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LUSITANA 3 AMPHORA IN LUSITANIA: RESAMPLING THE COMMERCE AND CONSUMPTION OF LUSITANIAN WINE PRODUCTION

Although they have been characterized for decades, there is still lack of knowledge about the relevance of the Lusitana 3 type in the Lusitanian wine trade. A recent study of the amphorae of Olisipo (Lisbon), where Lusitana 3 are dominant among the wine containers, has highlighted the great development of wine production in the Tagus Valley during the 2nd and 3rd centuries AD. At the same time, the importance of this amphora type, with evident Gaulish influences, is noticeable in the wine trade of the province. However, this relevance is less recognizable throughout the remaining territory of Lusitania. The present study, which is based on the analysis of amphorae assemblages from several consumption sites in Lusitania, focuses on the Lusitanian wine trade and highlights the importance of the Lusitana 3 amphora in this context.

Lusitana 3 amphora – Lusitanian flatt-bottom amphorae – Roman wine production – Roman wine trade

1. Introduction

Although three decades have past since it was first identified and described, there is still a considerable lack of knowledge about the Lusitana 3 amphora type, with regards to its real importance and significance in the Lusitanian wine trade. The systematic recognition and documentation of this type in the territory of Lusitania itself, and also in the Mediterranean frame, has not yet been prioritized in research agendas.

A recent study on goods consumption in *Olisipo* (Lisbon), based on the extant amphorae material record (Filipe 2023), recognized the importance of Lusitana 3, revealing that it is dominant among the wine containers, and at the same time, highlighted the development of wine production in the Tagus Valley during the 2nd and 3rd centuries AD. However, this great development of wine production and commerce does not seem to be exclusive to Lisbon or the Tagus Valley, as suggested by the presence of Lusitana 3 in the ongoing work that one of the authors (RRA) is conducting on several amphorae assemblages from other Lusitanian archaeological sites, and also the research currently underway at the Roman *villa* of *Cardilium* (Filipe et al. 2024, in this volume), one of the sites where these amphorae were probably produced.

Thus, this new evidence has led us to ask some questions: what would be the commercial importance of these amphorae in other areas of Lusitania? Was it a homogeneous consumption scenario across the entire province? It was, therefore, from this perspective that we set out to analyse the trade of Lusitana 3 amphora type in Lusitania.

In this study, we evaluate the amphorae assemblages from several sites in the Tagus Valley as a starting area, following to other Lusitanian areas and consumption sites (cities, *villae*, other), with the aim of providing a general overview of the Lusitana 3 spread in this roman province, and focusing on

the weight that its consumption achieved, demonstrating the importance of this particular amphora type in the context on the Lusitanian wine trade.

2. The Early Empire amphorae production in Lusitania and the “birth” of the wine container Lusitana 3

2.1. The Lusitanian production: 1st – mid 3rd century AD

Why were the Lusitanian wine amphorae and Lusitanian wine exports recognized so late?

First of all, classical literature rarely mentions Lusitanian wine. Nevertheless, Polybius (XXXIV.8) refers to cheap wine in Lusitania and Strabo (III, 3, 1) mentions the existence of vineyards in the Tagus Valley well before the 2nd century AD.

Secondly, archaeological research on roman consumption in Portugal has focused primarily on fish products, and on the amphorae produced to export it, due to its more dominant volume of evidence (e.g. fish salting units all over the coast and main river valleys, a diversified repertoire of fish products amphorae, *tituli picti*, etc). Research on the production of amphorae in Lusitania goes back to the late 19th century, when José Leite de Vasconcelos excavated the first Roman kiln, located at São Bartolomeu de Castro Marim, in the current territory of the Algarve (Vasconcelos 1898; Almeida et al. 2021). Since then, especially in the last 40 years, several pottery workshops, where amphorae were produced, and kilns have been systematically documented (see Fabião 2004 for a detailed synthesis). In general terms, those workshops were located in four producing regions: the Tagus and Sado river valleys, the western coast (Peniche) and the Algarve coast. These regions shared a common specificity: they also corresponded to areas of production of fish-products, where

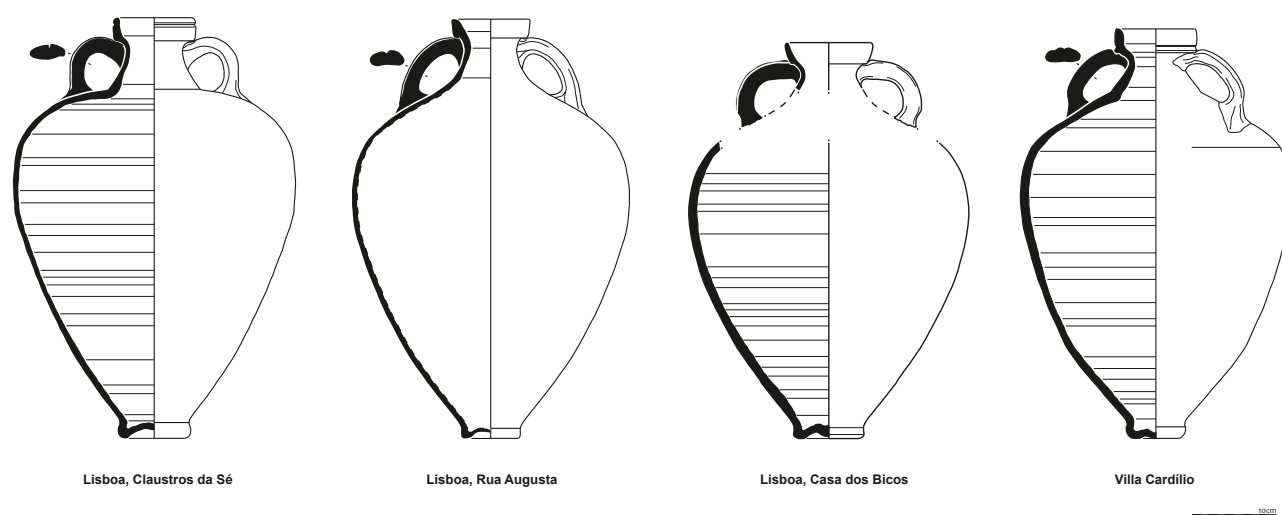


Fig. 1. Lusitana 3 complete examples from Lisbon and *villa* Cardílio (© V. Filipe).

several factories and production units have been discovered and studied (see Fabião 2004 for a synthesis, and Pinto et al. 2021 for an update), with the exception of Peniche, where no such constructions have been documented until now.

