Exploring Roman ritual behaviours through plant remains from Pannonia Inferior

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Abstract

The recovery of new plant remains from eastern Croatia are discussed here in order to determine their ritual significance and how this evidence may fit into chronological and regional observations on ritual plant offerings in the Roman world. Samples collected from inhumations, cremations and an altar dedicated to Silvanus Domesticus, dating from the 2nd to 4th centuries AD, are presented and show that a range of more 'common' plant remains, such as cereals and pulses, were an important part of ritual life. These results are also compared to the growing archaeobotanical data collected from shrine and cremation burials across Europe. Although the archaeobotanical data from the Croatian sites are limited, the increasing evidence of ritual plant use allows observations regarding the wider context of Roman social and religious change.

Keywords: Archaeobotany, Croatia, Cremations, Inhumations, Shrines, Mursa, Cibalae, Roman

Introduction

The expansion of the Roman Empire into modern day Croatia brought cultural, political, economic and urban planning changes to the newly formed Roman province of Pannonia ca. 14 AD. By 106 AD, around the time of the first and second Dacian wars, Trajan divided the province into Pannonia Superior to the west, with the capital *Carnuntum*, and Pannonia Inferior to the east, with the capitals in *Aquincum* and *Sirmium* (Campbell 2013). As administrative and governmental structures were adopted, adapted and periodically changed from those implemented in Rome, so too were many aspects of Roman religion. Roman life was filled with rituals from the private sphere of the home to the public arena, but how these rituals and religious practices developed in Pannonia within the context of local customs and traditions is still a topic for debate (e.g. Wilkes 1995; Džino 2010, 2012; Džino and Domić-Kunić 2012). Evidence from literature, inscriptions and sculptures emphasises state

religion and ceremonies (e.g. Fitz 1998), while the excavation of Roman cemeteries have provided a wide range of archaeological information about burial practices in the region (see Leleković 2012 for summary).

Typically, archaeological manifestations of ritual practices are identified through the study of vessels, personal adornments, inscriptions, to name but a few, but very rarely through the recovery of plant and animal remains. Thus, the study of plant offerings is rarely discussed within greater theoretical debates on the nature of ritual behaviour, associated material culture and its significance as social practice. This is in part due to vague literary references on the types of foods selected, how they may have been prepared and their specific role and value within the ritual activity (e.g. Rüpke 2007; Scheid 2007). Plant offerings are seen represented in mosaics, frescoes and sculptures across the empire (e.g. Robinson 2002; Yilmaz et al. 2013), but generally little is known about public or private sacrifice and offerings in colonies or *municipia* (Scheid 2007, 264). In addition, the study of animal sacrifice, from zooarchaeological, literary and iconographic evidence, has had a greater focus within discussions of ritual behaviour (e.g. King 2005; Morris 2011; Elsner 2012; Scheid 2012; Aldrete 2014), although the importance of plant offerings in Roman religion has been recently highlighted (Schultz 2016).

Within the archaeobotanical community growing evidence has started to emerge over the last decade, mainly from Italy and the western Empire, showing that a range of plants, such as cereals, pulses, fruits and nuts, were used in a variety of rituals (e.g. Bouby and Marinval 2004; Rottoli and Castiglioni 2011). However, in Croatia, archaeobotanical evidence from Roman sites is relatively scarce and so little is known in regards to the role of plants within ritual contexts in the province of Pannonia. Furthermore, the only evidence of archaeobotanical remains within Iron Age ritual contexts is from the early Iron Age Hallstatt necropolis of Kaptol-Gradci (Šoštarić et al. 2017), making comparisons between the periods, in terms of continuity or change, in the use of plants within ritual contexts difficult. This paper therefore presents new archaeobotanical data collected from Roman ritual contexts within Vinkovci (*Cibalae*) and Osijek (*Mursa*) (Figure 1), with the aim of determining their ritual significance and how this evidence may fit into chronological and regional observations on ritual plant offerings in the Roman world.

Figure 1. The location of *Colonia Aelia Mursa* (Osijek) and *Cibalae* (Vinkovci) within the context of the Roman provinces.

Materials and Methods

The archaeobotanical material discussed in this paper consists of charred macro-remains from two cremation burials excavated at 120 Divaltova Street (OSDIV94, 123), Osijek, one inhumation from Ulica I. Gundulića 48 (VIG48), Vinkovci, one inhumation and two cremations from Lapovačka ulica - Kaufland (VKFL), Vinkovci, and one sample from the remains of an altar at Ulica I. Gundulića 39 (VIG39), Vinkovci, Croatia.

