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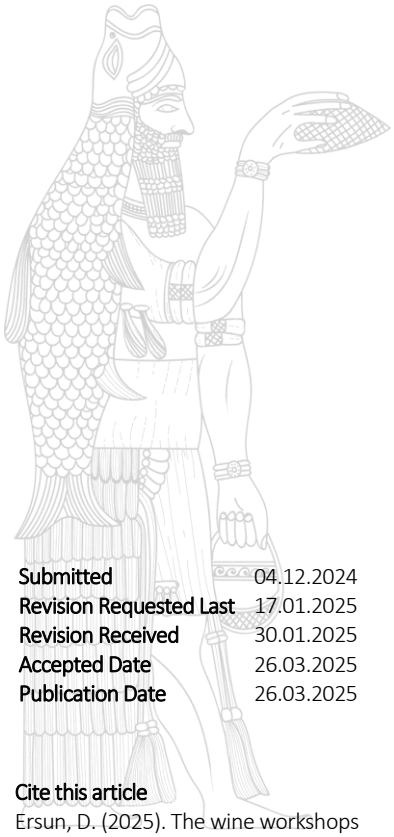
# The Wine Workshops and Production Techniques in the Ancient City of Matiate

**Durmuş ERSUN**
Corresponding Author

Department of Archaeology, Mardin Artuklu University, Faculty of Letters, Mardin, Türkiye.
ersundurmus@gmail.com



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***Abstract***

*Wine has a history of thousands of years as both a ritual and consumer product. As a ritual production, it is used as an offering to the gods in ancient literature. It was also the main drink of entertainment and meetings in daily life. Matiate is located within the borders of Midyat district. The region where Midyat is located was called as Masius in the Classical period and Tur Abdin in the Middle Ages. It is mentioned as the city of the Kaschiari region in Hittite inscriptions. The history of wine production is based on Assyrian inscriptions in Matiate. It is known from Assyrian inscriptions that the city was captured and taxed in 900 BC. It is recorded that the city's residents paid their taxes largely with the wine. Two workshops have been discovered. One of them is located in building a-1 and the other is in the complex a-10. Both building a-1 and a-10 are dated to the late Roman period. The production was carried out using three techniques. These are known as screw press, wedge press and lever press. When the workshops unearthed in the city are evaluated, it is seen that production is carried out using the wedge press in the building a-1. The production is carried out by the screw press technique in the building a-10. In this study, it is revealed what kind of techniques are used in production and the import organization of the surplus product is examined in the city of Matiate.*

***Keywords:*** *Wine, Production, Late Antiquity, Grape, Fermentation.*

## Genişletilmiş Özet

*Çalışmaya konu olan Matiate kenti Yukarı Mezopotamya Bölgesinin stratejik yerleşmelerinden birisidir. Hitit metinlerinde kentin bulunduğu coğrafya Kaşyari Bölgesi olarak nitelendirilmektedir. Matiate, Klasik Dönem'de Masius Bölgesi kenti olarak bilinmektedir. Günümüzde ise Orta Çağ'daki tanımlaması ile anılmakta ve Tur Abdin Bölgesi olarak yazılı kaynaklarda yer almaktadır. Tarihsel perspektifte kentin konumu Doğu Anadolu Bölgesi maden kaynaklarına ulaşmak adına anahtar rol üstlenmekteydi. Ele geçen yazıtlarda kent ile ilgili en erken verilere Assur yazılı belgelerinde rastlanmaktadır. II. Assurnasirpal ve III. Salmanassar Dönemlerine tarihlenen metinlerde kentin ele geçirildiği ve vergiye bağlandığı bilinmektedir. Yazıtlarda "Yatu" sözcüğü için Sümer dilinde ülke anlamına gelen tanımlama işareti kullanılmıştır. Söz konusu kullanılan işaretin Akad dilindeki karşılığı "Matu" olarak kayıtlara geçmektedir. III. Salmanassar'ın (MÖ 858-824) metinlerinde bu sözcüklere yer verilmektedir. Buradan hareketle filologlar tarafından kentin ismi Matuyatu ya da Matiate olarak çözümlenmiştir. Yazılı metinlerde kentin vergisini büyük oranda şarap ithalatı ve organizasyonuna dayalı olarak ödediği bilinmektedir. Assur varlığının akabinde kent uygarlıklar arasında çeşitli periyodlar ile el değiştirmiştir. Assur hegemonyasının akabinde İskit, Med ve Pers uygarlıkları kentte hüküm sürmüştür. Hellenistik Dönem ile birlikte Büyük İskender'in kontrolünde kentte yaşam sürdürülmüştür. Son olarak ise, Roma/Bizans ve Parth/Sasani arasındaki mücadeleler yaşanmıştır.*