This intense exploitation of marine resources led to the large-scale production of amphorae used to package those products and which dominated the Lusitanian amphorae repertoire. These containers, whose representativeness in the archaeological record stands out in an expressive way, were initially composed of the so-called “Early Lusitanian” and Lusitana 12, and from the mid-1st century AD by the hegemonic Dressel 14, whose manufacture lasted until the beginning of the 3rd century AD (see Fabião 2008 and Viegas, Fabião and Almeida 2023, for synthesis and bibliography).

Thirdly, this “unidirectional” research led to the neglect of wine production and its hypothetical trade, assuming that its production occurred strictly in a local or regional context, primarily in rural settlements – *villae*, destined for self-consumption or close urban markets.

Concerning the production of wine amphorae, until the end of the 1st century AD/beginning of the 2nd century AD the data is sparse, indicating a low expression of Lusitanian wine transported in amphorae. With regards to the wine amphora types produced in Lusitania up to the end of the 1st century AD, they were all imitations of Baetican amphorae: *Urceus* type, Haltern 70, Dressel 2-4 and Dressel 28 (Filipe 2021). Only Lusitanian Haltern 70 achieved some expressiveness and dissemination, having even been documented in Southern Gaul (Djaoui and Quaresma 2016: 359; Quaresma 2018: 202; Almeida and González Cesteros 2016) and in the Netherlands. Nevertheless, the recognition of this type as a wine container is not fully accepted, with it also being considered as a fish-products container (Viegas, Fabião and Almeida 2023, for synthesis and bibliography), corresponding to a similar assimilation phenomenon as other types, like Dressel 1 from Hispania.

The recognition of a specific Lusitanian production of a wine amphora type – Lusitana 3 – only happened in the 1990’s

(Diogo 1987; Fabião 1998; 2008), and for several years even Portuguese scholars were quite reluctant in accepting it. This, of course, was reflected outside of Portugal, in the majority of other regions of the ancient Roman Empire, where a general lack of knowledge about the shapes of Lusitanian amphorae and the characteristics of its fabrics, have made its identification fairly difficult. This is particularly true of the Lusitana 3, even though it has been identified in several foreign contexts, namely in the Hispanic province of *Baetica* (Fabião 2006; García Vargas 2012; 2016; Bernal Casasola 2011).

But the main issue is that the intraprovince and extra province scenario of the Lusitanian wine transported in amphorae changed from the beginning of the 2nd century AD with the advent of the Lusitana 3 type.

2.2. The Lusitana 3 amphora: state of the art

Individualised by A. Dias Diogo (1987) with the number 3 of his Lusitanian amphorae typology, it was also named “Dressel 30 related type” in the production of Porto dos Cacos in the Tagus Valley (Raposo 1990), and, later, as variant A of Almagro 51C in the potteries of the Sado Valley (Mayet and Silva 1998; 2002).

Inspired by Gaulish flat-bottomed models, Lusitana 3 is characterised by an ovoid or pyriform body, ending in an annular foot. The rim develops as a vertical or arched smooth band with a subrectangular or subtriangular section on the outside, sometimes with one or more thin grooves on its external face. Starting just below the lower part of the rim, the handles are arched or semi-circular in profile, small in width and thin, usually with one smooth longitudinal groove and occasionally with more than one, resting on a broad, rounded shoulder (Diogo 1987: 184; Raposo 1990: 126; Mayet and Silva 1998: 122; Quaresma and Raposo 2016) (fig. 1).

The oldest archaeological contexts in which the Lusitana 3 is documented seem to date from the beginning of the 2nd century AD, not being possible, for the moment, to date the