The sites

Excavations conducted at 120 Divaltova Street (OSDIV), Osijek, revealed 70 inhumation and 12 cremation burials, dating from the 2nd to mid 3rd century AD, located within the southern cemetery. All the cremations appear to be *busta* or *ustrinata* graves, containing the pyre debris mixed with the ashes and grave goods (Leleković 2012, 338). Only two cremation graves (Grave 23 and 28) contained identifiable carbonised plant remains out of eleven cremation graves sampled. Grave 23 was an irregular pit 122 x 44 cm, orientated N-S, containing the cremation and pyre debris along with ceramic dishes and a coin. Grave 28 was a rectangular pit 136 x 45 cm, orientated E-W, containing with the cremation burial a bronze hair pin, bronze buckle and fragments of ceramic dishes. This cemetery is particularly important as it represents a rare example of the transitional period where two burial rites existed side by side, before the tradition of inhumations became the primary burial custom (Leleković 2012, 332).

Excavations conducted at Ulica I. Gundulića 48 (VIG48), Vinkovci, revealed five Roman inhumations aligned east west with few grave goods within the western cemetery of *Cibalae* (Vulić and Rapan Papeša 2007). One archaeobotanical sample was collected from Grave 5 around the left arm of the female skeleton (aged 30-35) in an area where a large chalk bead and a number of small green beads were found. Grave 5 also contained two coins, one of which was of Constantine II (dating to 337 – 361 AD) and the second of Constantine the Great (dating to 307-337 AD).

Excavations were also conducted at Lapovačka ulica -Kaufland (VKFL), Vinkovci, where a total of 52 Roman inhumation graves and 2 cremations graves were identified within the western cemetery (Vulić and Rapan Papeša 2009). Almost all of the graves date to the 3-5th century AD and many of the graves had been looted during the Roman period. Samples were collected from five graves with significant finds, but carbonised plant remains were only identified from graves 43, 44 and 45. Grave 43 was a brick built inhumation grave with a rather unusual construction dating to ca. 4th century AD containing a female aged between 40 to 50 years, based on the density of the trabecular bone and the presence of degenerative changes. Graves 44 and 45 were cremation graves (*busta*) dating to the first half of the 3rd century AD. Grave 44 is believed to have been the remains of a female aged 20 to 35 years, while grave 45 was a child aged 6-9 years that was buried with another foetus. Grave goods in the inhumation included finds of unidentified metal, while grave 44 contained evidence of animal bones. Grave 45 is particularly interesting as a large number of grave goods including pottery vessels, remains of animal bones from large and small animals and two glass fragments were recovered (Figure 2).

Figure 2. Image of Grave 45, Lapovačka ulica–Kaufland, Vinkovci. Image, Photo Archive of Vinkovci Museum.

Excavations at Ulica I. Gundulića 39 (VIG39), Vinkovci, identified the outside walls of a dwelling located at the very edge of the fortified town of *Cibalae*, near the western part of the fortification system. Of note was the discovery of an altar dedicated to *Silvanus Domesticus* and a number of coins of Constantius II dated to 357-358 AD. The altar dedicated to *Silvanus Domesticus* was situated near the exterior wall of the house, in the courtyard, and was typical of a private household sanctuary (Perinic Muratović and Vulić 2009). The monument was not built into the wall but was found collapsed face down on the wall. It was made of limestone and although the lower part is damaged, the entire front side with the inscription looks as if it has been coated in white with red paint for the letters. The altar reads, *Silvano / Domestico / Fl(avius) Ingenu(us) or Ingenu/us* (Perinic Muratović and Vulić 2009). The back of the monument does not appear finished and so it is suggested that the monument rested against the wall. During the excavations an area associated with the alter was sampled for archaeobotanical remains.

The archaeobotanical data

Sample sizes were not recorded, but the excavator estimated that a bucket was collected (approximately 10 litres) from each of the contexts. Systematic sampling was not practiced during excavation but rather judgement samples were collected by the archaeologists in charge.

Samples were processed using a flotation machine at Vinkovci and bucket flotation at Osijek and collected in a 300μm sieve for the flot and a 1mm mesh for the residue. All seeds, fruits and other plant remains were sorted and identified with the aid of a low power (7-40x) binocular microscope. Charred plant macrofossils were identified and recorded using reference literature (Cappers et al. 2006; Jacomet 2006) and a modern reference collection where necessary. A standardised counting method was used involving each grain being counted as one; fragments of grains being combined and estimated as to the number of complete grains they represent; the weed and fruit seeds were all counted as one, with the exception of large seed fragments that clearly represent part of the same seed.

Comparative data were also collected from cremation burials, temples and shrine sites dating to the Roman period across the Roman Empire. Due to different taphonomic processes and sampling methods used only presence/absence data were recorded per site. If more than one grave was sampled then the overall start and end date of the site was recorded.

