tools discovered all over the Dacian territory prove the importance of agriculture and the practice of it on a high scale before the Roman conquest, during the Roman period and even after.

In many areas Dacian and Roman pieces were used together. The Roman ones are more improved, more advanced leading to the increase of efficiency of the agrarian production. But the Dacian tools are in some cases more appropriate to local realities (special characteristics of soil, climate, etc.) and they continue to be in use. New tools appear and often they are taken over by the natives, but this fact does not mean a total or immediate replacement of the old, local tools.

g.2. Milling

Milling developed due to the necessity of processing the agricultural products. The milling of grains and their transformation into flour had a huge importance in the alimentation of men.

Mortaria is a separate category of pottery pretty frequent in archaeological discoveries. They are also called *pelves*. They are large containers with the lip reverberated in the exterior, with thick walls and a discoidal bottom. In many cases they have a drainage beak. The majority have pebbles in the interior paste. They were used to crush and mince a lot of ingredients (seeds, herbs) used in the Roman kitchen. This fact is proven by the culinary books and texts about agriculture, but also by *graffiti* from these vessels. The crushing and minceing was made with a *pistillum*.[49] Some researchers think that *mortaria* without pebbles and quartz in the interior paste could be also used for skimming and curdleing of milk.[50]

[47] *Istoria românilor,* II, 171
[48] Berciu, Popa 1963, 151-161
[49] Rusu Bolindeţ 2007, 407
[50] Lipovan 1992, 179-183

The ancient *mill* had two essential parts: the inferior, immobile, called *meta*, and the superior, moveable, called *catillus*, which interweaved perfectly. [51]

Based on the hauling force mills were classified as: *hand mills- mola trusatilis, manualis, manuaria, versatilis*, useing mainly slaves; *mills with animal traction*- useing mules, horses, donkeys- *mola asinaria, jumentaria*; *water mills- mola aquaria, hidromula, hidraletes*.[52]

Dacian mills have the moveable part in form of a truncated cone and the immobile part has a cavity in form of a cap.

Probably Romans brought also the rotary mill. The Roman rotary mills had advantages: a higher productivity and a better quality of the finished product. The penetration of these tools in forts and civile settlements is higher. The Dacian rotary mills were gradually replaced. Even if Dacian mills survived in the Roman period, their number decreased.

Roman mills had the cylindrical *catillus* flattened (like the pieces from Cristești, Aquae, Câpulung-Muscel).

Radu Octavian Maier made a comparative study about milling at Pompeii and Histria, reaching the conclusion that the Histria II type mills were horizontal constructions and were more developed from the technical point of view.

Roman milling places were not only mills, but real breadmaking centers. Every unit, besides the mill, had a bread baking oven, containers of diferent size, tools. At Pompeii were discovered amphoras for keeping wheat, bread baking ovens, big marble kneading containers, smaller stone vessels for different doughs.

The frequent discovery of handmills, mills and *mortaria* show the importance of milling in the life of the population of the provinces. They can be evidence not only for grinding cereals, but also indirect proof of useing and grinding other edibles, like dried fruits or seeds, aromatic plants, herbs or spices.

Handmills, mills and *mortaria* offer us important information about practicing a job on a large scale (milling, grinding), but are also evidence for practicing agriculture and especially cereal cultivation in pre-Roman and Roman Dacia.

h). Storage

In the Roman period keeping the cereals in safe conditions (dry, cool, obscure places) to protect them from moist, gnawers and other diseases and to keep them for short, medium or longer periods was an important problem. Ancient authors tell us that different areas and different climates need different storage techniques: underground caves, holes, ditches, surface granaries.

[51] Lascu 1965, 25-26
[52] *DAGR*, Paris, Tomul III, Paris, 1904, 1960-1961

The literary meaning of *horreum* is almost the same with *granarium*. Plinius the Elder makes a distinction between them. *Horreum* was built from bricks, had thick walls (at least 3 feet), no windows or other openings for ventilation and the cereals were introduced in the upper part. *Granarium* was built from wood, on pillars and the air circulated in all the directions. Columella makes the same distiction, adding that *horreum* had a vaulted roof. Underground granaries also existed. Generally there are two main *horrea* categories: civile and military.

Rome, Ostia and other Roman cities had many *horrea*. On the basis of their plan we could talk about two main types: quadrilateral ones and the ones with hall. Every type has differences in form and size. We can't talk about special materials and building styles for *horrea*. Windows were simple apertures, whit the role of ventilation not illumination. Some *horrea* had storeys. The roof could be vaulted, made from concrete or wood and had drains. Some had elevated floors for a better ventilation of the cereals. Generally cereals were kept in three ways: in bags, in baskets or in bulk. It was belived that in military *horrea* cereals were kept in baskets, near the walls.

There were also military storage places for the supplies of the army. We can talk about two main categories of military granaries: those of wood and those of stone. The first category is specific mainly for the first century A. D. forts. The stone ones were built from the period of Traian and seem to be derived directly from the wooden ones.[53] The best studied military *horrea* are those from Britain and Germany.

Horrea from Britain were long, narrow rectangular, hall shaped buildings, with thick walls, buttresses and often a raised floor (mainly with the help of transversal beams disposed under the floor). Even if they seem to be built after a standard model, there are differences in dimensions, grouping, pozition and structural details. In the first century A.D. wooden *horrea* were built in the auxiliary and legionary forts. The first stone granaries date back to the period of Traian. In these cases the raised floor was supported by small pillars, similar to those used by the *hypocaustum* or on small walls, parallel with the long axis of the building. The second version seems to be more widespread and is dated from the period of Hadrian. In Britain there are four types of military granaries: a single *horreum*, double *horrea*, *horrea* in pair, *horrea* placed one after the other. The last three types are variations of the first and it seems that they were created as an answer to the local peculiarities.

In Germany the majority of granaries from the auxiliary forts were simple rectangular buildings (similar to type 1 from Britain), but with a large diversity in details. Granaries seem to be wider than those from Britain.

[53]Curtis 2001, 329-333

In *Dacia Porolissensis* we have *horrea* identified in the forts from: Bologa, Buciumi, Căşeiu, Ilişua, Porolissum, Romita, Potaissa; in *Dacia Superior* in the forts from Bumbeşti, Cigmău, Drobeta, Micia, Pojejena; in *Dacia Inferior* in the forts from Arutela, Jidova, Răcari, Slăveni.

In Dacia no wooden granaried were discovered, but this fact could be explained by the practice of rebuilding in stone in the imperial period the earlier constructions. The granaries from the auxiliary forts are pretty wide (generally a proportion of 2,5 : 1), which could explain the leck of double granaries. They are similar to those from Germany and differ from those from Britain. Usually granaries occupied 1,5-2 % of the surface of the forts. On the long sides they have buttresses, which on the shorter sides are usually in pair. The entrance was in the back, from the main road (was easier to reach from the gates of the fort and supported the loading of supplies). The most common way to support the floor seems to be with pillars, like in Germany. A peculiarity of granaries from Dacia is the wooden floor.

Unfortunatelly civil *horrea* from rural settlements or cities from Roman Dacia were not studied. Maybe at Ulpia we could face a civil *horreum* kept from the period of the fort. It is highly probable that not only military, but also civile *horrea* existed in Dacia. Because agriculture played an important role in the province it is understandeble the need to keep and store the crop.

i). Bread making

Joan Frayn thinks that baking in ash an *sub testu* was specific to the peasant cuisine, the portable and the fixed oven appear in the more flourishing households from cities or the rural area, and the *furnus* was the standard oven of commercial bakeries from the cities but it could be found on the larger rural domains, too.

Initially bread was baken at home. It was a common practice to put the bread on leaves before baking, method mentioned by Cato, Plinius, Columella and Apicius.

At first bread was made without yeast, then different types of leaven were added to make the bread grow and more fluffy. Salt wasn't a compulsory ingredient of the bread. Bread and other pastry products were kneaded.[54]

From the qualitative point of view there were different types of bread. The bread made of wheat was more appreciated than that of barley. Some types of flour, like *siligo* were used to make the best quality bread (*panis siligineus*). Bread could have different dimensions and forms. At Herculaneum were discovered moulds for bread making (in form of a Medusa head, piglet, rabbit, or even ham).

We have little information about pastry products, but this does not mean that they were not produced and consumed, rather that the recipe books dedicated to them were not preserved.

[54] Frayn 1978, 28-33

In the case of Dacia only a few assumptions can be made, which maybe in the future might be demonstrated (by studying the archaeological discoveries). Dacians used wheat not only for porridge, but they also transformed it into flour to make flat loaves or even leavened bread. The ferment could be obtained by mixing millet flour with sweet wine or dough from an earlier bread making could be used.

The bread baking techniques were known and used by the Dacians before the Roman conquest and probably they were kept or even improved after the arrival of the Romans. Bread was a nourishing and not very hard to prepare nutriment and was probably used on a high scale by the population of Dacia before the Roman conquest, in the Roman period and even after the withdrawal.

j). Carpological studies

The existence of carpological materials in archaeological deposits is the direct proof of cultivation and gathering processes, but also for favourable conditions for conservation. In the conservation process two groups of factors occure: the natural conservation elements (the location of the site, the composition of the soil and the action of the organic destruction agents) and the anthropic agents- human action.[55]

Carpological studies helped to establish a list of consumed plants (wild and cultivated plants). In agriculture carpology offers important information. Carpological studies were conducted even in Pompeii, Oplontis, Boscoreale. In some cases, in certain parts of the vesuvian area, the extreme temperatures due to the erruption, played an important role in the charring of certain seeds. There were identified and studied carbonized remains of different species of cereals (barley, millet), vegetables (bean, vetch, chickpea, carob, lentil, onion), fruits (peanuts, chestnuts, figs, olives, dates, pine, pomegranate, almonds, cherry, pear, apple, grapes). Many plant remains were discovered *in situ* from the gardens of Pompeii.