*Matiate'nin ekonomik tarihinde bağcılık faaliyetlerine verilen önem göz önüne alındığında üzümler tipik Akdeniz manzarasından çok farklı bir topoğrafya ve iklimsel alanda yetiştirilmiştir. Bağcılığın kurak bir bölgede başarıyla yürütüldüğü anlaşılmaktadır. Bu durum kentte sulama organizasyonunun sıkı bir şekilde kontrol edildiğini göstermektedir. Kentin konumlandığı Mardin yöresi zengin yeraltı su seviyesine sahiptir. Kil içeren kireçli toprak yapısı üzümlerin yetiştirilmesinde olumlu bir etkiye sahiptir. Ayrıca bilindiği üzere üzüm çok fazla sulama gerektirmeyen bir tarım ürünüdür. Bu bölgede olduğu gibi Orta Doğu ve Kuzey Afrika çalışmalarından da kurak iklim koşullarında başarılı bir biçimde üzüm yetiştiriciliğinin varlığı bilinmektedir.*

*Matiate kenti katakomp mimarisinde inşa edilmiştir. Katakomp mimarisinin başlangıcında sadece defin amaçlı kullanıldığı bilinmektedir. Defin amaçlı kullanımına ek olarak sonrasında yeraltı şehirleri şeklinde bir örgütlenme gerçekleştirilmiştir. Bu dönüşümde özellikle Hristiyanlığı kabul eden kitlenin Roma yöneticilerinin kıyım politikalarından kurtulmak istemeleri etkili olmuştur. Çok tanrılı bir din politikası sonrasında insanların tek tanrılı inanca yönelmesi Roma yöneticilerini rahatsız etmiştir. Midyat çevresindeki kayaç türü yontulmaya oldukça elverişlidir. Bunun yanı sıra bu yerleşme modelinde iklim koşulları da oldukça etkili olmuştur. Böylelikle hem ısınma sorunu ortadan kalmış hem de iklim koşulları şarap üretimi ve muhafaza edilmesine imkân sağlamıştır.*

*Çalışmada iki şarap işliği değerlendirilmektedir. İşliklerden birisi a-1, diğeri ise a-10 yapısı içerisinde konumlanmaktadır. Hem a-1 hem de a-10 yapıları Geç Roma Çağı'na (M.S. 3-4. yüzyıl) tarihlendirilmektedir. Tarihlendirme kriterlerinde belirleyici ölçüt ele geçen seramiklerdir. Öncelikli olarak işliklerin bulunduğu kontekst içerisindeki tanımlamaları yapılmaktadır. A-1 işliğinde tek kullanım evresi tespit edilmiştir. Buna karşın a-10 işliğinde ise Geç Roma Dönemi sonrasında yapının ikincil bir kez daha kullanım gördüğü anlaşılmıştır. A-10 yapısı ikinci kullanım evresinde Yahudilere ait dini bir mekân özelliği kazanmıştır.*

*Antik Dönemde üzümün şıra haline getirilmesi için vida pres, takoz pres ya da levye pres yöntemlerinin kullanıldığı bilinmektedir. Yunan ve Roma uygarlıklarında kullanım alanı en geniş yöntem vida pres tekniğidir. Vida pres yönteminde ahşap sistemin döndürülmesi ile üzümlere baskı uygulanmakta ve ezilme işlemi gerçekleştirilmekteydi. Bir diğer yöntem olan takoz pres ile ilgili bilgiler duvar resimlerinden gelmektedir. Özellikle Pompeii Vettii evi duvar resimlerinden üretim modeli bilinmektedir (Figür 3). Bu mekanizma da iki dikey ahşabın arasına konumlandırılan takoz yardımıyla ezme işlemi yapılıyordu. Levye pres yönteminde ise ahşaplar halat yardımıyla bağlanmakta olup sağlanan yönlendirmeler ile presleme sağlanıyordu. Burada yer alan işliklerde hangi pres yöntemlerinin kullanılarak üretimin gerçekleştirildiği hususunun ortaya konulması amaçlanmıştır. Kentte ortaya çıkarılan işlikler değerlendirildiğinde a-1 yapısında takoz pres yöntemiyle üretimin gerçekleştirilmekte olduğu görülmektedir. A-10 kompleksinde ise vida pres yöntemi ile üretim gerçekleştirilmekteydi. Anadolu'da a-1 yapısındaki mekanizma sisteminin benzer örnekleri Tlos (Gözlengiç), Perre, Olba ve Karakabaklı yerleşimlerinden takip edilebilmektedir. Anadolu dışında ise Aijalon'da benzer uygulamaların varlığı bilinmektedir. A-10 yapısındaki vida pres yönteminde ise benzer uygulamalar Amorium ve Eretz yerleşimlerinden takip edilebilmektedir. Tekniklerin saptanmasının akabinde üretimin niteliği ve ticaret organizasyonu çalışma içerisinde ele alınmaktadır. Matiate kenti sakinleri bulunduğu coğrafya da şarap üreticileri arasında yer almaktaydı. Matiate kentinin yanı sıra tüccarların diğer bir uğrak noktası ise Karkamış kentiydi. Mezopotamyalı tüccarlar öncelikli olarak Karkamış kentine gelip alım gerçekleştiriyordu. Karkamış kentinden sonraki güzergâh ise Matiate kentine uzanmaktaydı. Assurlular'dan bu yana Edessa (Urfa), Resaina (Ceylanpınar), Tella (Viranşehir), Dunaysır (Kızıltepe) ve Matiate (Midyat) yol güzergahı takip edilerek ticaret organizasyonu gerçekleştirilmekteydi. Çalışma içerisinde ayrıca 2020 ve 2021 yıllarında ele geçen seramiklerin istatistiği yapılmıştır. Amfora tipindeki seramiklerin % 42 orana sahip olduğu gözlemlenmiştir. Bilindiği üzere amforalar ticaret organizasyonunda sıklıkla kullanılan seramik türü arasındadır. Kap formları içerisinde amforların yüzdelik dilimdeki yeri ticaret organizasyonunun varlığını destekler niteliktedir. Sonuç olarak burada takoz pres ve vida pres olmak üzere iki tip teknik kullanılarak üretimin gerçekleştirildiği ve ticaret organizasyonunun niteliği ortaya konulmaktadır.*