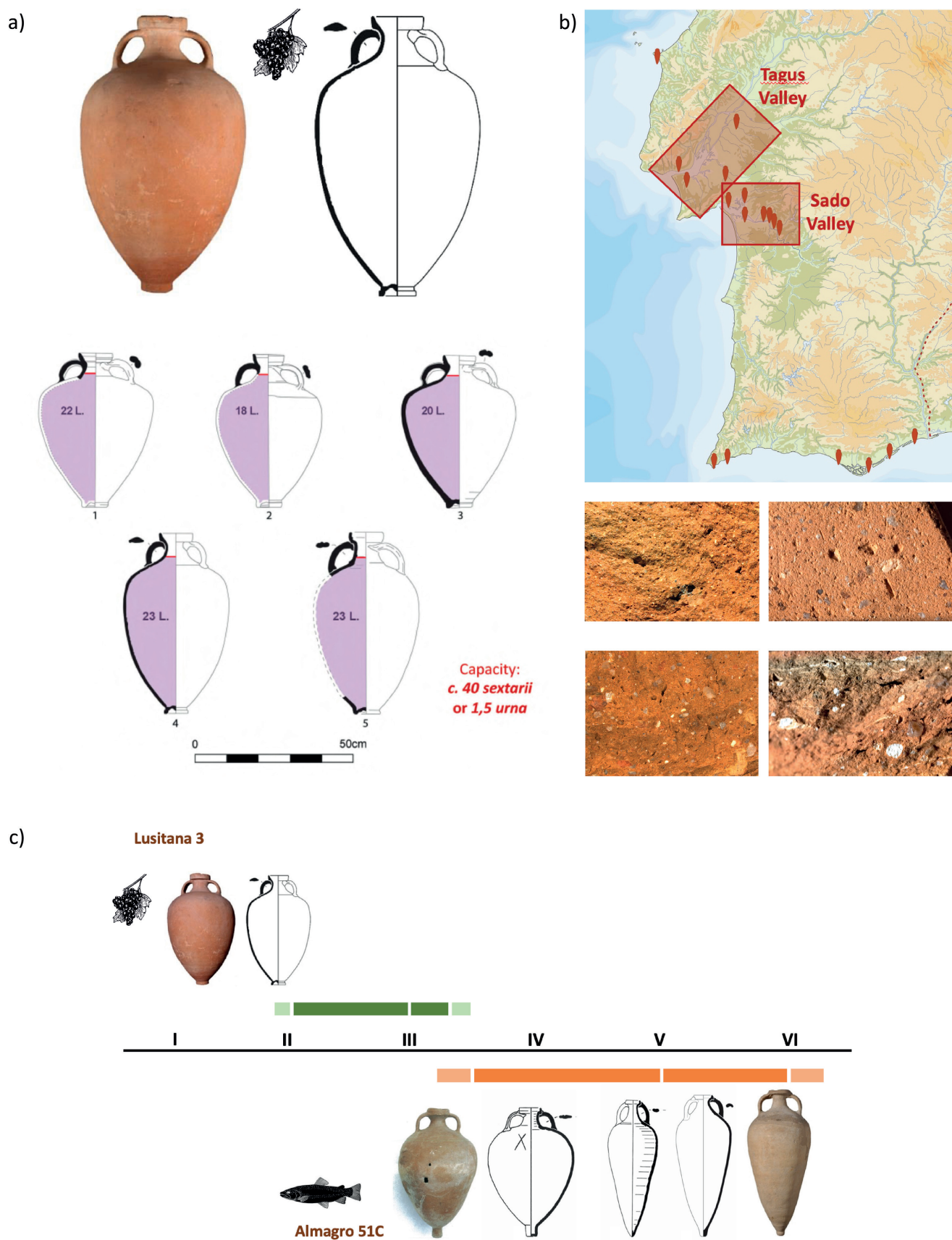


Fig. 2. Lusitana 3. a) general morphology (after Diogo 1987) and capacities (after Viegas, Fabião and Almeida 2023); b) production areas and petrographic samples (© R. R. de Almeida and V. Filipe); c) life span schema of Lusitana 3 and Almagro 51C (© R. R. de Almeida and V. Filipe).

beginning of its production in the end of the previous century. Its production lasted until the middle of the 3rd century (Fabião 2008; Mayet and Silva 2016; Quaresma and Raposo 2016).

In the Tagus Valley, Lusitana 3 production is attested at the workshops of Porto dos Cacos (Raposo 1990; 2017), Quinta do Rouxinol (Duarte 1990; Duarte and Raposo 1995; Raposo 2017), and maybe at Garrocheira (Amaro and Gonçalves 2016). In the Sado Valley it was produced at the workshops of Pinheiro (Mayet and Silva 1998), Abul (Mayet and Silva 2002), Enchurrasqueira, and possibly at Quinta da Alegria (Fabião 2008; Quaresma and Raposo 2016) (fig. 2).

Although they are usually considered to be wine amphorae, there is still a lack of direct evidence concerning contents to prove this. The most compelling evidence for it being a wine container is its morphological characteristics and its similarity to Gauloise 4, which are usually pointed out, and also the existence of some exemplars pitched inside (Diogo and Alves 1988-9: 230 and fig. 2, n. 1; Quaresma 2005: fig. 2, n. 2), as well as its chronological non-coincidence with the periodisation of Lusitanian fish sauce amphorae (Diogo 1987: 184; Fabião 1998: 185-186; 2008: 735). On the other hand, other authors argue that its contents were fish-products, based on the assumption that this type corresponds to the first evolutionary stage of Almagro 51C because on the Sado workshops this type only “appears” in contexts from the 3rd century AD in association with other fish-products types (Mayet and Silva 1998: 122; 2002: 177) (fig. 2).

Recently, it has been highlighted that there are three modules of this amphora with different capacities (Viegas, Fabião and Almeida 2023: 130-131). According to these researchers, the capacity of the “conventional” module of Lusitana 3 would be about 22 litres (40 *sextarii*, 7 *congi*, or 1.6 *urna*). Module 2 had a capacity of about 17 litres (30 *sextarii*, 5 *congi*, or 1.25 *urna*) and module 3 at 11 litres (20 *sextarii*, 3.5 *congi*, or 0.8 *urna*). Modules 2 and 3 are apparently a minority, and one should not overlook the fact that only with complete pieces is it possible to tell which module the piece belongs to (fig. 2).

3. New data: resampling Lusitana 3 provincial consumption

Until a few years ago, the Lusitana 3 distribution in the current Portuguese territory was considered to be relatively discreet, but recent research has shown its common presence in the lower Tagus and in the Lisbon Peninsula, though not particularly representative and, to a lesser extent, in the Sado Valley, in the interior of Alentejo, and also sporadically in the Algarve, on the Lusitania southern coast.

Considering that Lusitana 3 was produced in substantial quantities in the Tagus and Sado valleys workshops, its low presence (in quantitative terms) in most of the published amphorae assemblages of Lusitania comes as quite surprising. Equally surprising is its apparent absence in several consumption centres of the province, some of its main cities and *villae*, both inland and along the coast; our knowledge is even more bleak in north-western Hispania, where it does not seem to be documented. Recent studies, namely in *Ammaia*

(Vendetti 2016), *Emerita*, the capital of the Roman province of Lusitania, nowadays Mérida in Spanish Extremadura (Almeida and Sánchez Hidalgo 2013: 50; Almeida 2016: 207), and particularly in *Olisipo* (Filipe 2023), actual Lisbon, the most important port of the Atlantic façade, demonstrates that not only did Lusitana 3 amphorae play an important role as intervenient in the long distance trade to inland territories, but also how abundant they were with regards to the supply of Lusitanian wine to the main maritime city of the province (fig. 3); at the same time, current research at *villa* Cardílio (Diogo and Monteiro 1999: 203; Filipe et al. 2024), a Roman *villa* nearby the Middle Tagus basin, the Lusitana 3 are very dominant allowing us to consider this site was likely one of its production centres. Furthermore, we believe that the general consumption scenario known for Lusitania remains underestimated, due to problems associated to research bias. It must be stressed that to this day there is still a lack of quantified data/amphorae assemblages of consumption centres of Lusitania, which is why the reception/consumption of this amphora type in particular is now the focus of our attention.

The present study is a new reading of the known data in addition to new data collected in the frame of our present studies, with the intention of overcoming the existing gaps of information and to amplify the picture described above concerning the trade of Lusitana 3 amphorae and wine trade in Lusitania.

The questions we sought to answer with the analysis of these samples involved understanding, on the one hand, how widespread Lusitana 3 was in the territory of the province of Lusitania, and on the other hand, in what proportions it reached places of consumption and its statistical significance in the general consumption of goods transported in amphorae, and wine in particular.