For the territory of Romania carpological studies were made for some neo-eneolithical sites, but unfortunatelly for the Roman period we have little information. At Tibiscum three wooden barrels were discovered with carbonized seeds (wheat, barley, hemp).

For the Dacian period the carpological studies of the material from different sites led to the establishing of the main consumed cereals, vegetables and fruits (millet, wheat, lentil, peanut, barley, vetch, spinach, garden sorrel, hemp, *vitis vinifera*, carrot, garlic, poppy, sour dock, rye, pea, oat, chickpea, bean, mustard).

It is important to make carpological studies to the allready existing material from the Roman period and also to the material that will be discovered in later investigations, so that a comparison could be made with the Dacian period and with the studies from other areas of the Roman Empire.

[55]Cârciumaru, Pleșa, Mărghărit 2005, 14

For now we can say that the cultivated plants from Dacia were those known and cultivated in other provinces, too. Always the preponderance of cultivating a certain plant is the result of soil and climate characteristics from certain areas.

2. Vegetables and fruits

a). Gardens

Gardens played an important role in the life of the Romans. There were the ornamental gardens, but also those for cultivating plants. Kitchen gardens were very popular even in the Roman cities. In these gardens culinary and medicinal plants were cultivated.

The term *hortus* (garden) initially refered to a cortile with herbs, vegetables and fruit trees. It was surrounded with a wall or hedge to keep out wild animals and thieves. Fountais and lakes from the interior had a decorative and utilitary purpose (to water the plants). Every garden had at least one statue of Priapus, the garden god.

Unfortunately we have no first hand information about gardening in Dacia, but this does not mean that gardening wasn't practiced. Clues for this practice are the agricultural implements (which could be used out in the fields but also in the kitchen gardens or orchards), the cultivation and usage of vegetables and fruits in the diet. We could suppose the existence of kitchen gardens in Dacia, where vegetables and different herbs were cultivated.

b). Vegetables

Romans made a clear differnce between agriculture and horticulture. Vegetables were a very important part of the ancient diet of people from towns and rural areas. Some species were gathered in a wild form and some were cultivated. They were characterised by richness, aboundance and the variety of different vegetable species.

Lentils, chickpea, pea, onion, garlic, leek, radishes, Swedish turnip, carrot, parsnip, beet, cabbage, asparagus, lettuce, cucumber, bean were consumed on a high scale. Mushrooms and truffles were very appreciated by the Romans.

Vegetables were an important source of nourishment for the Dacians. In pre-Roman Dacia were consumed mainly lentils, beans, peas, vetches, garlic. Also wild species with edible seeds, leaves or roots were consumed: spinach, allseed, orach, watercress, sorrel, carrot. Different varieties of mushrooms appeared in all the areas, from spring to autumn and could be consumed raw or cooked (fried, boiled), some could also be dried and kept for winter.

We don't have dependable sources for vegetable cultivation in the Roman period. An evidence might be the waxed tablet from Alburnus Maior, Tab.Cer.D XVI, which tells of lettuce and onion, which probably came from a local vegetable production.

We could imagine the cultivation and consumption of the same vegetables in the Roman period like in other areas of the Empire. From some vegetables the leaves were conumed (cabbage, lettuce), from others the roots (radishes, carrot, parsnip), kernels (pea, lentil, chickpea, bean) or seeds. They could be consumed raw, as salad or boiled, fried, as porridge or garnish.

Another clue might be the agricultural tools, that could be used also in the kitchen garden: shovel, spade, hoe, mattock, fork, rake. Archaeological and carpological studies offer the most important clues about different vegetable varieties known and cultivated in antiquity. In the future, with the multiplication of these studies important conclusions might be drawn regarding the main cultivated species in different settlements, perhaps the identification of some new or specific species for Dacia.

Unfortunately, based on the small amount of information that exists for Roman Dacia, no conclusive conclusions can be drawn and no general view of the existing situation in the province can be given. We hope that forthcoming studies will complete this image.

c). Fruits

We have information about orchards with rare trees only from the first century B.C. Varro said that grafting was used to get better varieties. In Italy, besides the local fruits, many fruit trees were brought from the Eastern world. Ancient authors give information about planting and takeing care of orchards.

Apple, pear, quince, plum, cherry, apricot, peach, date, fig, pomegranate, grape, watermelon, melon, acorn, hazelnut, chestnut, almond, olive, pine kernels were often consumed.

The fruits consumed by the Dacians are not well documented, seeds and kernels are rare in Dacian settlements. Probably also wild fruits were part of the diet: wild strawberries, raspberry, blueberry, blackberry.[56]

An eviedence of fruit growing in Dacia is the discovery of 40 cherry seeds at the *villa* from Gârla Mare.[57] Other proof might be the agricultural tools which could be used for planting and maitening trees (hoe, shovel, pruning hook, axe). In the case of the pruning hooks it isn't very clear which ones were for the vine and which for the trees. Some people think that the bigger ones were used in fruit growing, but this is not a certain fact.

We have no information about seed or kernel discoveries in the Roman period. We could presume that in the province some fruits were cultivated others were consumed wild. Probably fruits found in the diet of the Romans from the other provinces, were consumed in Dacia, too: apples, pears, plums, cherries, quinces, peaches, grapes, hazelnuts, chestnuts, nuts and wild fruits.

[56] Suciu 2001, 165
[57] Stîngă 1999, 90

Archaeological discoveries and carpological studies will provide important information about fruit growing, like fruit varieties cultivated or gathered wild.

3. Viticulture

a). Ancient sources

Ancient authors give us important information about viticulture: Marcus Porcius Cato, *De Agricultura;* Varro, *Res Rusticae*; Columella, *De Re Rustica*; Plinius, *Naturalis Historia;* Publius Ovidius Naso, *Tristia* and *Epistulae ex Ponto;* Aurelius, Xenofon, Galen. Thanks to theses ancient sources we can see the important place of the wine in the daily life of the Romans and in trade.

b.)General aspects of viticulture

The term used by the Greeks and Romans to define wine (Greek *oinos*, Latin *vinum*), shows that it was borrowed from the Near East.

In the period of the Royalty and the begining of the Republic the culture of vines wasn't very developed, but later it made such progress that it occupied the second place in economy, after the cereals.

b.1. Wine in mithology

Wine was important in mithology, too. In Egipt it was brought to earth by Ra and it's consecrated to Osiris.

In Greece the symbology of wine is expressed by Dionysos, son of Zeus, and wine was assimilated to his blood.

According to tradition, wine was introduced to the Romans by Saturn and than dedicated to Bacchus.

b.2. The philosophy of wine

The Greek philosophy related to wine knew different stages: it started from the conception that wine was given to humanity by Dionysos, than it was seen as the drink that could lead men to a perfect union with the divinity, than a progressive depreciation of drinking can be seen.

In the tradition of the Latin people, wine was from the earliest times under the sign of ambiguity: it was a divine gift but also a source of tragedy an violence, due to the generated effects.

b.3. The origins and expansion of wine

Vine can be considered a prehistoric plant and is hard to determine the place of origins. In the Mediterranean area the extension of vineyards is very old, because there the soil and climate was favourable.

Viticulture is widespread in Asia, many vineyards are known. In the Egeean very appreciated were the wines from Crete, Samos, Cos, Chios, Lesbos, Thasos.[58] In Greece there are only a few

[58] DAGR Tom 5, vol. 1- *Vinum*, 914

regions that don't cultivate vine. The best Sicilian wine is that from Messina. Italy is also rich in vineyards. The wines from Campania are between the best wines.

Along the Roman history some changes can be noticed. In the 3-2nd centuries B.C. Romans imported considerable amounts of Greek wines, until 121 B.C. when the conditions for vine cultivation were almost ideal in the Italian peninsula. The wine of that year was named *Opimian*, in honour of consul Lucius Opimius. Arround the middle of the first century B.C. vineyards from many regions of Italy were recognized for their quality. At the end of the first century A.D. in many cellars of the harbours arround the Mediterranean were more Spanish wines than Italian.

b.4. Grapes

The oldest writing about wine and agriculture was in punic. After the destruction of Cartage in 146 B.C. the senate decreesed the translation in Latin of this treatise and it becamed the source of all Roman writings about viticulture.[59]

Vine was cultivated mainly for wine. Grapes could also be consumed fresh, as fruits, but the production of table grapes was profitable only if the vineyard was close to a big city, which assured consumtion.

b.5. Viticulture

Thanks to the narration of ancient authors we know how vines were planted in a vineyard, the distance between them, the lots it was split into by the main acces roads and many pathways. Ancient authors give information also about the varieties of vine.

In spite of all the caregiving the winegrower hadn't insured a good vintage, he had to face diseases and insects that attacked the plants or the fruits.[60]

b.6. Wine production

The old tradition was to harvest grapes after the leaves fell down and the fruits were almost raisined. At the small-scalegrowers the gatherers were the family members and on the large properties were members of the staff, slaves and free people.[61] Grapes were picked, brought home, followed and then they were put in the wine press (*torcularium*) to crush them. The wine press was described by Cato and was discovered in a good shape at Pompei, in *villa* Boscoreale.

In the areas arround the Alps wine was put in wooden barrels and kept in buildings covered with tiles. In winter fires were lit to protect the barrels from frost. In areas with warmer climat wine was kept in vessels partialy or totaly buried in the ground, to protect it from the temperature fluctuations.[62] The wine cellar (*cella vinaria*) could be underground or at the level of the house. If both types existed in the underground one was kept the old wine and in the other the new.