Results

At 120 Divaltova Street (OSDIV) Grave 28 contained a fragment of a cereal grain and a pulse, while grave 23 had seven relatively well preserved lentils (*Lens culinaris*), along with some cereal grain fragments (Table 1).

In Vinkovci the sample taken from Grave 5 at Ulica I. Gundulića 48 (VIG48) contained a total of 42 identifiable plant remains (Table 1). The assemblage was largely dominated by wild/weed species; however, barley (*Hordeum vulgare*) and spelt (*Triticum spelta*) were both identified along with one seed of flax (*Linum usitatissimum*). The wild/weed seeds include a number of grasses (*Bromus* sp., *Poa* sp.), sedges (*Carex* sp.) and rushes (*Scirpus* sp., *Eleocharis palustris*).

At Lapovačka ulica -Kaufland (VKFL) only 19 carbonised seeds were identified from graves 44 and 45 and were very similar in composition. Both contained a couple of broomcorn millet grains (*Panicum miliaceum*), lentil, grass pea (*Lathyrus sativus*) and other pulse and cereal fragments that were too poorly preserved to identify (Table 1). In addition, grave 44 also contained ca. 30 carbonised fragments of amorphous food remains, which may indicate the remains of a prepared meal or the flesh of fruits (Figure 3a). In grave 43 only four carbonised seeds were recovered, including one barley grain (Figure 3b) and a couple of cereal and pulse fragments.

The one sample collected from a context associated with the alter at Ulica I. Gundulića 39 (VIG39) was largely dominated by cereals remains, barley, naked wheat (*Triticum aestivum/durum*) and broomcorn millet, with only one indeterminate pulse fragment and four weed seeds identified.

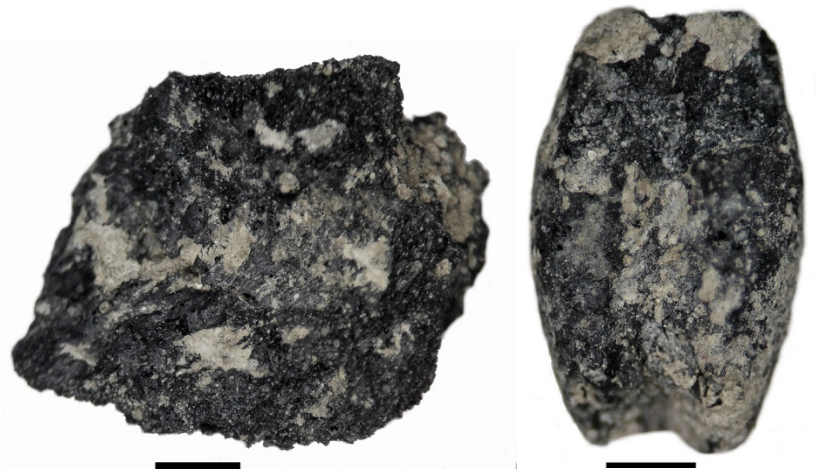

Figure 3. Carbonised macro-remains from Grave 44, Lapovačka ulica–Kaufland, Vinkovci. (a) amorphous material, possibly prepared food and (b) barley (*Hordeum vulgare*) grain. Scale bar = 1mm. Images K. Reed.

Discussion

Over the last 20 years an increasing number of plant remains have been reported on from ritual deposits. These range from domestic offerings (e.g. Robinson 2002), offerings in public temples (Zach 2002), Romano-Celtic temples (e.g. Vandorpe and Jacomet 2011), mithraea (e.g. Martens 2004), and cremation burials (e.g. Kreuz 2000). However, the identification of plant remains deriving from purposeful ritual or religious activities is not simple (Lodwick 2015). Preservation of plant remains in ritual contexts usually depends upon human practices, especially the use of fire in the case of carbonised remains, although preservation through waterlogging and mineralization can also occur. Other taphonomic aspects also need to be considered, especially as carbonised remains can survive for long periods and could be re-deposited in disturbed contexts (e.g. Pelling et al. 2015).

Cremation burials

Communal feasting was an important part of the funeral process (Williams 2004) and throwing food onto the pyre would have allowed, for instance, the deceased to take part, providing sustenance for their journey to the afterlife (Philpott 1991, 237). Cremation rituals therefore represent a perfect opportunity for the preservation of plant and food remains, but even then not all plant items will preserve through carbonisation. Plant and food remains can derive from several stages in a cremation burial and associated activities. First, in *bustum* burials, where cremations take place directly over the grave, plants used as fuel, food placed on the pyre, or surrounding vegetation accidentally incorporated in the fire will end up in the grave (Kreuz 2000). Second, are ritual pits, where the cremation has taken place in one area, such as a *ustrinum*, and the ashes and pyre are re-deposited in a pit or inside an urn. Thus, only an anthropogenic selection of plant and food remains from the pyre will be recovered (Kreuz 2000; Rottoli and Castiglioni 2011). Thirdly, plant remains may derive from funerary meals, although the remains are less likely to be preserved unless there is evidence of hearths

and cooking/eating vessels found within cemetery sites (e.g. Toynbee 1996, 50-1, 63-4; Biddulph and Booth 2006; Jensen 2008,120).