## Introduction

Matiate is located in Upper Mesopotamia. It has an important location both in historical periods and today in terms of vineyard area and grape production. The city of Matiate is located in the Kaschiari region. The term of Kaschiari is known from Hittite inscriptions (Erkanal, 2007, pp. 1-16). It was called as Masius in the Classical period (Olmstead, 1918, p. 229). Kaschiari is also referred to as Tur Abdin in the Middle Age (Ernest et al., 1973, p. 280; Korkut & Elyiğit, 2018, p. 35). Kaschiari has a feature that separates Eastern Anatolia from Mesopotamia. The main purpose of crossing the Kaschiari region was to reach the mining areas. Kaschiari is located on the trade route. Trade route started from the city of Edessa and extended to Nisibis in the east (Comfort, 2017, pp. 181-182). Due to the strategic importance of the region, the Assyrians taxed and captured the city of Matiate in the Kaschiari. After the Assyrians, the Scythian (635-625 BC) ruled in the region. Later, the Med (625-550 BC) and Persian (550-331 BC) civilizations came into existence. The region came under the rule of Alexander the Great in 331 BC. After Alexander's death, the Seleucid kingdom reigned. The Parthian (140 BC) and Armenian king Tigran (85-69 BC) ruled respectively. After that, the region changed hands frequently and the struggles continued between Parthia and Rome (Çevik, 2007, p. 112; Güneş, 2012, p. 74). After the death of Iuliaunus in 363 AD, for the Romans, Amida acquired great importance and the Euphrates River and Syria were approached in the east. Until the mid-4th century AD, massacre policies were carried out against Christians in the region. The history of massacre policies dates back to the Nero period. At the end of the 4th century AD, an atmosphere of tolerance was established in matters related to region. After the 4th century AD, the best example of the tolerance in the region is the Mor Gabriel Monastery. Palmer emphasizes that donations were made to the monastery by the emperors of the period (Palmer, 1990, pp. 49-52).

Considering the importance given to the viticulture industry in the economic history of Matiate, grapes were grown in a topographic and climatic area very different from the typical Mediterranean landscape. It seems that viticulture was successfully carried out in an arid and very different area. Irrigation was also highly controlled and techniques for growing grapes were successfully implemented. Matiate is located in a settlement with high groundwater levels. Accordingly, clay-containing and calcareous soils positively affect the structure of the grapes. In addition to, hot and dry climate conditions are also important in growing grapes. Because it is a crop that does not require much irrigation, it can be grown efficiently in arid regions. The existence of high-quality grape production is also known from Middle Eastern and North African studies. It is known that wine production existed in North Africa and the Middle East in antiquity (Bowden & Lavan, 2004, p. 13; McGovern, 2019, p. 71; Rogerson, 2018; Dodd, 2020, p. 20; Ghazal & Hanssen, 2021, p. 33; Hitchner, 2022, p. 218; Dodd & Limbergen, 2024, p. 12).

In addition to the strategic importance at the point of the transit route, the economy of the city is largely based on viticulture and wine production activities. Wine was a product with high import organization in Mesopotamian and surrounding cultures from the 4th millennium BC (Laneri, 2018, p. 225). It is a drink that is often encountered in ritual scenes and members of the elite class in antiquity. Production was part of the socio-economic activities of the settled societies in Kaschiari. Matiate's people produced wine and ıt was a settlement where wine was imported by Mesopotamian elites (Palmer, 1990, p. 1; Luckenbill, 1927, p. 178; Wallis-Budge, 2005, p. 228; Forlanini, 2006, p. 148; Bryce, 2009, p. 338). Besides the city of Matiate, Carchemish was another location preferred by the Mesopotamian elites (Laneri, 2018, p. 228). Mesopotamian elites continued their commercial activities between Matiate and Carchemish.

Viticulture, which constituted an important part of agricultural activities in ancient times, was associated with the cult of Dionysus along with wine and was considered sacred. Apart from the experience of mythological characters, wine was an indispensable consumer product of ancient people in ceremonies and entertainment. In autumn, grape harvesting was done by singing songs. For ancient people, it had become a ritual in which grief and pain were left aside. The bunches of grapes collected with sickle-shaped knives were first filled into baskets and then taken to wine presses. Wine presses were set up close to the vineyard where the grapes were harvested to prevent them from losing their juice. We know that the grape harvest and wine-production scene on the shield of Achilles related to the stage of production (Papakonstantinou, 2009, p. 3).