[59] *Wine and Rome* pe http://penelope.uchicago.edu
[60] DAGR Tom 5, vol. 1- *Vinum*, 918-919
[61] Lascu 1965, 39; White 1970, 240-241
[62] Faas 2005, 113-114

Romans used to mix wine with water before drinking. Undiluated wine was considered a habbit of the provincials and the barbarians. Usually Romans mixed one part wine with two parts water (sometimes warm or sea water to reduce sweetness). Different flavours could be added, like mirtle, roses, violets, lilac, coriander, celery, almound, pepper, cinnamon or even resin.[63]

For the transportation of wine amphoras were used, put in racks when shipped and buried in sand when kept in cellars.The mouth of the amphoras was closed with a cork covered with pitch, tied and then covered with fine clay or gypsum. On the neck of the vessels an inscription was made with red or maroon paint, which indicated the name of the merchant, the place of production and the capacity of the amphora.

b.7. Types of wine

The most common way to consume wine was at the temperature of the room. The richer could cool it down with snow or could heat it by adding hot water or by heating wine in *authepsa* or *miliarium* (different forms and types were known).[64] Romans distinguished between sweet and dry wine. There are different types of wine, like: *Albanum, Calenum, Caecuban, Caroenum, Defrutum, Falernum, Fundanum, Lora, Mamertine, Massic, Massilitanum, Mulsum, Nomentanum, Passum, Posca, Sapa, Setinum, Surrentinum, Spolentinum, Tarentinum, Trifolinum.*

b.8. The use of wine

Egypt was the first country from the Mediterranean basin who cultivated vine, but the consumption of wine was limited. Due to its sacred character, wine was mainly used in religious ceremonies and was consumed by religious and political dignitaries. The pharaoh drenk wine, but he prefered beer, the beverage of his people.[65]

Wine had an important role in the Greek *symposium.* The carousal wasn't ignored or severely blamed and it seemed to be more a vice of the Greeks than of the barbarians.

At the Greeks and Romans the quality wine was a beverage of the elites. Slaves and soldiers had the right to a mixture of wine, vinegar and water. Wine was always mixed with water.

Wine was also used in the kitchen to prepare different recipes (desserts, sauces) but had also a therapeutical utilization. Greeks used wine as a medicine from ancient times. Along with Hippocrates, the father of modern medicine, wine knew the real consecration in the therapeutical area. Teofrastus invented the medicinal wines, by adding herbs and spices. At Rome wine keeps all its therapeutical qualities, its beneficial effects are confirmed by Dioscoride, Plinius the Elder.[66]

b.9. Viticulture from the economical point of view

[63] Faas 2005, 117-118
[64] Curtis 2001, 372-374
[65] Montignac 2010, 24
[66] Montignac 2010, 80-83

Viticulture is an important part of ancient agriculture. Vineyards were considered the most profitable- in Cato's work they occupy the first place. Plinius and Columella also talk about large earnings from viticulture.[67]

It's hard to estimate the consumption and the importance of exhanges. In the Roman period they occupy an important place. The price of the wines varied, according to years and vineyards.

Often wine was provided as tax. The state wine was given to certain guilds, as payment for their services and other parts were sold to the people. Taking into consideration all the donations, it is not posible to estimate the precise income of the vineyards.

Whatever the situation might be, we can't reject the opinion of the ancient authors about the economical importance of viticulture.[68]

b.10. Other drinks

Besides wine, ancients consumed other beverages, too. We could give as an example here: *Alica* (a cheap beverage from cereals and water, with a low alcohol content), *water, beer, milk* (especially sheep and goat), *lora* (an inferior wine from the second or the third pressing), *melca* (a sort of yoghurt from sheep and goat milk), *mead* (*aqua mulsa*- an older and simplier drink than *mulsum*, made from the mixing of water, honey and yeast, left to ferment; has a beautiful golden colour, a high alcohol content and a subtle honey flavour[69]), *mulsum* (wine with honey added), *passum* (a sweet wine made from raisins, without adding honey), *posca* (a refreshing drink from water and vinegar, very appreciated by travellers), *snow* (often flavoured with spicy wine and *mulsum*).

b.11. Vine and wine in Gaule

The stereotype of the drunk celt is one of the most legendary cliches in ancient literature. From the 4th century B.C. until the 4th century A.D. about 30 texts mention the consumption of alcoholic beverages by the gaules. These drinks were local or imported, stolen or bought at high prices. In the sites of Gaule the imported wine appears from the 6th century B.C.). [70]

Simultaneously large quantities of beverages (beer and wine) and food were consumed by the members of a numerous community. Wine had an important role even in religious rituals. Libations with wine in the honour of the divinity or the dead represented a fundamental practice.

The history of wine in pre-Roman Gaule knew different phases, prosperity and decline, related to social and political changes. Commercial contacts with Rome ensured constant wine supplies.[71] After the Roman conquest vine spread even more in Gaule. Gaules surpassed Romans in the art of viticulture. They improved the preservation of wine, by inventing in 62 B.C. the barrel. The consumed wine differes a lot according to the social class.

[67]Duncan-Jones 1974 , 33-59
[68] DAGR Tom 5, vol. 1- *Vinum*, 923-924
[69] Faas 2005, 119-120; Dalby 2003, 210-211
[70] Poux 2004, 610
[71] Poux 2004, 612-613

b.12. Wine in Britain

The amphora fragments from Colchester and London suggest the existence of a market for good wine in Britain. Untill the conquest wine does not seem to be imported in large quantities, the majority was probably for the army. The discoveries from the earliest forts show that the soldiers had acces to wine. Generally, until the end of the first century the majority of the consumed wine from Britain came from Gaule. The large unknown element of the wine trade is the quantity of wine brought to Britain in barrels.[72]

There are little evidence for a local wine production in Britain. The discovery in 1990 of a vineyard at Wollaston proves the existence of a local wine production.

Beer was very appreciated in Britain. The discovery of certain peaces (strainers, wine coolers) could indicate the preparation and consumption of some spicy, infused drinks.[73]

b.13. Wine and viticulture in Pompeii

Pompeii was covered by ash and still maintaines the image of life from that time. The *villa*s Pisanella from Boscoreale and Regina near Boscoreale were involved in the wine production, and viticulture was an important local activity.

Pompeii wasn't famous for the production of good quality wines. It seems that in the region different quality wines were produced, some probably for local consumption, others for export. Ancient sources talk about the denomination of more varieties cultivated on the Vesuvian slopes and on the surrounding plains. Pompeian wine amphoras were found in Ostia (Italy), Ampurias (Spain), Alesia (Gaule), Vindonisa and Angs (Switzerland), Trier (Germany), Stanmore, Middlesex (Britain). It seems that some leading citizens from Pompeii were involved in the production and export of local wine.[74]

c). Viticulture in Dacia

c.1. Pre-Roman period

In Dacian settlements and sometimes necropolis were discovered curve knives, of different dimensions, with the cutting edge on the concave part, some were 20-23 cm, similar to sickles. They probably had a special use, Maria Comșa thinks that they were used in viticulture.

In many Dacian settlements, tombs or necropolis smaller curved knives were discovered (with the lenght of the blade of 6-12 cm), with cutting edge on the concave part. We know from the sources that in Italy for the harvesting of grapes similar knives were used. Similar knives were discovered in settlements, fortifications and fortresses from Moldova, Muntenia, Oltenia, Dobrogea, Transylvania, but also in Dacian funerar complexes and tombs with Celtic character.[75]

[72] Cool 2006, 129-135
[73] Cool 2006, 143-147
[74] Berry 2008, 213-214
[75] Comșa 1982, 59-66

Along with the curve knives pruning hooks were used for taking care of the vine and for harvesting grapes. These kind of tools were discovered in Dacian settlements and fortifications and also in a tool deposit from the workshop of the 8th terrace from Grădiștea Muncelului.

The representation of vine leaves on luxury Dacian ceramics, dicovered at Grădiștea Muncelului is another clue for the viticultural concerns.[76]

Maria Comșa drew some conclusions concerning Dacian viticulture. Special tools for the maintenance and harvesting of grapes appeared on the Dacian territory in the 6th century, maybe even in the second half of the 7th century B.C. In the 2nd century B.C. appeared the curve knives, special tools for the harvesting of grapes. These knives remained almost unchanged until the first century A. D. or even untill the Middle Ages. Pruning hooks appeared in the 4-5th century B.C. In the 6-first centuries B.C. Dacian viticulture was influenced by the Greek and than by the Roman.

After the intensification of the Roman influence in the first century A.D. appeared improved tools for the viticultural practices. Based on the archaeological discoveries it can be stated that Dacians practiced viticulture in all the known viticultural areas.[77]

c.2. After the Roman conquest

In the Roman period viticulture knew a large development. To the old varieties new ones were added, new, superior working methods brought by the settlers. One of these methods was cultivating vine in association with different trees (elm, poplar). In the 1-2nd centuries A.D. viticulture became a main agricultural branch in almost all of the Roman provinces.