The plant remains recovered from the two undisturbed *bustum* graves at VKFL could be interpreted as pyre offerings. The graves also included possible remains of some form of bread/cakes/pastry; similar finds in northern Italy were identified as burial offerings (Rottoli and Castiglioni 2011). Although the densities are relatively low, similar densities of plant remains have been recovered from other cremation burials throughout the provinces (e.g. Gray 2008).

The two undisturbed cremation burials at OSDIV could also represent pyre offerings. In particular, the well preserved lentil remains could possibly indicate the throwing of dried, raw lentils onto the pyre. If they had been cooked the lentils would have been soft, making it more unlikely to survive in a recognisable state (Barber and Bowsher 2000). Furthermore, literary evidence records that at early Roman funerary feasts the food given to the dead was raw (Scheid 1984). Pulses are particularly interesting as some suggest that they hold possible religious or mystical attributes (Barber and Bowsher 2000, 70, 308). According to ancient texts pulses were eaten during the *Parentalia* festival that honoured the family, at the *silicernium*, on the day of burial as a grave-side meal of purification, and then again nine days later at the *cena novendialis*, which represented the end of the official mourning period (Lindsay 1998, 72; 75; Jensen 2008, 117).

The tradition of incorporating plants within cremation burials is unlikely to have been new for Pannonia. Although systematic archaeobotanical sampling at Iron Age and Roman sites is not common in Croatia, the early Iron Age Hallstatt necropolis of Kaptol-Gradci, approximately 100 km west of the study sites, has produced evidence of archaeobotanical remains within cremation burials. Here the tumuli were reported to contain predominantly cereal grains as well as small quantity of weeds representing accidental inclusions and wild fruits, primarily wild apples (*Malus sylvestris*) (Šoštarić et al. 2017). The incorporation of plants within cremations is also widespread in pre-Roman Italy, especially cultivated and uncultivated fruits and nuts such as grapes, acorns (*Quercus* sp.) and dogwood (*Cornus sanguinea*) (Rottoli and Castiglioni 2011; Caracuta and Fiorentino 2018). This therefore suggests that plant remains continued to be used in cremations, although the rituals behind their incorporation may have changed or been adapted through time. For example, at Ilok, 45-70 km east of the study sites, a number of Roman graves dating to the 1st century AD contained late La Tène pottery suggesting that rural communities held onto the features of their own material culture, incorporating only some of the newly founded Roman provincial culture (Dizdar et al. 2003).

What we do see in Croatia from the Iron Age to the Roman period is the introduction of exotics and a wider range of Mediterranean goods imported into the region. At Ilok, the 1st century AD graves contained calcified remains of melon/cucumber (*Cucumis melo/C. sativus*), fig (*Ficus carica*) and olive (*Olea europaea*), indicating imported goods from the Mediterranean (Šoštarić et al. 2006). In

Osijek, new excavations from an early 2nd century AD septic pit have revealed the presence of rice (*Oryza sativa*) and black pepper (*Piper nigrum*), showing the first evidence of exotics arriving to Pannonia from Asia (Reed and Leleković 2017). Furthermore, to the north in Slovenia remains of dates (*Phoenix dactylifera*) are seen for the first time in Roman graves at Poetovia and Emona (Kujundžić 1982; Petru 1972). Thus, in the newly assimilated region of Pannonia, the expansion of trade networks and road systems, the establishment of military installations and the founding of Roman *Colonia*, such *Aelia Mursa* in Osijek*,* would have meant a greater access to new food items which could then be incorporated within burial rituals, although none of these were present at the study sites.

Inhumations

Whether carbonised plant remains can be interpreted as offerings within an inhumation is more difficult, due to the lack of direct burning associated with the burial. Usually a burial is considered the result of a single event and the grave content described as a discrete unit. However, archaeobotanical remains are plagued with problems of intrusion and residuality (e.g. Pelling et al. 2015). This is particularly acute in areas with a long history of human occupation, cultivation, grazing, and bioturbation (Borojevic 2011).