To carry out this study, in a first phase, we analyzed and quantified amphorae assemblages of c. 150 sites in Lusitania, both unpublished and published, consisting of a global sample of around 14,549 amphorae individuals (MNI) of all types. Lusitana 3 amphorae were registered in 58 of these sites (tab. 1, with bibliography; fig. 4, b).

From the outset, in general terms, Lusitana 3 is currently represented in the amphorae assemblages, and normally surpassed in quantitative terms by Lusitanian fish amphorae types Dressel 14 and Almagro 51C.

From the analysis of its spatial distribution, it is worth highlighting, firstly, its absence in the territory north of *Conimbriga* (fig. 4, b-d; tab. 1). The northernmost places where they were documented are Eira Velha, Quinta do Ervedal and *Egitania*/Idanha-a-Velha. In the opposite extreme of Lusitania, in its meridional area, Lusitana 3 are attested in scarce quantities and with low statistical representation, on the majority of the assemblages as well as in the wine trade of the main cities, *vici* and *villae* on the current Algarve coast that had port structures/facilities or anchorage conditions, such as Monte Molião, *Ossonoba*/Faro, *Balsa*, Cerro da Vila, Loulé Velho or Quinta do Lago (fig. 4, b-d; tab. 1). A bit further to the north, on the southwest Atlantic façade, it is documented on coastal sites of Ilha do Pessegueiro and Sines, and inland, towards the interior of the important agricultural territory of Baixo Alentejo, it is recorded in Miróbriga, Cerrado do Castelo,

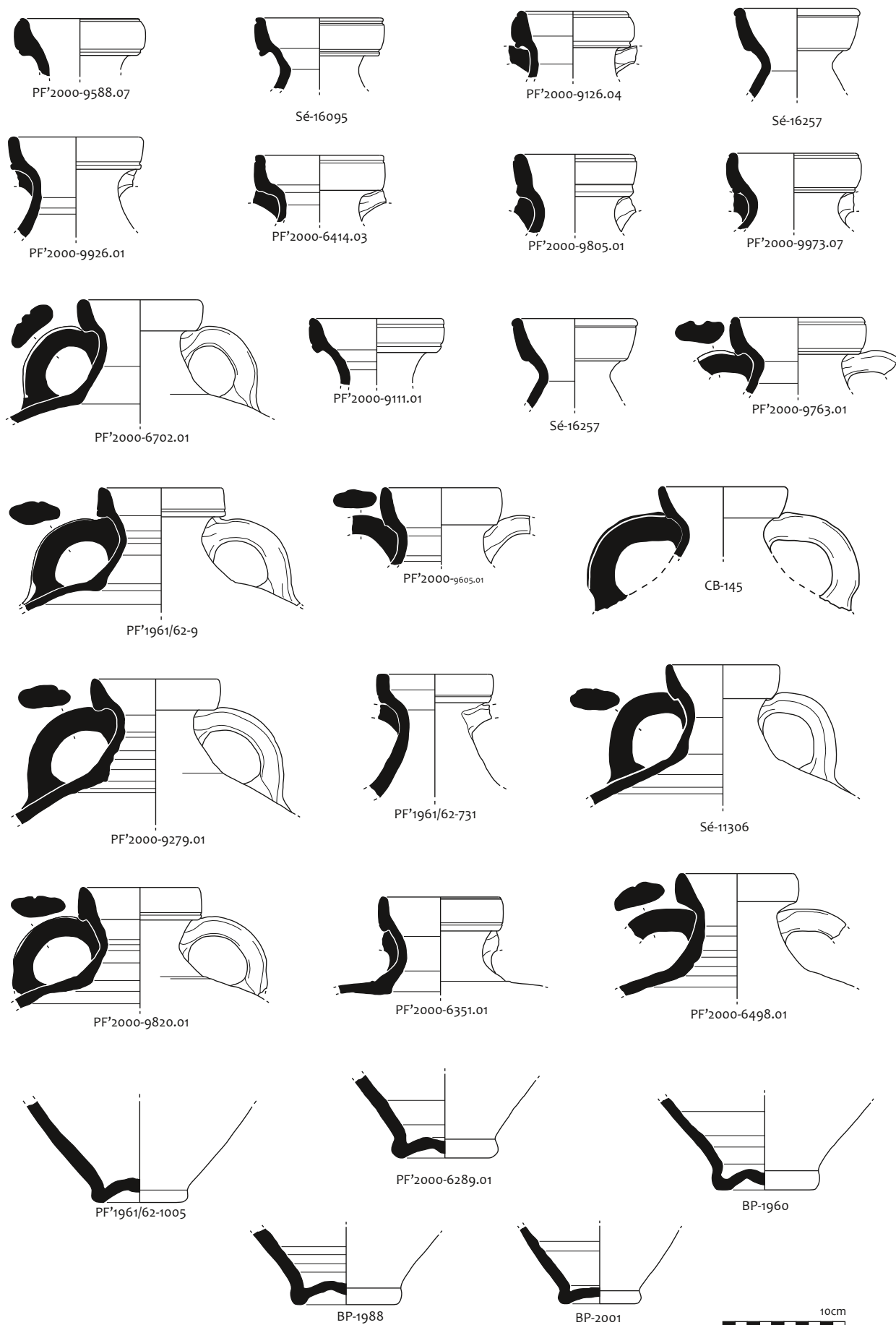


Fig. 3. Lusitana 3 fragmentary examples from Lisbon (after Filipe 2023).

Pax Julia, Monte da Cegonha and São Cucufate. Of all these places, the only place where Lusitana 3 is significantly represented is at the city of Miróbriga.

Quite diverse and relevant is the central western half of Lusitania, where the highest number of occurrences and the denser dissemination of Lusitana 3 can be traced, with particular prominence in the Tagus Valley. In the interior of the territory, bordering the roads heading towards Mérida (**fig. 4, b-d; tab. 1**), sites such as São Pedro, Santa Vitória do Ameixial, *Abelterium* and Torre de Palma stand out, with it occurring in the city of Ammaia. Further within the territory, already in Merida's direct influence area, it does not seem to have reached great expression in the *villa* of Torre Águila nor in the provincial capital of *Emerita Augusta* itself, where a different pattern of consumption has already been demonstrated (Almeida and Sánchez Hidalgo 2013; Almeida 2016).