Production and organization are determined in Matiate. Matiate is located within the borders of Midyat district of Mardin province (Fig. 1). The workshops have been identified in two areas. The first workshop is located in building a-1. The second workshop is located in building a-10. First of all, wine presses will be defined in the

study. After that, production techniques will be revealed. As a result, the relationship between production and organization will be interpreted.

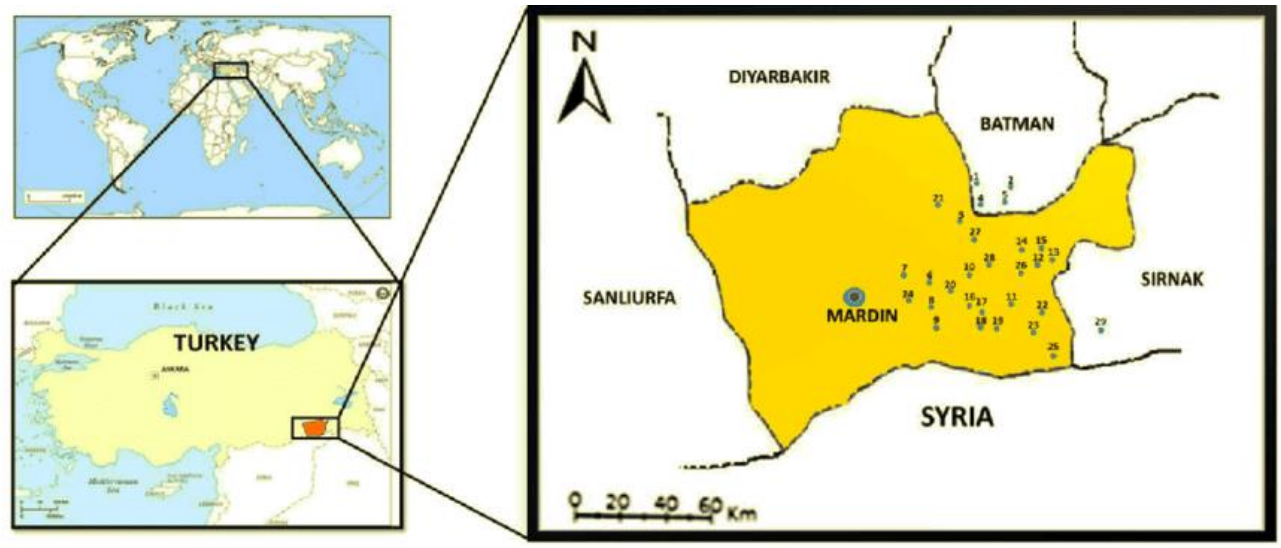


*Fig. 1. Location of Mardin and Midyat districts on the map (Akgül et. al., 2018, fig. 1)*

## The Ancient City of Matiate

The city of Matiate is located within the borders of Midyat. The region where the underground city was located in ancient times was known as Kaschiari or Tur Abdin (Fig. 2). Due to the presence of minerals in Eastern Anatolia, the region is on the transit route. Therefore, the region has become a centre of attraction in ancient time.