Evidence for practicing viticulture in Dacia are:

- The will from Sucidava (*CIL III*, 14493)
- The waxed tablet from Alburnus Maior (*CIL III*, Tab. Cer. XV)
- An amphora fragment from Porolissum which proves southern wine or oil import from the time of Traian.[78]
- The discovery at Potaissa, on Șuia Hill of a small winemaking complex.[79]
- An inscription from a shrine discovered at Sarmizegetusa.[80]
- Ornaments depicting vine stalks and branches with leaves and grape clusters often found on stone monuments; numerous dedications and representations of Liber Pater[81]; tools (pruning hooks).
- A silen mask with the forehead covered with vine clusters and leaves, discovered at Tibiscum.[82]

[76]Florea 1996
[77] Comșa 1982, 78-79
[78] Macrea 1969, 297
[79]Bărbulescu 1994, 124; Cătinaș, Bărbulescu 1979, 101-126
[80] Piso 1993, 223-226
[81] Macrea 1969, 297

Important information about vine cultivation could br provided by the carpological studies.

c.3. Waxed tablets

The parallel consumption of local and imported wine is confirmed by the text of a waxed tablet (CIL III, Tab. Cer. XV), which contains the expenses of a banquet from Alburnus Maior. Two types of wine are mentioned: *merum* and *vinum*. *Merum*, o sweet wine, was an expensive and foreign beverage and *vinum* a local product. Their prices underline this fact. *Merum* was almost 2 denarius per litre and *vinum* 0,54 per litre.[83]

Even if traditionally *merum*, a more expensive drink is considered to be foreign and *vinum*, a cheaper one, local, there could also be another interpretation. *Merum* doesn't necessary has to be a foreign product. We know that it was often used in sacrifices. *Merum* from the waxed tablet from Alburnus Maior could be an undiluted wine, probably of a better quality. This would explain the higher price and the smaller quantity, too. If such an interpretation would be accepted, it wouldn't be a proof for parallel consumption of local and imported wine, but the evidence of the existence and use of different quality, local wines.

c.4. *Cella vinaria* from Potaissa

Cella vinaria was the cellar in which the barrels and amphoras for wine were kept. It could be located in the house, at the merchants home or in the vicinity of the vineyard. It was oriented northward. [84]

In the south-western end of Turda Şuia Hill can be found. In the spring of 1978 the steep bank of the quarry collapsed revealing the end of a stone wall, with plastering on the northern side. Archaeological excavations revealed an underground, rectangular room, oriented east-west. The vine crushing installation was discovered close to the underground room. A rich and varied archaeological material was discovered: different types of pottery, metal, bone and glass objects, fragments of terracotta statues, fragments of a stone relief. The archaeological material confirms the purposes of the complex. Probably a fire caused the end of the building: the scaffoldings of the roof lit and collapsed in the interior of the *cella*. It was assumed that the fire was put intentionally, after a robbery.[85]

Another supposition is that it could have been a part of a *villa suburbana* close to the city. The complex from Potaissa with *cella vinaria* and *torcular* was near or in the vineyard. The underground room in which the wine was kept could also be used to keep tools used in the

[82] Ardeț 2006, 48
[83] Tudor 1976, 398-399
[84] DAGR Tom 1, vol. 2- *Cella*, 988
[85] Bărbulescu 1994, 124

viticultural practices or as a house of the watchman. Wines could be sold here, aspecially red wine.[86]

Even if the *cella vinaria* from Potaissa is the only one discovered and studied on the territory of Dacia, we could assume that these kind of cellars for keeping wine existed also in other areas with viticultural exploatation from the province. Maybe later discoveries of other *cellae* will prove the practice of viticulture and the storage of wines in different areas of Dacia.

c.5. The will from Sucidava

It's the will of an anonymous, partially kept, who entails a two iugera vineyard. From this epitaph we find out about the cultivation of vine in southern Dacia or on the terraces of the Danube.

Based on the text we can see that the production of the two iugera vineyard could ensure the living of the caretaker and the necessary thinks for the periodical sacrifices. This attestation of local wine production proves that in Dacia local wine was also consumed, not only the imported, probably of a better quality but a lot more expensive.

c.6. The imported wine

We know that the imported wine and oil appeared in Dacia in the 6-3rd centuries B.C. when the local aristocracy bought amphoras with wine from Thasos, Rhodos, Pontus, through the Greek merchants from the Greek cities of the Dobrogean shore. In the free Dacian period the Greek amphoras were documented only in Oltenia, Muntenia and Moldova, but not in Transylvania (it was hard to cross the mountains).[87]

In the Roman period trade with wine and oil had a deeper penetration, untill the north of Transylvania, at Porolissum. Untill the Danubian harbours of Dacia (Sucidava, Drobeta, Dierna) amphoras were transported with ships and than packaged in special vehicles for transportation. The majority of the wine and oil amphoras were opened in the neighborhood of the rivers. The import of these wine and oil amphoras reached the maximum development in the period of the Sever dinasty (this was the maximum economical flourishing of Dacia), when wealthyer inhabitants could buy these luxury products.[88]

The wine and oil imports continued until the 6th century A.D. fact proven by the discovery of amphoras dated after the Roman withdrawal. Their consumption appears in the settlements of the migratory population and in the Romano-Byzantine fortresses from the left shore of the Danube. Now the imports came from the coasts and isles of the Aegean. [89]

In conclusion, we can say that viticulture was an important part of Dacian agriculture even before the Roman conquest. Besides the imported wine, probably of a better quality, there were also wines

[86] Bărbulescu 1994, 125-126
[87] Tudor 1968, 397
[88] Tudor 1968, 397-398
[89] Tudor 1968, 399

of local production. Viticultural exploitations existed in many areas from Dacia (even in areas not very suitable for the vine). The existence of a local viticulture and the importation of wine confirmes the interest of the Dacian population towards this product.

c.7. Prices in Dacia

In the Roman Empire prices and incomes are very different according to the period. The waxed tablets are unic sources for prices in Dacia. It is important to study prices from Dacia in relation with prices from other provinces. The compliance of prices from Alburnus Maior with those from other provinces in the first-second centuries A.D. confirms a monetary stability in this period and it could mean that the prices could be generalized for the entire province. To this we could add the fact that the gold mines from Dacia weren't economicly isolated, they were close to Apulum, an important economical center.[90]

d). Amphoras in Dacia

Amphoras were used to keep and carry liquids. They were characterised by a tall body, two handles and conical bottom- this is why they had to be transported stuck in sand. Some have the producer's stamp and/or *tituli picti* on the handle or neck, that attests capacity or content.[91]

Andrei Opaiț drew some preliminary conclusions for the situation from Dobrogea. A local production existed but mainly of common pottery. If there is a correlation between merchandise and amphora, the conical shape was for oil, the ovoid for wine, the globular-pear shaped for cereals and fish. Opaiț talks about 13 types. From these four were for oil (types II, III, IV, VI), four for wine (V, VII, VIII, IX), four for cereals or fish (X, XI, XII, XIII). As a local production would be type I. The Danubian cities had a flourishing economical life. Troesmis and Noviodunum were among the first, being transit points for the southern merchandise towards the north Danubian areas.[92]

The study of the amphoras began in the 20th century, based on the investigations from Pompeii. The first and the most important typological classification, based on the form of the containers was made by Heinrich Dressel- he identified 40 types. Other researchers who studies amphoras (typology, evolution) were: F. Schumacher, F. Pelichet, M. Almagro, N. Lamboglia, M. H. Callender, M. Beltran Lloris, G. Kuzmanov, D. P. S. Peacock, D. F. Williams, M. H. Kelemen.

The amphora originates in the cannanit vessel, known in the 15th century B.C. which is very similar to the amphora. The Phoenicians took over the two handled amphora. The Greek amphora is totally different from the Phoenician. In the 6-5th centuries the amphora became almost the unique container used in trade. In the 3-2nd centuries the versions produced in Greece will be the prototype for the Roman amphora, also known as the Graeco-Roman amphora.[93]

[90] Mrozek 1971, 451
[91] Bărbulescu (coord.) 2005, 79
[92] Opaiț 1977-1978, 310-314
[93] Ardeț 2006, 21-26

Wine was one of the most common products transported in amphoras. It came to Dacia from Italy, Gaule, Hispania, Greece, Asia Minor and the north of Africa. In Dacia the 43% of the imported products were represented by wine. [94] 45 amphora types can be distinguished in Dacia for the 2-6th century A.D.

A. Ardeți based on the study of the amphoras from Dacia drew some conclusions:

- 81% came from cities, 11,68% from fortresses, 7,86% from rural settlements.
- 45 types of amphora were identified, coming from 14 provinces of the empire (29% from East, 62% from West and 9% from Africa).
- 44,85% were for olive oil, 43,01% for wine, 6,61% for fishproducts and 5,51% for olives.
- Wine was brought to Dacia from Asia, Moesia Inferior, Italy, Pontus et Bithynia, Gaule, Crete, Cyrenae, Egypt, Syria Palestina, Baetica, Africa Proconsularis.
- The main acces routes to the province were the fluvials, for both western and eastern products. [95]

4. Animal breeding

a). Main breeds

From the beginings the Roman economy had a pronounced pastoral-agrarian character. The basis of the Roman economical life of the first centuries was agriculture and animal breeding. The most appreciated animals were cattle, sources of meat, milk, cheese, fertilizer, horns, bones, skin and help for pulling carts and ploughing. Very valuable were the horses, too, especially for military and sporting use. The main breeds were cattle, horses and sheep, but also were bred pigs (their meat was appreciated by all the social classes), chicken, goose (for meat and eggs). An important by-product was the natural fertilizer, used for cultivated fields and vineyards. [96]

Many towns in Italy had special markets for selling live-stock. Rome in the 2nd century B.C. had *forum boarium* (the cattle market) and *forum suarium* (the pig market). Aquilea, Atina, Falerii, Ferentinum had *fora pecuaria*. Certainly other towns had similar markets, supplied from the farms nearby.

Cattles were the most important thanks to the role played in the cereal cultivation, the second place is occupied by the horse, a companion of the farmers from the earliest times. One of the oldest uses of the horse was riding. The rein was known, but the Romans didn't know the seddle. Horses were also used at war.

[94] Ardeț 2006, 47-50
[95] Ardeț 2006, 246-264
[96] Conti 1993, 138-139

A reliable companion of the smallholder and the poor was the donkey. It helps him to plough his field, to grind his seeds. Mules were also important, Columella and Varro wrote about the best techniques to breed better animals.

Sheep and goat were also very important in the Roman agrarian economy, giving wool, milk and meat. Pigs ensured the largest quantity of the consumed meat for the Roman peasant, but their meat was consumed by the wealthy people, too.