On the coast of this central strip, although attested in places such as Parreitas, *Eburobritium*, Freiria and São Miguel de Odrinhas, Lusitana 3 only acquires some quantitative expression at Alto da Cidreira, near Cascais (**fig. 4, b-d; tab. 1**).

As stressed previously, the Lower Tagus Valley is simultaneously the region where a greater concentration of sites with Lusitana 3 is recorded and where a greater expressiveness of this type is observed, representing in almost every known amphora assemblages somewhere between 10% and 30% of the consumed amphorae/goods. The exceptions are, on one hand, Santarém/*Scallabis*, Vale de Tijolos and Porto Sabugueiro, with weaker representations (between 1% and 10%), and, on the other hand, by *Villa Cardílio*, where Lusitana 3 represents 50.9% of the total sample. Concerning the first exceptions, its absence at Santarém is certainly explained by the lack of studies of Early Empire assemblages from that city, fish-products amphorae and to consumption contexts from a chronological span prior to the existence of the Lusitanian wine types achievement; similar situation is the one of Porto Sabugueiro, whose occupation ended in early Roman times. The case of *Villa Cardílio* is different, where it is worth noting that the high percentage of this type may indicate the export of wine produced in the *villa* (Diogo and Monteiro 1999; Fabião 1998), something that the research project we are currently developing there will seek to clarify (Filipe et al. 2021).

Looking now at the role played by Lusitana 3 amphorae from the perspective of wine consumption in Lusitania between the early 2nd century and mid 3rd century AD, first of all, it has to be mentioned that the number of sites with quantified samples is much smaller. Besides this, from these assemblages, the number of those that are representative enough is even smaller, statistically speaking. Therefore, the data presented here and the trade/consumption values must be seen with caution and mainly as a potential approach and outline of main trends for further research.

The first conclusion concerning wine consumption that can be read from amphorae reception in Lusitanian sites is that it is completely dominated by Lusitana 3. To the north of Lusitania, the city of *Conimbriga* corresponds to 38% of wine consumption in the Principality, and further into the northeast territory, at *Egitania*/Idanha-a-Velha, it reaches just 15%; is quite tempting explain its weaker presence in this city through the presence of local wine production, given that it has significant local amphorae (Banha 2010).

The major occurrences of Lusitana 3 are undeniably in the Tagus Valley. In urban places such as *Ierabriga*/Monte dos Castelhinhos and *Olisipo*/Lisboa, Lusitana 3 represents between 50% and 70% of wine consumption. The dominance of Lusitana 3 at *Olisipo* between the 2nd and 3rd centuries AD, demonstrates its importance to the trade of the Lusitanian wine and to the supply of the most important Lusitanian maritime city (Filipe 2023). Still in the Tagus Valley, but further into the interior of the province and served by one of its main terrestrial axes, at the city of *Ammaia*, an identical statistical expression is observed, reaching 50%.

On rural sites like Ponta do Mato, *villa* of Almoínhas, *villa* of Quinta da Barradinha, *villa* of Vale de Tijolos and *villa* Cardílio, Lusitana 3 represents between 50% and 91% of the wine consumption, while in *Eburobritium* it falls to 23% and at *Seillium*/Tomar only corresponds to 30% of the sample, where other imported wines are more dominant (**fig. 4, b-d; tab. 1**).

In the Sado Valley, surprisingly, the expression of Lusitana 3 in wine consumption only stands out in Salacia, where it represents 30%, it being relatively small at Tróia, where it represents only 14%. This reduced expression of Lusitana 3 in the Sado Valley should only be apparent and probably more related to the scarcity of studies, especially considering that this type was also produced in that region.

Beyond the particular percentual value in each of these subregions, the present data on the Lusitana 3 presence also indicate an important increase in wine production in the Tagus and Sado valleys from the end of the 1st century AD, with a sufficient surplus to enable exports to other provinces of the Empire.

Concerning *Emerita Augusta* and its territory, as mentioned above, Lusitanian wine or wine-based products haven't reached a significant market share, with Lusitana 3 not exceeding 6% of wine amphorae. This doesn't seem to be accidental but indeed an intentional and differentiated pattern of consumption, dominated by Italian, Central and Eastern Mediterranean wines (Almeida and Sánchez Hidalgo 2013; Almeida 2016). A similar scenario can also be observed in *Pax Julia*, in the interior of Alentejo territory (**fig. 4, b-d; tab. 1**).

On the Alentejo coastal strip, at Sines and Ilha do Pessegueiro the Lusitana 3 amphora represents 89% and 73% of the wine amphorae, and on the Algarve coast the panorama changes. In spite of standing out at sites like the mouth of the River Arade and Loulé Velho, representing 20% and 26% of the wine amphorae respectively, and at Balsa decreasing to 11%, the majority of sites, both cities and *villae* (**fig. 4, b-d; tab. 1**), are characterized by a minimum number of presences of this type, showing that Lusitania's extreme meridional area has been outside the scoop of the particular trade and market of Lusitana 3 amphorae and Lusitanian wine produced on the Tagus and Sado Valleys.

In summary, distinct consumption patterns can be observed in the territory of Lusitania, with different proportions of local/regional items, with emphasis on the Tagus Valley and the Alentejo coast, where the presence of Lusitana 3 is constant and almost always the most common, demonstrating the success of Lusitana 3 as the main Lusitanian wine container during 2nd and 3rd centuries AD.