The plant remains from VIG48 are particularly interesting as they contained a relatively large number of wild plants and weed seeds compared to the other sites. These likely represent plants from the local environment that were accidentally burnt and later deposited within the graves. Similarly, the cereals, pulse fragments and flax seed may arguable indicate accidental burning of local crops during ceremonial activities, as these plants have been found within ritual contexts in other provinces (e.g. Zach 2002; Vandrope and Jacomet 2011). However, no areas of burning were identified at the cemetery to indicate other ceremonial activities involving plant remains occurred. Thus, it is possible that the infill of the graves from VIG48 and VKFL43 consisted of a mixture of archaeobotanical remains from different periods, attesting to previous and/or later occupation or use on this site.

Shrines

Direct association of carbonised plant remains with shrines is also problematic, especially when the shrine is in a settlement where a large range of activities are taking place. The location of the altar at VIG39 was likely located within the courtyard of the house, however, it is difficult to determine conclusively that the burnt remains represent offerings and could instead represent secondary or tertiary deposits buried within the associated context. In particular, the identified remains of cereals, a pulse and a handful of weed seeds could point to kitchen waste. Nevertheless, ancient texts describe the burning of food offerings as part of household rituals. For example, private domestic worship revolved around the household spirits (*Vesta, Lares Familiares, Penates, Genius*), where offerings of

plants and animals commonly occurred to honour the deities, especially around meal times (Lyttelton and Foreman 1984, 85; Robinson 2002). Ovid describes how food would be thrown into the fire to be consumed by the household gods (Fasti, VI, 307), while other offerings were burnt on altars (Fasti, I, 343-5) and special pyres (Fasti, II, 533-4). Thus, similarities will exist between the range of plants from a shrine and a settlement (i.e. cereals and pulses), making it unclear whether the plant remains recovered from VIG39 indicate plants used as offerings to the gods.

Plants as offerings in the Roman World

Recently Elsner (2012) suggested a move from animal sacrifices towards more vegetable offerings (e.g. incense and libations) by the 3rd century AD across much of the Roman Empire, based on a reduction in animal sacrificial imagery (mainly sculptures). For example, animal sacrifice appears in pagan festival scenes from the 2nd to 3rd centuries, but by the 4th these scenes are replaced by images of incense burning or libation (Elsner 2012, 133). But this pattern is not widespread and in North Africa animal sacrifice remains popular in the visual material culture (Elsner 2012, 155). In southern Britain too evidence of animals as offerings (seen from zooarchaeological remains) seems to remain relatively constant until the transition to Christianity in the 5th Century AD (e.g. King 2005). In terms of plant offerings, both written and iconographic evidence is seen from the 1st century AD. For example, pine cones, figs and dates are found on sculptures, wall paintings and mosaics at Pompeii and Herculaneum (Robinson 2002). In the Eastern Mediterranean sarcophagi, statues and grave stele depict evidence of dates, vines, pine cones, wheat, walnuts and many other fruits, with most dating to around the 2nd century AD (Yilmaz et al. 2013). As symbols of fertility and growth, plants were particularly central to cults of *Demeter* (Roman Ceres) and *Dionysus* (Roman Bacchus). Pliny (H.N.15.77), Verrius Flaccus (Fest 172.25-174.20) and Tacitus (Ann. 13.58) also note sacred fig trees planted in Rome and offerings of bread or other cereal products are also described, such as a salted cake, mola salsa (Pliny, N.H 18.2; 31.41). But how much can these images and written accounts reflect upon actual ritual offerings across time and space?

The recovery of archaeobotanical remains from cremation burials and shrine sites dating to the 1st century BC to the 4th century AD are still relatively rare in many regions. Little evidence exists for the Iberian Peninsula, North Africa or much of Southeast Europe. In an attempt to determine whether any spatial and/or chronological patterns in the main species offered in Roman Europe exist and how this fits with prevailing theories and the evidence from Croatia, we present evidence of archaeobotanical data from shrines (Table 2) and cremation burials (Table 3) from across Europe. Only 21 shrines (Romano/Celtic temples, household shrines and public temples) have evidence of archaeobotanical remains (Table 2). In contrast, 135 sites have evidence of plant remains from cremation burials. Although other archaeobotanical data exist from other regions these finds were selected in order to provide enough data to allow regional comparisons within the context of this

paper. The regions to be examined here include; Region 1 (47 sites from France and 7 sites from Switzerland), Region 2 (18 from Germany, 2 from Belgium, 1 from Luxembourg and 2 from the Netherlands), Region 3 (10 from Hungary, 2 sites from Austria, 1 from Slovenia and the 2 study sites from Croatia), Region 4 (26 sites from Italy), and Region 5 (17 sites from Bulgaria) (Table 3; Figure 4).