Every peasant household had birds (chiken, goose, pigeon) for meat and eggs. Dogs were bred for hunting and to defend the farm. Dormice (*Glis glis)* were considered a delicacy and they were bred and fattened in special earthenware containers (*gliraria*).

Animals were bred as pets, as a hobby (entire groups, fish ponds) or for sport (wild animals for hunting, dogs used for hunting, cocks for fighting).

Greeks and Romans loved having pets. Many animals were bred as pets: dogs, monkeys, snakes, birds, rabbits, cats, turtles,fish.

b.) Pastoral feasts

It is interesting to tell of some pastoral feasts connected with animal breeding. *Lupercalia* was held in the middle of February, in the honor of Lupercus, who protected flocks from wolves. The purpose of this feast was to gain the fertility and fecundity of flocks and women.

A similar popularity had the *Palilia*, in honor of the godess Pales, the protector of flocks, sheperds and pastures, one of the oldest deities of Rome.

c.) Animal breeding in Dacia

In the Danubian provinces two types of animal breeding can be seen: the primitive breeding of the locals and the more evolved of the Romans, which imply a controled breedind and the selection of breeds to increase productivity.

The introduction of new breeds led to the growth of animal statures with 16-17 cm, even if differences in dimensions can be seen in different areas. Besides the larger, new breeds, the smaller, local ones can also be found. In the Danubian areas we can see the presence of different breeds bred together: 2-3 horse breeds, 5-6 dog breeds. Probably the new breeds were often crossbred with the local ones. Dacia, due to its geographical realities was suitable for animal breeding: alpine pastures for summer, the plain areas for winter.

Alexandru I. Gudea and Nicolae Gudea wrote about written and epigraphical sources concerning the existence, the use and the breeding of animals in Dacia.[97] Other evidence for the practice of animal breeding is the discovery at Potaissa of scissors used to shear sheep[98] and ichonographical sources that present different animals: horse, dog, rabbit, sheep. Important

[97] Gudea, Gudea 2000, 245-246
[98] Bărbulescu 1994, 124

evidence are the archaeological discoveries, too: hoof, dog pow and bird traces, wild and domesticated animal bones from fortresses and civilian settlements, a four wheeled toy-cart pulled by a horse, carriages or yokes, bronze pieces from harnesses, bronze and iron pieces from trappings.

Bone studies for the Dacian period show the species commonly consumed by the population. Prevailing were sheeps, goats, followed by cattles, pigs. The bird and fish bones were more rarely preserved.[99]

The products themselves testify for the processing of the leather (harness belts, shoes, clothes, belts) and also the reference to a tanner slave (*coriarius*- CIL III, 14492), named Titus on an inscription from Sucidava. Another job related to animal breeding is the processing of bones and horns. Various objects were made of bone and horn: hair and sewing pins, spoons, beads, combs.[100]

Some similarities can be seen between the situation from Dacia and that from Pannonia. The Roman conquest brought a quantitative and qualitative growth of the number of domestic animals. New breeds with a higher productivity were introduced. In the Roman period horses are taller and their number is much higher in the military settlements. A growth of the size of the animals can be seen also at cattles (16-17 cm in Pannonia, 15-20 cm in Dacia), but there are no important diferences in the breeding of sheeps, goats and pigs. For the dogs a race diversification can be seen (dogs for hunting, watchdogs, small dogs as pets). In both provinces animals were bred also for commercial purposes, a part of them were sold to the Roman soldiers, in markets or even exported. Game is more often found in rural or military settlements (probably the meat from domesticated animals is completed with that of the game).

There are certain changes and characteristics that appear after the Roman conquest in different provinces. To these we can add the peculiarities of every area.

d.) Archaeozoological studies

Archaeozoological studies are very important for this study, they are evidence for breedind different animal species in Dacia. Even if they aren't very numerous, these studies show us the animal breeds, the purpose of breeding (work, milk, wool, food), the way and the age at which the animals were sacrificed.

For Dacia Pannonia, Moesia Superior and Moesia Inferior were important, because from these provinces came to Dacia the most settlers, military units, imported animals and the trade with Rome goes through these provinces.

The most important species from the neighboring provinces were the domestic ones: cattles, pigs, sheeps, goats, horses, birds, dogs. Game is not so important (deer, hart, boar). In Pannonia the most

[99] *Istoria românilor,* I, 766
[100] *Istoria românilor,* II, 183, 185

numerous are the cattle bones. The use of horse meat as food is debatable. Dogs were probably not consumed.[101]

Some conclusions can be made based on the bone studies from different fortresses and settlements from Dacia. The procentage of wild animals is usually under 5-6%. Cattle, sheep, goat, cat, dog, horse, chicken, goose were identified from the domestic species and deer, hart, boar, fox, wolf, partridge, beaver, hare, bear, squirrel from the wild species. From the numerical point of view three main species take shape: cattles, sheeps-goats and pigs. In the majority of the sites the first place is occupied by cattles. The secondary species (horses, dogs, birds) appear in small procentages.

If we compare the situation from Dacia with that from Pannonia, Moesia Inferior and Superior we can see that there are no major differences.

Based on the archaeological studies some general conclusions can be drawn concerning animal breeding in the Roman period:

- The Romanization process influenced animal breeding, exploitation and administration of resources resulting animal breeding.
- In the Roman period we can see a quantitative and qualitative growth of the procentage of domesticated animals.
- In the Roman sites we can see a more often alimentary use of cattles.
- Morphological modifications occure at some species. New breeds appear, the primitive Dacian ones disappear or reduce their number. Extensive breeding was replaced by an intensive one, primitive breeds by superior, more productive ones.
- The importation of new breeds begun in the Dacian period became a current practice in the Roman period.
- The new urban settlements determine an intensive breeding for their own use and for intensive consumption. The traces from the bones show a certain cuting system, the meat was probably bought already portioned from a space intended for this type of activity (butcher's shop).
- The romanization process brought morphological changes, new breeds, increase of productivity but it is also reflected by animal names in Roumanian (cattle, calf, ox, bull, lamb, goat, kid, dog).
- For cattles the stature is taller with 10-15 cm.
- Smaller changes can be seen in sheeps and goats.

[101]Gudea 2009, 35-46

- No morphological changes can be seen at pigs, which shows the keeping of an easy, extensive exploitation model.
- Horses got taller with 10-15 cm.
- The most varied seems to be the dog breeds: smaller, vigorous, bigger, short.[102]

e.) Veterinary medicine

Several ancient authors dealed with agriculture and animal breeding, pointing out that there existed a zootechnical science doubled by a veterinary medicine (Varro, *De Re rustica,* Cato the Elder, *De Agri Cultura,* Vegetius, *Ars Mulomedicinae*, Columella, *De Re Rustica*, Pelagonius, *Ars Veterinaria*).

The association of zootechnical and veterinary elements with agriculture show the importance of working animals.

There are no evidence of veterinaries in Dacia. It is known that in fortresses butcheries functioned and animal hospitals (*veterinaria*) were outside the fortresses, like the stables for animals (working or those destined for consumption). Some veterinary instruments discovered suggest that they could have been used in the treatment of animals.[103]

5.Beekeeping

Bees and beekeeping played an important role in Roman everyday life. Honey was used in aliemntation but also in the preparation of remedies. Wax was the raw material for the biggest part of the lighting system. This is why probably Romans practiced beekeeping from the earliest times. The main literary sources regarding bees and beekeeping are: Varro (III, 16), Columella (book IX), Plinius, Palladius and the XVth book from *Geoponika*.[104]

In ancient Rome honey had many uses, not only for cakes and sweets, but also as a preservative. Apicius recomended the preservation of meat and fruits with honey.

Honey was an important ingredient for sweets, sauces, dressings and was used even as a glaze for ham.[105] It could be consumed raw, as dessert by the rural population. It was used to prepare sweetened beverages: *mulsum, aqua mulsa, hydromel*. If *aqua mulsa* was left to ferment it could turn to *aqua mulsa inveterata*, a golden liqueur, similar to white wine. The most popular was *mulsum*, for which the best wine and the best honey was used.[106]

Honey was used to prepare different aromatic oils, parfumes and other cosmetics, but also in medicine, alone or mixed with other ingredients.

[102] Gudea 2005, 248; Gudea 2009, 98-99
[103] Gudea 2005, 248; Gudea 2009, 90-93; Gudea 2007, 38-40
[104] White 1970, 331
[105] Brothwell 1969, 79-80; Bortolin 2008, 22-24
[106] Bortolin 2008, 24-26

Other important product of the bees was the wax, which also had a lot of uses: lighting, for waxed tablets, for embalmment, in medicine, for statues and paintings.[107]

For Dacia we have no actual information about beekeeping. A clue might be an inscription that speaks about Diana Mellifica, an interesting an unique epithet, which could be associated with bees or beekeeping.[108] Cumont brought the epithet in contact with the honey used in the cult of Mithras, others considered her to be a local deity, but *mellifica* could be a function of the forrest patron.

Clues for the practice of beekeeping an the use of wax in lighting might be the candlestick fragments discovered in Dacia (Răcari, Potaissa). Even if lighting with candles was less widespread than that with lucernes, the discovery of these kind of candlesticks also in other parts of the Roman Empire prove this practice.[109]

Even if there are no certain proofs for beekeeping in Dacia, we could assume the existence of this. Today, also, many areas of Romania are favorable for beekeeping, and probably a similar situation existed in antiquity, too. The Dacian population was familiar to honey, but we don't know if they knew apian practices or if they gathered honey from the wild. Romans, who consumed honey on a large scale, probably introduced in the province beekeeping techniques. Many settlers and veterans, familiar to the many uses of honey in daily life, brought knowledge regarding beekeeping, which they probably put in practice on their new rural farms. If the Dacian population had no knowledge regarding beekeeping they could learn and take over from the romans who came to Dacia. The waxed tablets from Alburnus Maior give us clues about the knowing and useing of wax, but wax could also be used in other purposes (for sealing different containers, for writing, for statuettes, for lighting).