no. Map	Site	Total amph. MNI	L3 % MNI in total of the samples	% MNI of the wine amphorae late 1st - mid 3rd AD	% MNI wine amphorae by regions late 1st - mid 3rd AD						
					<i>Lusitania</i>	<i>Baetica</i>	<i>Tarraco- nensis</i>	<i>Gallia</i>	<i>Italy</i>	<i>North. Africa</i>	<i>Eastern Medit.</i>
1	<i>Conimbriga</i>	206	5,3%	36%	38%	36%	6%	10%	7%	0%	3%
2	Eira Velha	10	9,0%	-	-	-	-	-	-	-	-
3	Quinta do Ervedal	25	3,4%	-	-	-	-	-	-	-	-
4	<i>Egitania</i> / Idanha-a-Velha	140	2,8%	15%	15%	19%	8%	-	15%	-	43%
5	<i>Seillium</i> / Tomar	55	10,9%	35%	35%	30%	10%	15%	0%	0%	10%
6	Parreitas	Undet.	-	-	-	-	-	-	-	-	-
7	<i>Villa Cardilio</i>	273	50,9%	93%	93%	2%	1%	1%	2%	0%	2%
8	<i>Eburobrittium</i>	131	2,3%	23%	23%	15%	8%	31%	15%	0%	8%
9	<i>Ammaia</i>	133	6%	50%	50%	0%	0%	19%	25%	0%	6%
10	Santarém	Undet.	-	-	-	-	-	-	-	-	-
11	Vale Tijolos	114	6%	64%	64%	10%	8%	0%	9%	0%	9%
12	Porto Sabugueiro	128	1,6%	-	-	-	-	-	-	-	-
13	<i>Abelterium</i> / Alter do Chão	13	9,0%	-	-	-	-	-	-	-	-
14	S. Pedro, Alter do Chão	15	20%	-	-	-	-	-	-	-	-
15	Torre de Palma	11	-	-	-	-	-	-	-	-	-
16	Quinta da Barradinha	152	24,3%	79%	79%	4%	2%	2%	6%	0%	6%
17	<i>Ierabriga</i> / Monte dos Castelinhos	60	3,3%	50%	50%	38%	-	-	13%	-	-
18	Sub-serra Castanheira do Ribatejo	47	21,3%	-	-	-	-	-	-	-	-
19	Quinta da Marquesa	Undet.	-	-	-	-	-	-	-	-	-
20	Povos	Undet.	-	-	-	-	Undet.	-	-	-	-
21	Vila Franca de Xira	6	-	-	-	-	-	-	-	-	-
22	Sta. Vitória do Ameixial	11	9%	-	-	-	-	-	-	-	-
23	Torre Águila	Undet.	-	-	-	-	-	-	-	-	-
24	<i>Emerita Augusta</i> / Merida	492	1,6%	6%	6%	10%	14%	17%	19%	-	35%
25	Tagus, underwater finds	Undet.	-	-	-	-	-	-	-	-	-
26	S. Miguel de Odrinhas	Undet.	-	-	-	-	-	-	-	-	-
27	Quinta do Morgado	33	27,2%	-	-	-	-	-	-	-	-
28	Almoinhas	473	26,4%	91%	91%	2%	1%	5%	1%	1%	-
29	Frielas	Undet.	-	-	-	-	-	-	-	-	-
30	Quinta do Belo	Undet.	-	-	-	-	-	-	-	-	-
31	Quinta da Bolacha	59	15,3%	-	-	-	-	-	-	-	-
32	Freiria	253	-	-	-	-	-	-	-	-	-
33	Alto da Cidreira	41	29,0%	100%	100%	-	-	-	-	-	-
34	<i>Olisipo</i> / Lisbon	4270	13,1%	68%	68%	8%	3%	9%	5%	1%	7%
35	Ponta do Mato	84	3,6%	83%	83%	17%	-	-	-	-	-
36	Endovelico, S. Miguel da Mota	Undet.	-	-	-	-	-	-	-	-	-
37	Comenda	29	3,4%	-	-	-	-	-	-	-	-
38	<i>Caetobriga</i> / Setúbal	Undet.	-	-	-	-	-	-	-	-	-
39	Troia	3605	0,4%	15%	15%	23%	13%	19%	17%	2%	11%
40	<i>Salacia</i> / Alcácer do Sal	293	0,7%	-	-	-	-	-	-	-	-
41	Sado, underwater finds	Undet.	-	-	-	-	-	-	-	-	-
42	Cerrado do Castelo, Grândola	Undet.	-	-	-	-	-	-	-	-	-
43	São Cucufate	Undet.	-	-	-	-	-	-	-	-	-
44	Monte da Cegonha	Undet.	-	-	-	-	-	-	-	-	-
45	<i>Pax Iulia</i> / Beja	380	0,7%	5%	5%	27%	8%	19%	5%	3%	32%
46	<i>Miróbriga</i>	95	25,3%	-	-	-	-	-	-	-	-
47	Sines	72	6,9%	89%	89%	-	-	11%	-	-	-
48	Ilha do Pessegueiro	200	4,0%	73%	73%	-	-	18%	9%	-	-
49	Cabo Sardão	Undet.	-	-	-	-	-	-	-	-	-
50	Monte Moliao	625	0,2%	0,7%	-	-	-	-	-	-	-
51	Montemar	Undet.	-	-	-	-	-	-	-	-	-
52	Rio Arade	483	0,8%	20%	20%	14%	10%	33%	13%	-	10%
53	Cerro da Vila	Undet.	-	-	-	-	-	-	-	-	-
54	Loulé Velho	195	2,6%	26%	26%	16%	11%	26%	21%	0%	0%
55	Quinta do Lago	83	1,5%	-	-	-	-	-	-	-	-
56	Milreu	Undet.	-	-	-	-	-	-	-	-	-
57	<i>Ossonoba</i> / Faro	887	0,1%	3%	3%	45%	3%	21%	7%	7%	14%
58	<i>Balsa</i>	367	0,8%	11%	11%	33%	11%	11%	11%	0%	22%
Total NMI all amphorae types		14549									

Table 1. Lusitana 3. Significance in the studied amphorae assemblages from Lusitana.