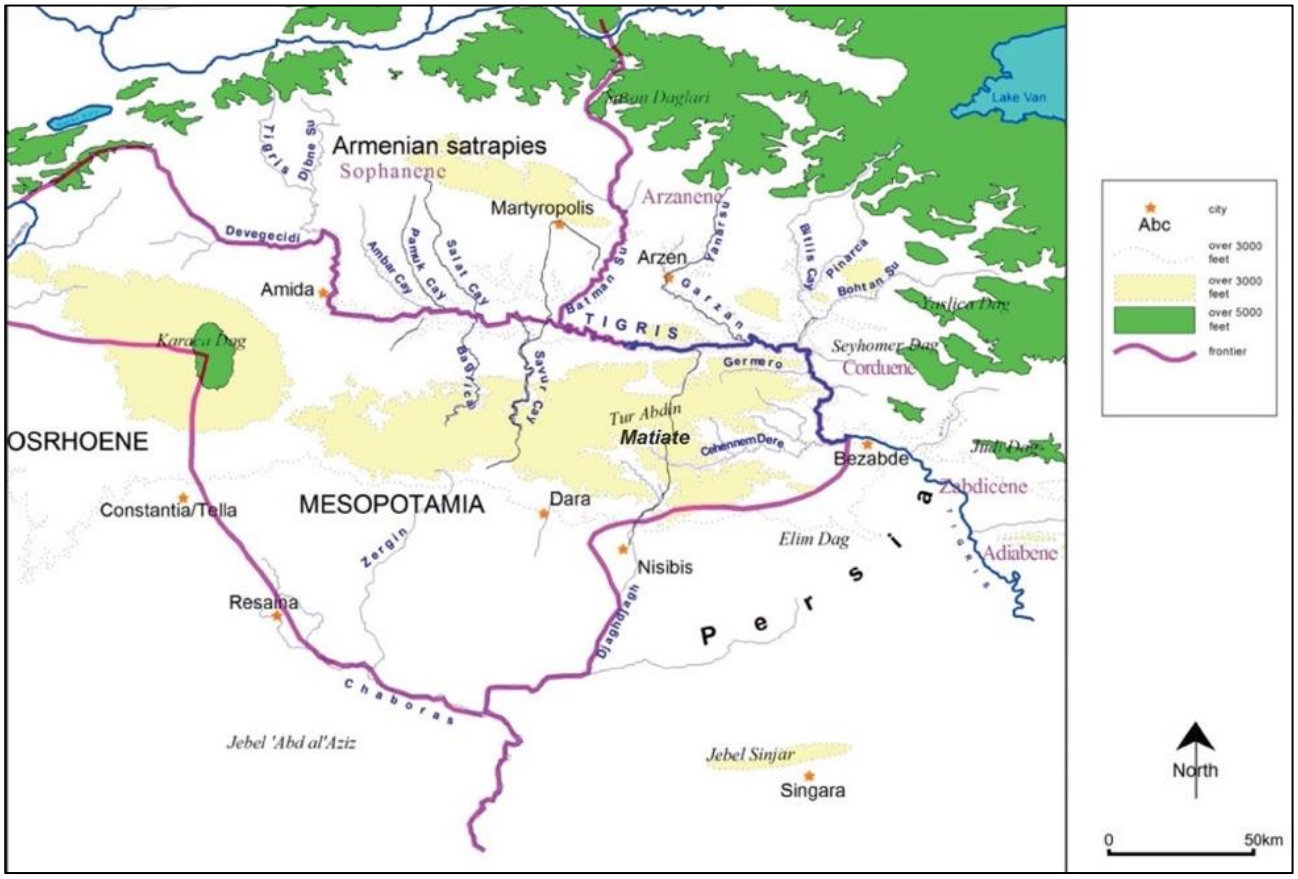


*Fig. 2. The map of the archaeological site of Matiate in the Tur Abdin region (Excavation archive)*

The ancient name of Midyat is mentioned as Matiate or Matuyatu in Assyrian inscriptions (Bryce, 2009, p. 338; Laneri, 2018, p. 228). The earliest data about the underground city dates back to the Assyrian period. The city of Matiate is found in texts dating to the Ashurnasirpal II and Shalmaneser III periods. The Babylonia village, which is close to the Syrian border, 20 km southwest of Cizre is cited as the region of Subnat. Here, both steles were found from the Assyrian period. While one of the steles is missing, the other is preserved in the Adana Museum (Erkanal, 2007, p. 3).

After leaving the Subnat region, on the way to Kaschiari region, the Ishtarate road is used and then the city of Kibaki is reached (Olmstead, 1918, p. 236). Kibaki is defined as the village of Kivah. It is located 25 km west of İdil in Şırnak (Kessler, 1978, p. 102; Reade, 1982, p. 46; Erkanal, 2007, p. 3). Ashurnasirpal II camped in the city of Kibaki with his army and taxed the city (Bryce, 2009, p. 338). After Kibaki, the city of Matiate was captured. It is stated that when the city was captured by the Assyrians, the settlement consisted of rock and a stele was erected on which the figure of king Ashurnasirpal II was engraved (Olmstead, 1918, p. 236).

The following information about Matiate in the Ashurnasirpal period: “After leaving Kibaki, I approached Matiate. I have occupied the city of Matiate. I defeated around 2800 soldiers and got a lot of loot. I forgave those who ran away from me and then fell at my feet. I let them stay at home. But I put my officer on their heads, attaching themselves to heavy war reparations. I engraved my relief on a stele and had my achievements written on it. I had this stele erected at Matiate. Then I occupied the Maşula castle and two settlements. I took a lot of loot by defeating 300 soldiers in battle. Then I destroyed everything by burning” (Erkanal, 2007, p. 3). It is known from written sources that Shalmaneser III also organized a campaign against Midyat. In wiritten sources, information about the expedition is given as follows: “I crossed the Ishtarate road and walked over the land of Yatu. I have completely occupied the land of Yatu. I have obtained a large amount of loot” (Erkanal, 2007, pp. 3-4). While “Yatu” is mentioned in the inscription, the identification mark, which means “country” in Sumerian, is used. The Akkadian equivalent of the sign is “Matu”. In the texts of Shalmaneser (858-824 BC), Matiate’s name is mentioned as Matuyatu (Erkanal, 2007, p. 4). Excavations have been carried out in two areas in the underground city. This is the Estel part of Midyat as a location. Architectural elements related to both production and storage was identified in two areas.

The underground city was built in catacomb architecture. Catacombs were built as galleries in the first years of Christianity’s spread in Rome. Although these galleries were first designed as burial areas, after that, galleries were converted into living spaces. According to Serin’s report, as far as is known from the legends, it is known that the first Christians who took refuge in these places, escaping from the massacres carried out by the Roman emperors against Christians, from the time of emperor Nero to Diocletian, not only fulfilled their burial requirements and related religious rituals in the catacombs, but also spent their lives here (Serin, 2019, p. 287). Massacre policies must have forced people to settle in more protected areas. Matiate also contains multiple functional units, just like Rome catacomb.

The excavations were carried out in two sections on an area of approximately 3500 square meters. It is planned to expand the work. The underground city was built to accommodate approximately 50000 people. This number was calculated as an estimate based on the surface area of the settled settlement. During the excavations, archaeological material dating back to the 2nd century AD has been found so far. It is known from existing inscriptions that the origin of the city dates back to the Assyrian period. It is possible to find artifacts dating back to the early period through excavations.