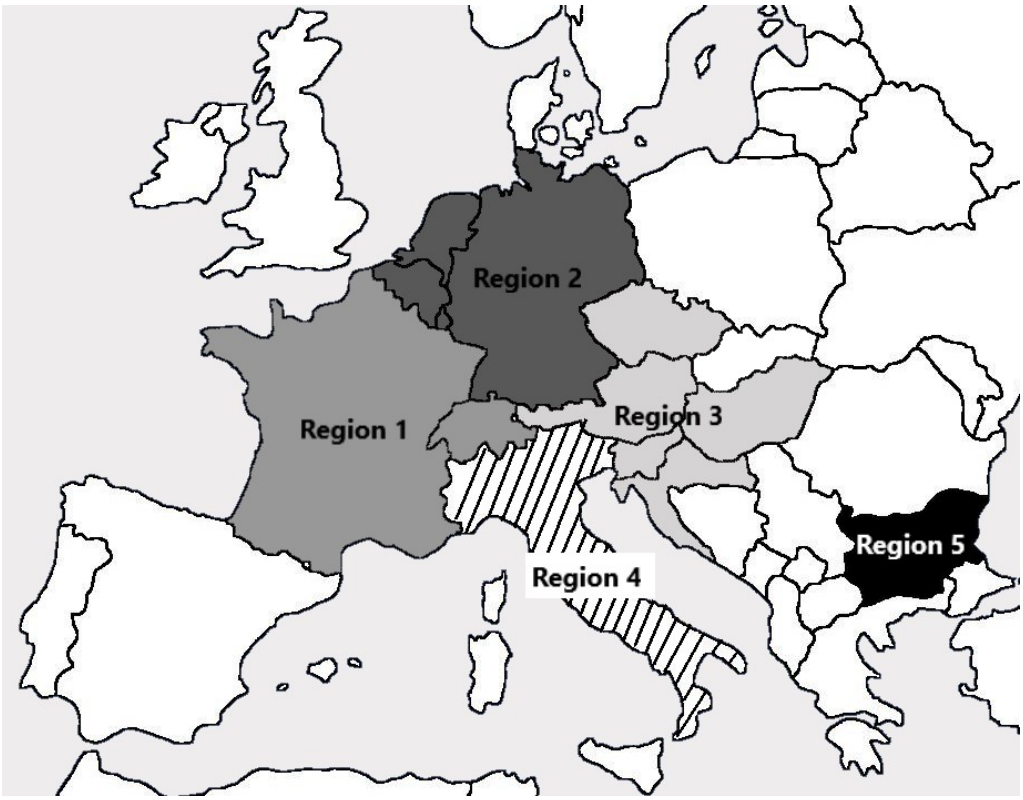

Figure 4. Regions under study that contain sites with archaeobotanical remains from cremation burials.

Overall, the composition of the archaeobotanical remains from shrine sites shows a dominance of fruits and nuts with 85% of the sites containing these remains, followed by 50% containing cereals (Figure 5). Similarly, the plant remains recovered from cremations burials also show a high presence of fruit and nut remains being present at 75% of the sites, followed by 50% containing cereals. Looking at the ubiquity of each species, pine nuts (*Pinus pinea*), date (*Phoenix dactylifera*) and fig (*Ficus carica*) dominate the shrine sites, while hazelnut (*Corylus avellana*), barley (*Hordeum vulgare*) and walnut (*Juglans regia*) dominate the cremations. Regional comparison of the cremation sites also show a high percentage of fruit and nut remains compared to other remains, although regions 1 and 2 also have a high presence of cereals and pulses (Figure 6). In particular, the cremations from Bulgaria all contained fruits and nuts and little else, with 88% of the sites containing remains of walnuts (Hristova 2015). While taphonomic bias is likely and regional variations per site should be considered, the results here show a clear overall prevalence of fruit and nut offerings compared to the other plant categories at both shrine and cremation sites. The relatively high presence of date in both

cremations and shrines may be linked to suggestions that date had strong ceremonial connotations (Livarda 2013).