Future archaeological investigations might give important evidence for apian practices in Dacia.

6. Hunting and fishing

a.) Hunting

There are two different types of hunting: bird hunting, named *aucupium* and quadruped hunting, *venatio.* Different weapons were used, and the hunter was accompanied by horse and hunting dogs.

Romans established hunting reservations (*vivaria*), which could be wide territories, wooded, loaded with game, enclosed and guarded. Apicius gives 38 recipes for game and only 30 for domestic meat.

[107] Fraser 1931, 137-146
[108] IDR III/5, 62, 52
[109] Bărbulescu 2001, 376-379

The meat of the boar was very appreciated, but other meats were also consumed: deer, hare, dormouse, snails, wild birds.[110] Hunting depended on necessity and local conditions. Mainly deer, hart, boar, beaver, hare, birds and turtle were hunted.

Probably rural inhabitants hunted on a larger scale than those from the cities. Some rich citizens from Rome hunted for sport. Hunting was a necessity for the small farmer, a common activity for the rural inhabitants and a sport for the aristocracy.[111]

Monuments showing hunting scenes offer us clues for hunting in Dacia. There are many objects made from the bones of domestic or wild animals (tools, jewellery). Other clue is the presence of dogs used for hunting. To these we can add the bone studies from fortresses and settlements, where wild animal bones were also discovered, along with the domestic ones.

The economical importance of the game is smaller. The procentage of the game in the Roman sites is a lot smaller than in the Dacian sites. In the Roman rural or military sites the proportion of game is a little higher than in the civile sites. In Dacia the procentage of wild animals is usually under 5-6%.

In the studies samples from the wild species were identified: deer, hart, boar, fox, wolf, partridge, beaver, hare, bear, squirell. Wild birds bones are almost absent, but this situation does not mean that they weren't consumed, rather that these kind of bones are perishable.

The Dacian population practiced hunting on a larger scale. Aspecially large animals were hunted: deer, boar, to which we can add hart, bear, hare. Hunting had a preponderant alimentary character, provideing an important part of the meat necessary for the inhabitants.

In the Roman period a quantitative and qualitative increase of the domestic species can be seen. Hunting continues to be practiced, especially in rural and military environments, supplementing the diet with wild meat. Hunting as a sport was practiced mainly by richer people. The geographical realities of Dacia (mountains, forrests, plains, hills) insured the presence of many wild species. The local population and later the settlers knew and exploited in a certain measure this natural wealth of the province.

b.) Fishing

Mollusks and shells were used in different ways, as: food, jewellery, vesel, symbol of rank, exchange coin, decoration. At Pompeii numerous marine invertebrates, fresh water shells and snails were discovered. Some are represented on mosaics, pantings and sculptures.[112]

[110]Faas 2005, 279-299*;* Alcock 2006, 82
[111] Green 1996, 222-260; Alcock 2006, 69-70
[112] Reese 2002a, 292-314

Writings about fish and fishing appeared in Roman literature when fish started to be raised in fishponds. Authors from the begining of the Empire were inspired by Aristotel's *The history of animals.* [113]

The Roman fisherman, alone or together with others, ensured the fish for the fish markets. Even if there were slave fishermen the majority of the commercial fishing was carried out by free people.

If the fisherman was also a fish merchant, he sold the catch on the nearest markets and collected all the profit. Sometimes fishermen sold the fish to merchants, who then sold it to the consumers. The main fishmarket from Rome was *Forum Piscarium*.

Most of the information about fishponds are provided to us by Varro, Columella and Plinius the Elder. There are two main types of fishponds: fresh water and salted water. These *piscinae* were used first to keep the fish alive until preparation, but then they constantly developed, becaming hatcheries.[114]

Fishponds arround Rome were divided in private and commercial. The commercial fishponds raised large quantities of fish to sell them on the markets. The private ones, usually with fresh water, ensured fresh fish for the inhabitants of the domain and delicacies for the owner. In them fish were also raised in decorative purposes or to offer the pleasure of fishing to the guests.

Oppian spoke about four different fishing techniques: with angle (useing hook and lead), only with line (held by the fisherman, with one or more hooks, method used aspecially for larger fish), with a basket (with a narrower neck), with trident (aspecially for tuna, but also cuttlefish).[115] For fishing different tools were used: net, angle, bait, some substances to intoxicate fish, trident, harpoon, baskets, torch fishing.[116]

We have no certain evidence for fihing in Dacia. For the Dacian period fishbones are sporadic, mainly bones from larger fish were preserved. However, fishing was practiced in settlemets from near water streams (in some fishing tools were discovered: hooks, net weights). Sea shells and snails weren't very important in diet. In some Dacian settlements many shells were discovered: Brad, Popeşti, Sucidava, Stenca.[117] For the Roman period fish bones were discovered in the fortress from Hinova, at Potaissa, Gornea, Gârla Mare.

The small amount of evidence is due to the fact that fish bones are perishable, but also to incomplete studying and inadequate gathering of the archaeological material.

Even if a clear image of fishing in Dacia can't be contoured (main fish varieties, techniques and fishing tools) it is sure that fishing was practiced by the locals and probably by the settlers who came in the new province. The rivers of Dacia (Someş, Criş, Târnave, Olt, Mureş, Timiş, Jiu,

[113] Corcoran 1964, 271-274; Alcock 2006, 75-76; Corcoran 1957, 11-20
[114] Radcliffe 1921, 222-230
[115] Corcoran 1957, 66-74; Gallant 1985, 12-16; Robert 2007, 230
[116] Corcoran 1957, 78-80
[117] Suciu 2001, 168

Argeş, Danube) ensured a variety of fresh water fish and sea fish could be brought from the cities from the shores of the Black Sea. Probably fish was consumed fresh or preserved (dried, in brine, maybe even fish sauce).

7. Salt mines

Dacia was rich in salt. Salt could be obtained from the evaporation of sea water or extraction from salt mines. Areas rich in salt were Sic (Cluj county), Domneşti (Bistriţa-Năsăud), Ocna Sibiului, Ocna Mureş (Alba), Mărtiniş (Harghita).

The problem of pre-Roman exploitation was discussed. The oldest salt production center is at Lunca-Poiana Slatinei from Moldova. In Transylvania the most relevant discovery for the Dacian period is that from Valea Florilor, where several wells were found. The inventory of this discovery consists of: a spade, three shovels, a sort of salt hammer, four levers, a trough. In Maramureş, in Valea Regilor similar objects and wells were discovered.[118] An almost identical discovery is that from Ocna Dejului and an other similar is that from a place called „ Slatina" from Figa, Bistriţa-Năsăud county, area known for it's richness in salt and brine sources.[119]

Three inscriptions discovered at Veţel and Sânpaul de Homorod (Dacia Apulensis) and Domneşti (Dacia Porolissensis) mention imperial officers (*conductores pascui et salinarum*) who administrated and rented pastures and salt mines to some cattle breeders-in CIL III, 1309, IDR III, 3, no. 119, IDR III, 4, no. 298.[120]

At Potaissa the salt appeared at the surface on the hill from the eastern and north-eastern fringe of the city and the exploitation in the Roman period is probable. We have no certain evidence, but the medieval and modern exploitations, the collapse of the vaults of the old mines and the appearence of salted lakes could have destroyed the ancient exploitations.[121]

The salt mines from Ocna Sibiului seem to have an economical importance in the Roman period. It is hard to belive that the inhabitants of the Roman settlement didn't know about the riches of the subsoil, aspecially when the salt can be found in depths of 3 m.[122]

There are information that in the Roman period salt exploitations could also be found at Cojocna, Sic, Pata, Ocna Dejului. On the Someş smaller, local exploitations are mentioned (Reteag, Căianu Mare, Ilişua, Beclean), where salt could be found in depths of 3-4 m. An important center was also at Sânpaul-Homorod.

Ancient authors do not mention technical means of salt production. The methods depended of the depth and density of the salt massive.

[118]Wollmann, Ciugudean 2005, 97-99
[119] Wollmann, Ciugudean 2005, 101-102
[120] Gudea, Gudea 2000, 245-246
[121] Bărbulescu 1994, 106
[122]Wollmann 1996, 242-243

Salt was important for people but also for the animals of the army. It plays an important role in alimentation and meat preservation. We don't know in which vessels salt was kept, probably in ewers or even wooden barrels. Salt mines from Dacia were in the imperial proparty and they were leased to *conductores pascui et salinarum.*

Many clues plead for a large salt production, that probably exceeded the internal needs and salt was also exported. Salt was important in human alimentation (spice, preservant), in animal breeding and due to the fact that Dacia was rich in salt probably it was exploited in large quantities. Salt export could have played an important role in the economy of Roman Dacia.

8. Imported foods

Archaeobotanical studies show that during the Roman domination many edibles were introduced in Central Europe, even if these did not replace the traditional aliments. Many novelties were incorporated in the local food production systems, becameing part of the alimentation, offering a larger variety of foods and tastes than before. Some were luxury foods in the begining of the Roman domination, but then gradually lost this status. Others, that could not be cultivated localy or called for considerable efforts, remained luxury products (rice, chickpea, black pepper, pistachio, almond, pine kernels, date, pomegranate, olive, melon, sometimes peach).[123]

Archaeobotanical studies were performed in 180 sites from Austria, Belgium, France, Hungary, Luxembourg, Netherlands, Switzerland. The majority of the archaeobotanical material was conserved carbonized or in moist environments. The imports in the Central European regions appear at the beggining of the Roman domination, mainly in military settlements. Gradually the new aliments penetrated also in the civil environments. After the consolidation of the Roman occupancy, some of these started to be cultivated localy, losing the status of luxury foods. In the late Roman period imports can be seen only in the civilian settlement from the southern area. Probably the real luxury products disappeared with the fall of the Roman Empire.[124]

a.) Trade in Dacia

Even before the Roman conquest Dacia exported agricultural products (cereals), animal products (cattle, leather), honey, wax, lumber, salt. It imported from the Graeco-Roman world manufactured products (fabric, bronze and glass vesels, jewelery), wines, oils, parfumes, ointments.