### Wine Presses

As a pressing technique, the grapes were crushed by foot and the juice was extracted with press machines, then left to ferment in the containers where wine was stored. The juice obtained from the grapes, which were crushed with feet and then pressed, would fill wine vessels below through the holes in the pool. While the quality of wine obtained from the juice of the first grapes is high, the quality of wine obtained from the later pressings is lower. The grape pulp and skins were mixed with hot water again, and second quality wine or vinegar was obtained. In the final stage of wine, the fermentation stage, the juices of the grapes transferred to the pool are transferred to the containers where the wine will be stored. After the waiting phase, the sugar in the grape juice turns into alcohol and carbon dioxide over time. The amount of sugar determines the percentage of alcohol in it. Wine, whose fermentation period is over, is filtered through a fine cloth into amphorae that are completely

coated with resin. These amphorae were left to rest in place, not exposed to light and heat. There are numerous studies on pressing methods and fermentation processes in antiquity (Frankel, 1999, p. 180; Aydınoğlu, 2009, p. 18; Diler, 2010, p. 135; Waliszewski, 2014; Uygun et al., 2015, p. 501; Dodd, 2020; Brun, 2020, p. 3).

The pressing method has three techniques. The production was carried out using methods such as screw press, wedge press, and lever press (Frankel, 1997, p. 73). The screw press, commonly used in Rome and Byzantium, consisted of a wooden block or a large screw-shaped apparatus (Frankel, 1992, p. 48). The wooden block was rotated so that the apparatus directly pressed the grapes and crushed them (Erickson-Gini & Mamalya, 2022, p. 143). There is no written information about the wedge press (Baratta, 2005, p. 66). This method is known from the wall paintings of the house of Vettii in Pompeii (Fig. 3). The wedge press allows grapes to be crushed with a system placed between two vertical timbers.

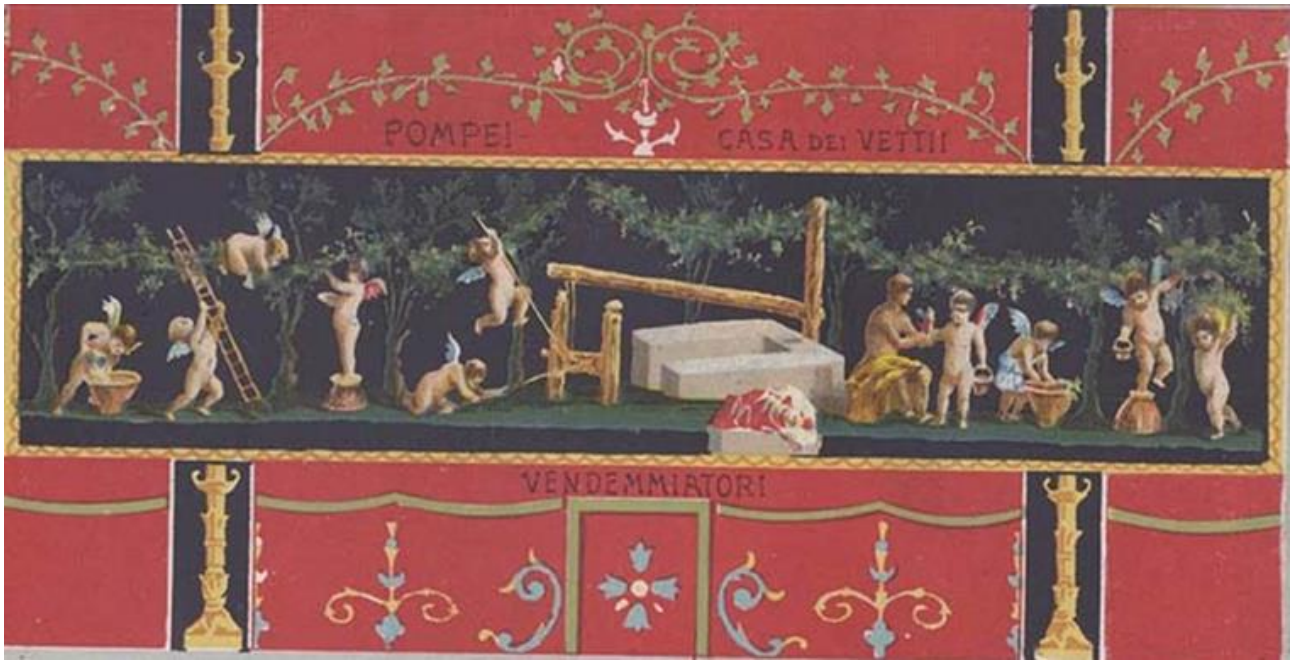


***Fig. 3.*** *The demonstration of production technique in Pompeii (www.pompeiiinpictures.com/pompeiiinpictures/R6/6%2015%2001%20cupids%20p2.htm)*

The lever press method is known from the depiction of an Attic vase (Koparal & İplikçi, 2004, p. 225, fig. 7). We see that the grapes are crushed with the power obtained from the weight held by a wooden beam fixed to the wall at one end and pulled with the help of a rope (Ayalon, 2015, p. 101). Numerous examples of press weights are known in Asia Minor. The press weight found in Örenarkası is also an example (Fig. 4).