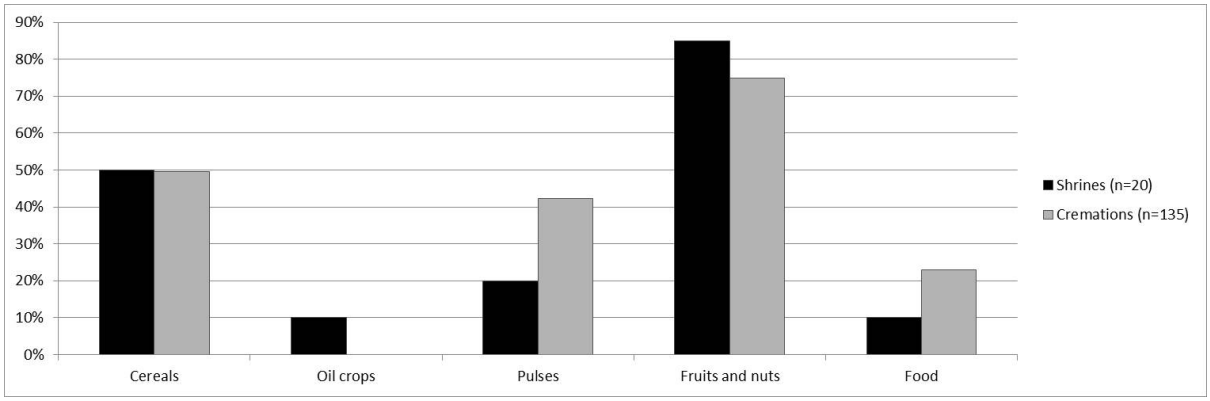

Figure 5. Number of sites within which the main plant categories are present.

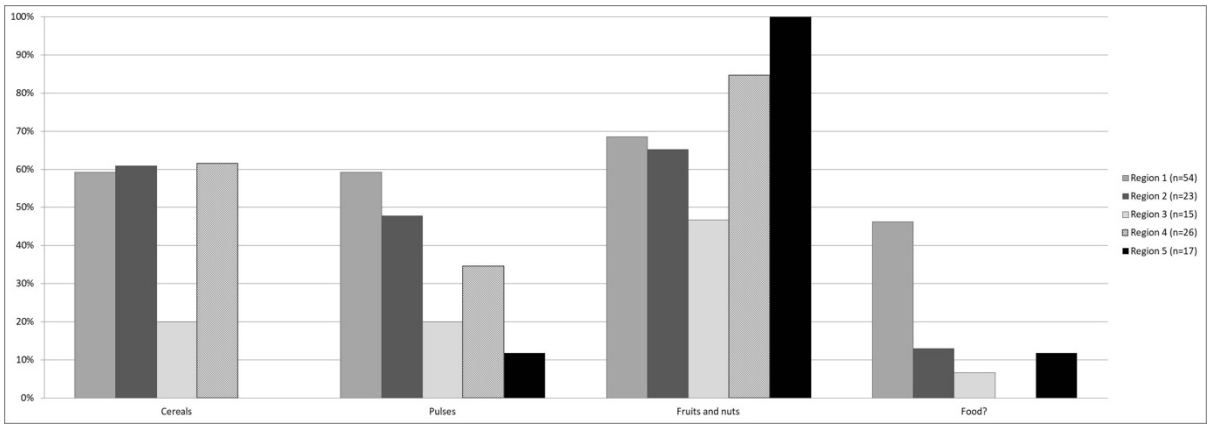

Figure 6. Number of sites in which the main plant categories are present per region.

Looking at the ubiquity of the plant remains per region, both Regions 1 and 2 (north-west) have a high presence of barley (ca. 50%), followed by hazelnut (44%, 52%), lentil (ca. 40%), pea (33%, 39%) and bean (ca. 39%). Region 1 also has a relatively high presence of possible food remains (46%). In contrast, Region 4 is dominated by date (53%), figs (50%) and walnuts (50%) and Region 5, walnuts (100%). Region 3 only has one or two seeds of any one species and so no pattern can be discerned here. The remains from Regions 1 and 2 (north-west) therefore show a higher preference for cereals and pulses compared to Regions 4 and 5 (south-east), which showed a higher presence of fruit and nut remains. Could this indicate differences in regional traditions, where the plant offerings represent new forms of religious communication created out of cultural and economic interactions at the local and regional scale? Is this simply the result of what was most commonly available and accessible to the local inhabitants, particularly as figs, walnuts and dates would have had to have been imported into the regions of France and Germany? Or is this simply bias in the datasets?

Examining the data through time, there is no clear pattern between the regions or from the dataset as a whole. The problem of dating the ritual sites limits any conclusions about possible chronological changes in the use of plant offerings. In addition, the increase of inhumation burials from the 2nd/3rd century (e.g. Morris 1992; Leleković 2012; Graham and Hope 2016) also reduces the chances of plant remains becoming preserved by charring. This means that the archaeobotanical dataset presented here is biased towards the earlier periods where cremation burials were more common (only 10 sites have deposits later than the 3rd century A.D.). What is clear is that plant remains were commonly found within ritual contexts from the 1st century AD, which may support Elsner's (2012) conclusion that the significance of animal sacrifice may be exaggerated within the general ritual complex of Roman religion.