In Dacia are imported goods from the Greek cities of the Pontus Euxin and the northern docks of the Egeean Sea. At the end of the 2nd century and the beggining of the 1st the orientation of Dacian

[123]Bakels, Jacomet 2003, 542
[124]Bakels, Jacomet 2003, 552-555

trade turned from East (from the Hellenistic world) towards West (the Roman world, especially Italy).[125]

Trade existed between the settlements from inside the province (cities, villages, rural farms), between Dacia and neighboring provinces, but also with further areas. Dacia imported wine, olive oil, fish products, luxury products.

Even in the case of Dacia we could talk about different groups of aliments: the rare ones, which couldn't be cultivated localy (olives, olive oil, figs, dates, pepper). Probably those that could be localy cultivated were taken over from the Romans and cultivated in the province. At the beginning of the Roman domination the new aliments were imported, brought especially by the soldiers, and so they appear mainly in military settlements. Gradually they penetrate in the civilian environments, they start to be cultivated localy (those that could be). Those that could not be cultivated mostly because of the soil and climate differences from Dacia, remained imported, more expensive merchandise, available only for certain social classes.

Roman coins and merchants appeared in Dacia two centuries earlier than the Roman conquest. After foundation of the province, monetary circulation and trade intensified. The epigraphycal data shows that the majority of the merchants from Dacia are of an oriental origin. The second place is occupied by the merchants from Gaule.

The majority of the luxury pottery from Dacia came from Gaule, from the workshops from Lezoux or Graufesenque. *Terra sigillata* pottery was also imported from Germany, from the eastern region of the Rhine and Pannonia.[126] *Mortaria* were also imported and were discovered in different areas: Romula, Sucidava, Ulpia Traiana, Tibiscum, Apulum, Răcari, Stolniceni, Ilişua, Orheiul Bistriţei, Buciumi, Obreja. Amphoras for wine and oil are evidence for the trade between Dacia and other provinces of the Empire.[127]

Dacian products were discovered in other provinces and in the barbarian world. A part of them were discovered in the area between the Danube and Tisa. Probably also other merchandise, harder to identify archaeologicaly, were exported: dalt, wood, honey, cereals, wax, wool, lether.

In Dacia several customs were attested epigraphicaly or archaeologicaly, at the passing of bridges, rivers, at the crossing of roads from the inside of the province.[128]

In the pre-Roman period all the amphoras were imported from Greek areas, probably mainly by oriental merchants, through the Greek cities from the shores of the Black Sea. In the Roman period the first place between imports was occupied by olive oil, succeeded by wine. Fish, fish products and olives recorded smaller procentages.

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[125] *Istoria românilor*, I, 775-776
[126] *Istoria românilor*, I, 189
[127] Tudor 1968, 391
[128] Fodorean 2006, 336-337; *Istoria românilor,* II, 203-204

b.) Imported wine and oil

Wine and oil imports appeared first in Dacia in the 4th-3rd centuries BC, when the local aristocracy imported amphoras with wine from Tassos, Rhodos, Pontus intermediated by the Greek merchants from the Helenistic cities from the Dobrogean shore. The Greek stamped amphoras were discovered in Olteniei, Munteniei, Moldovei, but they couldn't be traded across the Carpathians, in Transylvania. During the Roman period a much deeper penetration of wine and oil trade can be seen, untill the north of Transylvania, at Porolissum.

Amphoras discovered in Dacia and dated after the Roman withdrawal prove the maintenance of wine and oil trade until the 4th century AD. Their consumption appear in the settlements of the migratory population and in the Romano-Byzanthine castles from the left shore of the Danube. Now imports came from the coasts and the isles of the Egeean.[129]

Andrei Opaiț thinks that if there is a correlation between goods and amphoras, the conic ones are for oil, the ovoids for wine and the globular-pear shaped for cereals and fish.

Wine arrived to Dacia from Italy, Gaule, Hispania, Asia and Northern Africa. From the total of 46 types of amphoras known in Dacia 43% are considered to have been used for wine. 73,5% of the wine is brought from Orient.[130]

45% of the amphoras known in Dacia were destined for olive oil. 55,73% of the olive oil came from the Oriental provinces, 30,32% from the western provinces and 13,93% from Africa.[131]

Before the Roman conquest wine and oil amphoras were imported from Greek areas, penetrating only in the extra-carpathian area (amphoras were hard to transport through the mountains). This does not mean that in the intra-carpathian areas, in this period, wine and oil were not imported, rather that these products were put in vesels that were easier to transport.

After the Roman conquest amphoras appear in the intra-carpathian areas, too, until the North, at Porolissum. The development of the road system favoured transport in many areas of the province. The majority of the oil and wine in the Roman period came from the oriental regions.

c.) Imported fish, fish products and other products

The amphoras considered to be used for fish and fish products came from Spain and Portugal. Fish product represent only 18% of the imports, and 66% of them came from the western provinces and 33% from the Orient.[132]

Olives were imported in the same procentages (46,66%) from west and Orient and 6,66% from Africa.

[129] Tudor 1968, 397-399
[130] Ardeț 2006, 47- 50, 256- 257, 262
[131] Ardeț 2006, 51- 52, 262
[132] Ardeț 2006, 52- 53, 262

Probably other goods were also transported in amphoras. Plinius said that some amphoras transported green bay leaves, Columella mentioned amphoras with grapes, plums, apples, honey. They could also be used for nuts, lentil, jam, ointments and medicines. Maybe some Dacian product were also transported in amphoras (fruits, honey, animal products).[133]

The majority of the fish and fish products came from the western areas. This could be explained by the importance of fish and fishsauces in Roman alimentation. The relatively small procentage (18%) of these products in Dacia could prove other tastes or culinary customs from the Roman kitchen, in which fish sauces played an essencial role (especially *garum*, used for sauces, meat, vegetables, desserts).

Besides these four main imported products, surely other aliments were also imported (certain vegetables, fruits, maybe beverages, meat), but their presence is harder to distinguish.

III. Consumption

1. Food preparation

a.) Tableware and kitchenware

The cook of the house prepared the food or in some ocasions hired cooks. Simple ways of preparing meat were roasting and boiling. Game, fish or meat chops were often roasted on spits. Romans prefered roasting meat and fish in clay vesels, put directly on the fire or on iron grids.

Cooks had a large variety of vesels at their hand (bowls, jugs, ewers, lided vesels, storage cases). Large *dolia*, often buried, were used for storage (for wine, oil, cereals). *Mortaria* were frequently used in the kitchen. Numerous pans were used: *sartago, pater, patella, patina*. There were also lead and iron vesels, wood, bronze or iron ladles, grids, large variety of knives.[134] A special cathegory of cutlery is the combined spoon-knife. The majority had the spoon part from silver, bronze or bone and the blade of the knife from iron. Some even had inscriptions. They were dated in the 2nd-3rd centuries.[135]

In Dacia were discovered different types of kitchen pottery and metal tools. After the performance criterion vesels were classified in: *vasa escaria, vasa po(ta)toria, vasa coquina(to)ria,*vesels for pouring, keeping, transporting. Iron pieces discovered in Dacia are also important (fork with 5 teeth from Strâmbu[136], iron grid from Feldioara[137]).

In Dacia and in other provinces we can see that serving vesels are more frequent than those for preparing the food. Different explanations can be given for this. Maybe cooking vessels weren't so

[133] Ardeț 2006, 53- 54, 262
[134] Alcock 2006, 103-115
[135] Sherlock 2003, 331-335
[136] Crişan 1965, 218; Berciu, Popa 1963, 159
[137] Gudea 2008, 195

numerous or they were doubled by metal vesels. Another explanation might be the large fragmentation of some vesels and the imposibility to assign them to certain vesel cathegories. Conservation, discovery and catalogueing conditions might be another explanation.

b.) The kitchen

In the imperial period, the houses of the rich people from Rome had large kitchens. Fire was made in walled hearths but also on portable cooking machines. Usually kitchens were smaller but tooled with different vesels and cooking ustensils. Often the kitchen was near the baths and sometimes the latrine, grouping in one part of the house all the rooms that needed water and fire.[138]

2. Serving

a.) Table ware

Besides dishes, plates, smaller containers for salt(*salina*) and pepper(*piperatoria*) were also put on the table. Usually food was already prepared and cut when it was put on the table, so forks and knives were not needed, but spoons were used (*cochlear, ligula*). The vesels for liquids are also varied.[139]

The silver table ware (*ministerium*) included vesels for solid (*vasa escaria*) and liquid aliments (*vasa potoria*). Usually it consist's from jugs, paterae, trays, pepper containers, spoons, goblets, cups.

The pottery table ware can be divided in the same two categories: *vasa escaria* and *vasa po(ta)toria*. The first category consists of trays, plates, bowls. Drinking vesels are not very numerous (bowls, goblets, cups), fact that could be explained by their fragility and probably, the preferance for similar glass or metal vesels.[140]

It seems that in southern Dacia plates are more numerous and bowls more rare than in Potaissa. At Potaissa jugs are very rare, probably because here clay jugs and goblets were replaced by glass cups. Trays could be used in the kitchen, too, and plates were part of the table ware. Cups and goblets had different shapes. For drinking large pottery or glass cups were used.[141]

We can see that at Potaissa bowls are more frequent and plates more rare. A similar situation can be seen at Napoca, where 78% of the table ware consists of bowls. This fact could point to certain culinary preferences and the consumption of porridges and liquid aliments. The large number of pots could indicate the preference for boiling the food. In the two sites a similar situation can be seen in the case of drinking vesels: the number of pottery drinking vesels is reduced, fact that shows the use of similar glass or metal vesels.