no. Map	Site	References
1	<i>Conimbriga</i>	Alarcão 1976; Buraca 2005; Viegas 2011
2	Eira Velha	Unpublished (RRA)
3	Quinta do Ervedal	Gadanhó 2019
4	<i>Egitania</i> / Idanha-a-Velha	Banha 2006; 2010
5	<i>Seillium</i> / Tomar	Banha and Arsénio 1998
6	Parreitas	Antunes 2008
7	<i>Villa Cardílio</i>	Diogo and Monteiro 1999; Filipe et al. 2024; Unpublished (VF)
8	<i>Eburobrittium</i>	Unpublished (RRA)
9	<i>Ammaia</i>	Venditti 2016
10	Santarém	Personal observation (RRA)
11	Vale Tijolos	Unpublished (RRA)
12	Porto Sabugueiro	Unpublished (RRA)
13	<i>Abelterium</i> / Alter do Chão	Quaresma and António 2017
14	S. Pedro, Alter do Chão	Diogo 1999-2000
15	Torre de Palma	Diogo 1999-2000
16	Quinta da Barradinha	Pimenta 2022; Unpublished (RRA)
17	<i>Ierabriga</i> / Monte dos Castelinhos	Pimenta, Mendes and Norton 2008; Pimenta and Mendes 2014; Pimenta 2015; 2022
18	Sub-serra Castanheira do Ribatejo	Cardoso 2009
19	Quinta da Marquesa	Unpublished (RRA)
20	Povos	Banha 1991-92
21	Vila Franca de Xira	Pimenta and Mendes 2006; 2007
22	Sta. Vitória do Ameixial	Diogo 1999-2000; Gomes, Macedo and Brazuna 2000
23	Torre Águila	Unpublished (RRA)
24	<i>Emerita Augusta</i> / Merida	Almeida and Sánchez Hidalgo 2013; Almeida 2016; Unpublished (RRA)
25	Tagus, underwater finds	Quaresma 2005; Cardoso 2013
26	S. Miguel de Odrinhas	Pimenta 1982-1983
27	Quinta do Morgado	Pimenta, Mendes and Almeida forthcoming
28	Almoínhas	Lopes 2022; Unpublished (RRA)
29	Frielas	Silva 2009; Policarpo 2010; Unpublished (RRA)
30	Quinta do Belo	Silva and Santos 2009
31	Quinta da Bolacha	Quaresma 2017
32	Freiria	Cardoso 2018
33	Alto da Cidreira	Cardoso 2018
34	<i>Olisipo</i> / Lisbon	Filipe 2023
35	Ponta do Mato	Raposo, Santos and Henrique 2014
36	Endovelico, S. Miguel da Mota	Unpublished (RRA)
37	Comenda	Viegas 2016
38	<i>Caetobriga</i> / Setúbal	Silva 2018
39	Troia	Almeida et al. 2014
40	<i>Salacia</i> / Alcácer do Sal	Silva et al. 1980-81; Faria 1998; Pimenta et al. 2006 and 2015
41	Sado, underwater finds	Diogo and Alves 1988-1989
42	Cerrado do Castelo, Grândola	Ferreira, Faria and Diogo 1991
43	São Cucufate	Pinto and Lopes 2006
44	Monte da Cegonha	Pinto and Lopes 2006
45	<i>Pax Iulia</i> / Beja	Lopes, Almeida and Pinto 2020; Unpublished (RRA)
46	<i>Miróbriga</i>	Diogo 1999; Quaresma 2012; Quaresma and Raposo 2016
47	Sines	Diogo 1999; Silva and Coelho-Soares 2006
48	Ilha do Pessegueiro	Silva and Soares 1993
49	Cabo Sardão	Diogo and Reiner 1987
50	Monte Moliao	Arruda et al. 2008; Arruda and Sousa 2012; Viegas and Arruda 2013; Arruda and Viegas 2016
51	Montemar	Unpublished (RRA)
52	Rio Arade	Silva, Coelho-Soares and Soares 1987; Diogo, Cardoso and Reiner 2000; Unpublished (RRA)
53	Cerro da Vila	Personal observation (RRA)
54	Loulé Velho	Almeida and Viegas forthcoming; Unpublished (RRA)
55	Quinta do Lago	Arruda 2019
56	Milreu	Personal observation (RRA)
57	<i>Ossonoba</i> / Faro	Almeida et al. 2014; Unpublished (RRA)
58	<i>Balsa</i>	Viegas 2011; Unpublished (RRA)

Table 1 (cont.). Lusitana 3. Significance in the studied amphorae assemblages from Lusitana.