Looking at the shrine sites, the types of plants offered does not seem to change, with no clear patterning between the types of plants offered to different deities. For example, pine cones are found at 1st century AD shrines dedicated to *Isis* and *Lares* at Pompeii and at 3rd-4th century shrines dedicated to *Mithras* and *Anna Perenna* and fig at the 2nd to 3rd century AD shrines dedicated to *Isis* (Spain), *Melikertes-Palaimon* (Greece), *Fortuna* (Netherlands) and *Hercules* (Netherlands) (Table 2). Regionally, the four UK sites only have the presence of hazelnut, pine cones and one record of date at Rochester. Similarly, the Netherlands and Belgium sites have limited remains. In contrast, the three French sites and the four Italian sites have a greater range of plant remains including the presence of fig, walnut, olive and grape. Again, could the offerings present in particular regions be a result of what was most commonly available and accessible to the local inhabitants? Or is this simply bias in the datasets? For example, good preservation of carbonised plant remains were recorded from a hearth and offering pit at Oedenburg, where one pit sample had 50.3 items per litre (Vandorpe and Jacomet 2011). As a result, the site yielded a wide range of cereals, legumes, fruits and nuts, including 596 pine nuts in offering pit 160/219 and the only find of garlic in this dataset. In contrast, the density of plant remains at Ulica I. Gundulića 39 was only 2.3 identified items per litre.

Conclusions

New plant remains were collected from inhumations, cremations and an altar dedicated to *Silvanus Domesticus*, from the Province of Pannonia Inferior (present-day eastern Croatia). The archaeobotanical remains from the cremation burials likely represent pyre offerings, such as possible raw lentils and some form of bread/cakes/pastry. The plant remains found in association with the altar dedicated to *Silvanus Domesticus* at Ulica I. Gundulića 39 may also indicate offerings of cereals to the deity, although direct association with the altar is difficult to determine conclusively. In contrast, the plant remains from the inhumations probably represent occupation waste rather than offerings to the dead.

Comparison of the Croatian data with plant remains from shrines and cremations located in Europe show that what might be termed more 'local' or 'common' food plants (e.g. wheat, pulses, local fruits and nuts), were being incorporated within religious activities. This also supports the assumption that the more common crop remains recovered from the Croatian cremation burials represent plant offerings. The evidence from the shrine data, although limited in comparison to the cremations, shows no pattern in specific offerings being associated with specific deities. Regionally, the differences seen in the cremation burials, where those in north-western Europe were more likely to contain cereals and pulses and those in south-eastern Europe showed a higher presence of fruit and nut remains, are likely due to the influence of imported religious customs and local religious choice. In addition, the access and availability of certain plant remains would have been a major factor in how groups or individuals conducted religious practices, adapting certain forms of material culture and associated meanings to what was available (e.g. fewer exotic imports seen in cremations in the provinces of France and Germany). Unfortunately exploring the adaptation and expression of groups or individual religious practices in relation to plant offerings is limited at present, due in part to small datasets and the problem of dating burials, restricting detailed analyses of chronological changes. It is therefore important that environmental samples are collected from Roman ritual contexts in order to understand the relationship between plants and religion, especially in understudied parts of the empire.

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Tables

Table 1. Plant taxa from the study sites in Croatia

Taxa: / Site:	OSDIV94	OSDIV123	VKFL44	VKFL45	VKFL43	VIG48	VIG39
Century	2-3rd	2-3rd	first half of 3rd	first half of 3rd	4th	4th	4th
Context	Cremation	Cremation	Cremation	Cremation	Inhumation	Inhumation	Altar
Cereals							
Hordeum vulgare					1	2	7
Triticum aestivum/durum							2
Triticum spelta						1	
Panicum miliaceum			1	2			2
cf. Panicum sp.				1			
Cereal indet	5	1		1	1	2	7
Oil crops							
Linum usitatissimum						1	
Pulses							
Lens culinaris	7		1	1			
Lathyrus sativus			2				
Indet pulse		1	5	2	2		1
Wild/Weed							
Agrostemma githago						1	
Avena sp.						3	1
Bromus sp.						1	1
Carex cf. *spicata*						3	
Carex sp.						4	
Chenopodium sp.						1	
Eleocharis palustris						1	
Galium sp.						1	1
Gramineae						3	
Lamiaceae						1	
Lolium sp.						1	
Medicago sativa						1	
cf. *Mentha* sp.						5	
Ononis spinosa						1	
Poa sp.						3	
Polygonum sp.			1	1			
Rumex sp.						1	
Sambucus ebulus			1				
Scirpus cf. *lacustris*						1	
Scirpus sp.						1	
Trifolium sp.						2	1
Verbascum sp.						1	
Amorphous food remains			31	1			
Indet	24	1	1	8	25	17	29
Total identified seeds	12	2	11	8	4	42	23
Seed density	1.2	0.2	1.1	0.8	0.4	4.2	2.3