[138] Salza Prina Ricotti 1982, 237-294
[139] Micheli 1990, 118-121
[140] Rusu-Bolindeţ 2007, 395-398
[141] Bărbulescu 1994, 141-142

Concrete and sure conclusions can't be drawn concerning the use of special types of vesels in certain ares, about the preference for certain vesels in certain workshops, about more complex assumptions concerning some culinary preferences, due to the fact that pottery, metal and glass vesels from different sites of the province were not studied unitary, the pieces were not assigned clearly to different vesel categories, the procentage of different vesel groups wasn't established.

3. Banquets

In the Roman world banquets were an important social rite. They were essential in the relationship of the elite with those below them, with potential supporters, with the entire community and in the relations with those from the same social class. They also marked the more humble meetings of the inferior classes, freed people, some slaves, in their religious guilds and associations. They appear in funerar rites and in the commemoration of the dead, they are typical for religious festivals. Many ancient authors give information about banquets, their hosts, costums, rites, food from the banquet (Cicero, Plinius, Juvenal, Martial, Horatius, Petronius), but these usualy refer to the higher classes.

To these we can add the archaeological discoveries of some rooms destined for banquets, evidence about the furniture, vesels, diferent items used in the banquets. Many artistic representations illustrate dinner and drinking parties.

Public banquets could have a sacred or unholy caracter, being linked to events from the political or military life. In the private cult, family participated to banquets in the honor of gods and ancestors. In the domestic cult there were many occasions for offerings and sacrifices.[142]

Food also plays an important role in the funerar banquets. There were certain rules as to food types and their preparation for the banquet. A decisive role is played by the social status of the people involved. Commemoration in poorer classes was different from that of the rich people. Changes in rite occure with the passing of time. Food from the funerar banquet consisted of eggs, vegetables, bean, lentil, salt, bread, poultry meat. On the grave food and wine was put. [143]

Also in Dacia appear many representations with banquet scenes, in which we can see different vesels, *panis quadratus.* Usually scenes are more frequent on funerary monuments. The appearence of this theme in Dacia shows similar customs and practices to those from the rest of the Empire. It would be interesting a comparative study between the motives from these representations or the way of representing certain things or ideas, to see if there are some peculiarities specific to the Dacian province.

IV. Conclusions

[142]Dosi, Schnell 1984, 302-308
[143]Lindsay 1998, 69-74

1. Comparison with other areas

At Mons Claudianus, in a more isolated area of the egyptian desert, at an altitude of 700 m is a fortified mining settlement, with stables, granaries, wells, tanks, a cemetery, temple, baths, storages. Tests showed the presence of numerous and various types of foods.[144]

A vague comparison can be made between Mons Claudianus and Alburnus Maior. Both are in the Imperial property, in the first case stone was exploited, in the second gold. In both cases are archaeological and documentary evidence. The waxed tablets from Alburnus Maior offer important information about foods, prices, administrative problems. Even if there are some similarities, the evidence from Mons Claudianus is more numerous, complex and well preserved. The soil and climatic caracteristics played an important role in the preservation of the traces. Buildings, vesels, different objects, faunal and carpological material discovered well preserved allowed the reconstruction of many aspects of the life of the inhabitants (alimentation, crafts, trade), offering a more complex picture than that from Dacia. Even if the information from the discoveries from Dacia are important, they are fewer and poorer preserved than those from Egypt. It is normal to bear in mind the differences that exist between the two settlements: different areas of the Empire, climate, soil, population, exploitation, degree of involvment in external trade, style and living standars.

Before the Roman conquest the British diet consisted in a limited number of basic foods (wheat, barley, pea, bean), linseed and a limited number of wild foods (especially hazelnuts). In the Roman period arround 50 new food plants were introduced. Some remained imports (pepper, sesame, date), but many became accesible in certain areas of Britain, for certain groups. The new aliments offered a widening of the consumable products, the numerous spices made posible new preparations and seasoning of the foods.

Probably a similar situation can be seen in Dacia, concerning some new aliments introdused by the Romans after the conquest. Initially products penetrated the higher classes, who could afford to by these new, expensive products. Gradually, plants that could be cultivated localy started to be cultivated and penetrated on a larger scale in the alimentation of the provincials. The products that could not be cultivated localy remained imports and were more expensive. The penetration of Roman products and customs knew differences based on the area, social class, degree of the presence of the Roman population in the area.

Even if they are areas faraway one from another, with climatic, soil and numerous other diferences, some similarities can be observed between Dacia and the Iberian peninsula, concerning the situation after the Roman conquest. In both areas agriculture was practiced before the coming of

[144] van der Veen 1998, 101-116

the Romans, but after the Roman conquest the agricultural production increased and trade intensified. A development and numerical growth of urban settlements and rural farms can be seen. *Villae rusticae* appeared in the most fertile regions. Sometimes in these farms agriculture is combined with animal breeding, viticulture.

Just like in Dacia, in many other provinces of the Empire some specific items of romanization can be seen: the growth of the agricultural productivity, intensification of trade, development of *villae rusticae* in the most fertile areas, the urbanization and colonization of new territories, the exportation of the main products of the provinces. The numerous differences are normal taking into account the peculiarities of every area (climate, soil, population, specific products, the relationship with the Romans, trade).

2. Situation before and after the Roman conquest

Literary sources are scarce and filled with gaps for the pre-Roman and Roman period as well. The main information are provided by the archaeological discoveries: carbonized seeds, bone remains, domestic inventory (pottery, metal vesels, kitchenware).

The diet of the Dacian population in the pre-Roman and than the Roman period consisted of a wide range and diversified aliments: cereals, vegetables, fruits, meat, dairies, wines, beer. The products could be consumed raw (vegetables, fruits), boiled (vegetables, cereals, meat), grounded into flour and transformed in bread (cereals), roasted, fried (meat). For sure there were differences between the alimenatation of different social classes. Besides the domestic plants and animals in the diet were also included the wild ones. Alimentation is always influenced by the social status, local customs and tradition, foods and animals specific and available in the region, the intensity of the trade with other areas.

3. Military alimentation

To insure constant and sufficient provisions for the army was always an imoprtant problem.

The basic diet in peace time consisted of: cereals, bacon, cheese, vegetables, sour wine, salt, olive oil. For these basic aliments a certain sum was deducted from the military pay. A larger variety of foods were available at feasts. Meat was a constant part of the military diet, and it could came from the provincials, from purchases, hunting, *vivaria* of the units, sacrifices. It was consumed the meat of domestic and wild animals, poultry, fish and mollusks. Other foods consumed were: milk, cheese, fruits, nuts and from the vegetables the most frequent were the beans and lentils.[145] All the evidence point to a very good diet of the Roman soldier, from quantitative and qualitative point of view.

[145]Davies 1971, 122-138

Soldiers played an important role in the spreading of Roman customs (culinary, too), traditions, techniques, knowledge. In many of the conquered areas transformed in provinces Roman soldiers introduced new foods, new preparing methods, new animal breeding techniques. Under the influence of the soldiers, the population near the fortresses gradually took over and often assumed the new items. Many of the provisions of the army came from imports and these new products started to be required also by the civilians, in the beggining probably the richer, who could afford to pay for these imports. Probably, with time, the plants that could be produced localy were taken over and introduced into local agriculture and the aliments that couldn't be obtained localy remained imports (like olives and olive oil). There is a close relationship between the military units and the civilian settlements form arround them: sometimes marriages, the civilians provided provisions, soldiers supplemented their ration buying foods from the civilians.

It is normal that there are differences in the diet of soldiers based on areas, period, ethnic of the troops, but overall it could be alleged that the army is carrier of Roman civilization and contributes to the diffusion of specific Roman elements.

4. Living standards

After the Roman conquest the consumer needs of the army triggered an acceleration of the economical activities of the civilian society. An intense development of agriculture and animal breeding can be seen. Are introduced new tools, methods of working the land. Peasents are challenged to produce more and more to pay their taxes. Due to the development of the substructure items a rise of the quality of life from Dacia can be seen.

After the comming of the Romans the living standards of the local population changes. This growth is not homogeneous and constant in all the areas of Dacia and in all the social classes. A quicker and bigger influence can be seen in the areas closer to military sites and especially in the higher classes of the society. Gradually the new life style, innovations and novelties start to penetrate all the social levels, in urban and rural environment.

For sure many of the new techniques and products introduced helped the increase of the living standards. Even if the new agricultural techniques, the new animal breeding methods led to the increase of productivity, we can't speak about a wealthy living and a growth of the riches of the locals. The new administration, new taxes, the large number of soldiers from the province ment an extra burden especially for the agricultural producers. The rural areas had to produce not only for own use and the needs of the cities, but also for the huge necessities of the army.

Generally we can say that there is an increase of the living standards after the comming of the Romans, but probably this is distinguishable especially in the higher levels of the society. The common population, especially the agricultural producers and maybe the craftsmen profited on a

smaller level of the introduced innovations, being heavily charged by the growing of the production necessities.

5. Final conclusions

V.Annexes

1. Bibliographical abbreviations

1.a. Periodicals and journals

2. Bibliography

2.a. Literary sources

2.b. Epigraphical sources

2.c. General studies

2.d. Special studies

2.e. On-line sources

3. List of illustration

4. Thanks