***Fig. 4.*** *Press weight from Örenarkası (Laflı, 2017, fig. 11)*

Assyrians are one of the important ethnic groups of the region. The technique of squeezing vessel was mostly preferred by Syriac. They have been producing traditional wine for century. The grapes are filled into cauldrons placed in the courtyard of the house. The grapes are kept in the cauldron for a week and dried. After that, it is placed in squeezing vessel. Wine press is a unique device used to extract-squeeze juice from grapes before the winemaking process can start. There are a number of different styles and sizes of grape presses used by winemakers, but their overall function is the same. Then, grape juice is filled into containers and left to rest under suitable environmental conditions. It does not contain additives. It takes 40 days to mature. Finally, it is ready to drink.

The elements of architectural buildings that serve as storage and workshops can be seen in more than one place in Matiate. The grape workshop is located in the southern part of the corridor in the building a-1 (Fig. 5). Production was provided with the silo and technical mechanism opening to the ground from the south. The southern silo has a mouth diameter of 70x50 cm and a depth of 120 cm. Raw material is transferred from the silo to the pressing area through the channel opened on the floor. The material used in the pressing area was probably wood, so it has not survived to the present day. The existence of the pressing area can be proven through the mechanism holes opened into the ground. It is known that there were grape workshops in many ancient cities in Anatolia. It is known that a similar practice existed in the Gözlengiç winery in the ancient city of Tlos (Fig. 6).