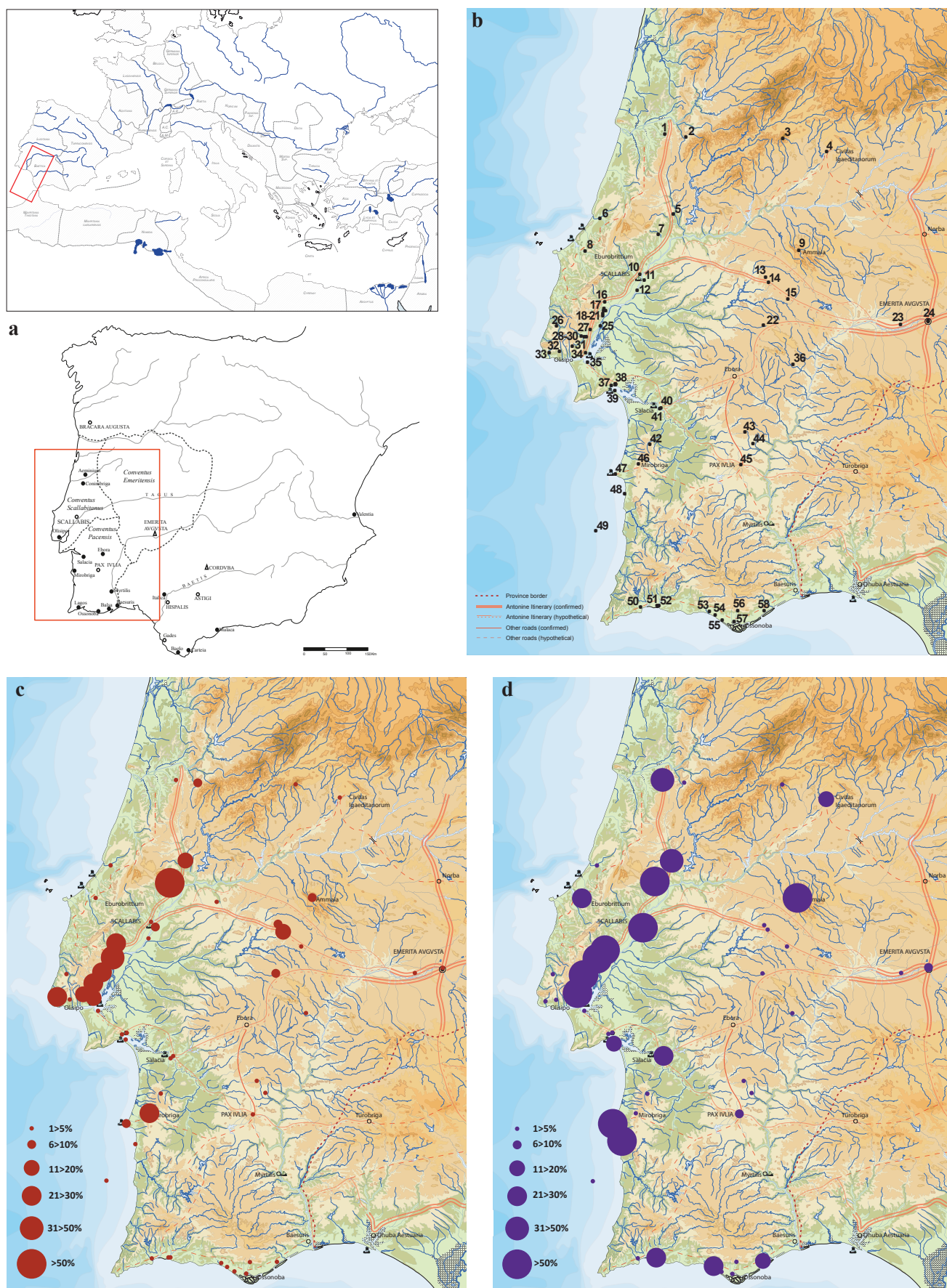


Fig. 3. a) Location of Lusitania in the Mediterranean and in Hispania; b) sites and assemblages with Lusitana 3 amphorae in Lusitania; c) distribution of Lusitana 3 amphorae by % of MNI in the total of the samples; d) distribution of Lusitana 3 amphorae by % of MNI of the wine amphorae between the late 1st and mid 3rd century AD (© Almeida and Filipe).

4. The other side of the coin: the Lusitana 3 diffusion outside Lusitania

At the same time, the recent identification of Lusitana 3 wine amphora exports to several places in the western Mediterranean confirmed that its commerce is not confined to the provincial markets and allows us to draw new paths of study (fig. 5). In the last 10 years, Lusitana 3 has been very well documented in *Baetica*, especially in the Guadalquivir Valley (Fabião 2006; Vázquez Paz 2012; García Vargas 2015; 2016), which is the first region outside Lusitania where it was recorded in large quantities.

In the cities of Seville (García Vargas, 2015: 398; 2016: 288-294) and Munigua (Fabião 2006: 106-107), Lusitana 3 is the major wine amphora type in the 2nd and 3rd century AD, surpassing the wines from Gaul, *Italia*, and the Eastern Mediterranean. Still in the Guadalquivir Valley and near Seville, Lusitana 3 is also well documented in the city of Italica (Vázquez Paz 2012: 261, fig. 2; García Vargas 2016: 287).

Despite having been registered on the Baetican coast, it only appears occasionally in Cadiz and in Carteia (Algeciras) (Bernal Casasola 2001: 267; 2011: 11-12; 2016: 301). It is not known in the Tarraconensis province.

Outside *Hispania*, Lusitana 3 has only been recorded in small quantities. Even so, its presence is attested throughout the western half of the Mediterranean, which is quite significant regarding its extra-provincial diffusion. It is recorded in *Gallia*, in the cities of Bordeaux (Laubenheimer and Watier 1991: 14, fig. 15) and Arles (Quaresma 2018: 204), and also in the Island of Sardinia (Bombico 2016: tab. 25).

In the Italian Peninsula, Lusitana 3 is known both in the Tyrrhenian and Adriatic coast, respectively at Ostia (Palma and Panella 1968: 101 y tav. XXVIII, fig. 460) and Aquileia (Gaddi and Degrassi 2016: 439). Finally, a complete Lusitana 3 amphora was found in the Pupput necropolis in Tunisia, North Africa (Bonifay 2004: 150, n. 16). Regarding the Eastern Mediterranean as well as the provinces of *Brittania* and *Germania*, in the North of the Empire, Lusitana 3 does not seem to have been found yet.

5. Final remarks

Lusitana 3 was produced perhaps from late 1st, certainly from early 2nd century AD (Quaresma and Raposo 2016; Fabião 2021: 76; Filipe 2021: 205), and it seems to have been produced in large proportions only from the second quarter of this century onwards, till mid-3rd century AD.

Considering the data from the pottery production centres as well as the consumption sites, it looks like the production of Lusitana 3 could have been more expressive in the Tagus

Valley than in the Sado Valley. We believe future research will hopefully clarify this question.

In this study, the importance of Lusitana 3 has been highlighted in the consumption of wine in the province, representing between 30% and 90% of the wine amphorae in the cities and *villae*. Nevertheless, beyond the apparent robustness of these values, there is still a huge need for research and of quantified amphorae assemblages in order to allow a deeper and more detailed analysis of this amphora type, its distribution and commerce across the provincial frame.

The increase of wine production in the Tagus and Sado Valleys in the 2nd century AD is visible both in regional supply of wine and in its export to other provinces. This is corroborated by pollen analysis in sediments as well as by the increasing of wine presses and *cella vinaria* in the *Olisipo* area (Fabião 2021; Rocha 2021; Currás et al. 2021). This brings us to reconsider the importance of the viticulture activity in the economy of Lusitania, especially in the Tagus and Sado Valleys, as one of its main economic drivers, along with the exploitation of marine resources (Filipe 2021; 2023; Fabião 2021).

As to exports, Lusitana 3 was exported heavily to *Baetica* (Fabião 2006; García Vargas 2015; 2016). This privileged commercial relation is still not easy to understand, not least because on the Baetican coast the same thing does not seem to happen. We should also mention the inscription of *Marcus Cassius Sempronianus, Diffusor olearius* from *Olisipo*, who had a commercial activity associated with the Baetican olive oil business, underlining the strong economic and commercial ties between *Olisipo* and *Baetica* (González Fernández 1983; Loyzance 1986).

Finally, we should draw attention to the fact that Lusitana 3 is most probably under-represented in other provinces of the Empire, and that the real volume that its exportation reached remains to be seen.

Bearing in mind what has been said above, it seems time to reconsider the importance of viticulture as one of the main economic driving forces of the Tagus and Sado river valley regions at least since the 2nd century AD, together with the better known and studied exploitation of marine resources.

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