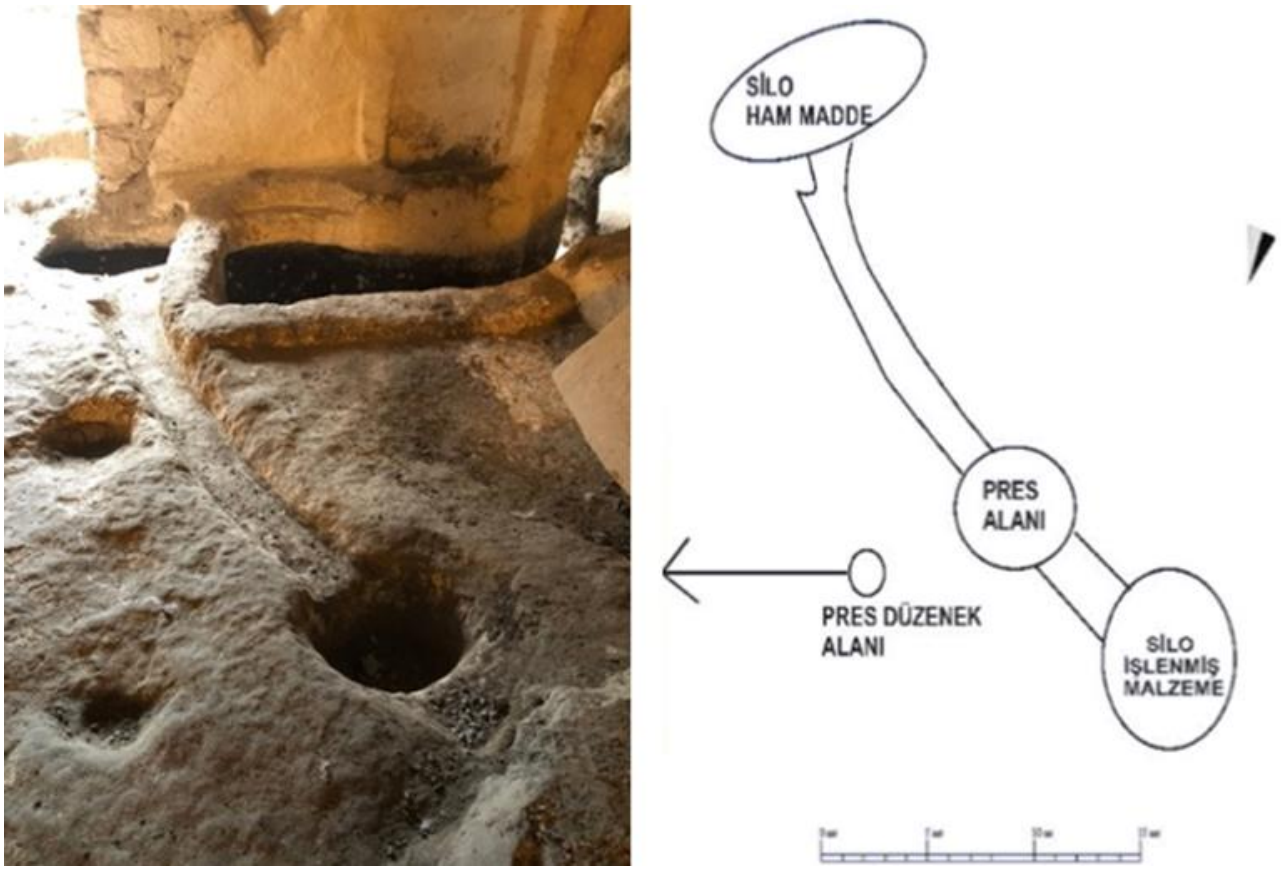


***Fig. 5.*** *The workshop arrangement in building a-1 (Excavation archive)*

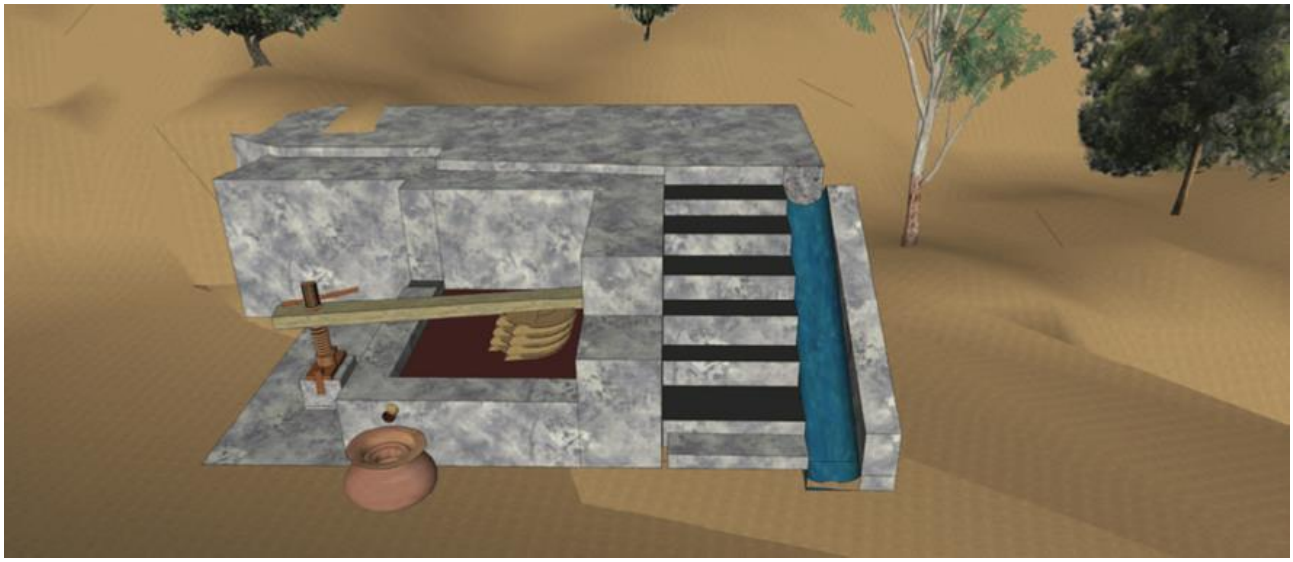

***Fig. 6.*** *The model of wine workshop in Gözlengiç (Uygun et al., 2015, fig. 12)*

The workshops in the ancient city of Perre are carved directly into the rock and have a similar quality (Yağız et al., 2022, p. 147). Wine press of the city of Olba has a round form and is another example in a similar context carved into the rock (Fig. 7). The Karakabaklı press was built using the same technique (Fig. 8). It is known that this type of production mechanism is other than Anatolia. The workshops carved into the rocks can be followed in the Park of Aijalon (Hirschfeld, 1983, fig. 23). Another silo is located after the pressing area. The pressed grapes were stored there. The silo's mouth diameter is 74 cm and its depth is 220 cm. Production was carried out using the wedge press method. First of all, the grapes stored in the northern silo were crushed. Then it was pressed with the wedge system. After it was pressed, it was stored in the south silo.

***Fig. 7.*** *The workshop in Olba (Yeğin, 2016, fig. 4)*

***Fig. 8.*** *The workshop in Karakabaklı (Çakmak, 2010, fig. ü-4)*

Undoubtedly, one of the most important elements in production organizations is storage. The silos (7 pieces) were built to store materials in the building a-4 (Fig. 9). The walls of silos are plastered. Plastered walls are a precaution taken against insect infestation. There are 4 niches and 3 klines on the walls of the building. The building was carved into the main rock in a circular form. It is 9.60 meters in the south-north direction and 8.90 meters in the east-west extension. The height of the building is 2.25 meters. The entrance to the building was via a-5. The primary problem is moisture in storage. Moisture allows bacteria to grow. Therefore, the consistency and taste of the product changes. It is seen that the silos are plastered with lime in order to prevent the product from spoiling. Temperature is very important in storage. Measurements were made in summer and winter. It was determined that the temperature was between 5 and 10°C degrees in both seasons in ancient city of Matiate. The type of rock is a big factor in ambient temperature. It is an ideal amount of heat for storing the product.


***Fig. 9.*** *The silos in the building a-4 (Excavation archive)*

***Fig. 10.*** *The photo of building a-10 (Excavation archive)*

Another workshop was identified in the building a-10 (Fig. 10). The building had two phases of use. First of all, the building was used as a workshop and dates back to the Late Roman Period (3rd and 4th centuries AD). Cilicia and Cyprus type ceramics support the dating criteria. In its final phase, the building was converted into a religious place. The workshop was transformed into a pool, which is interpreted as a Mikveh. According to Ersun, the building acquired a Jewish religious character in its secondary use (Ersun, 2024, pp. 33-34).

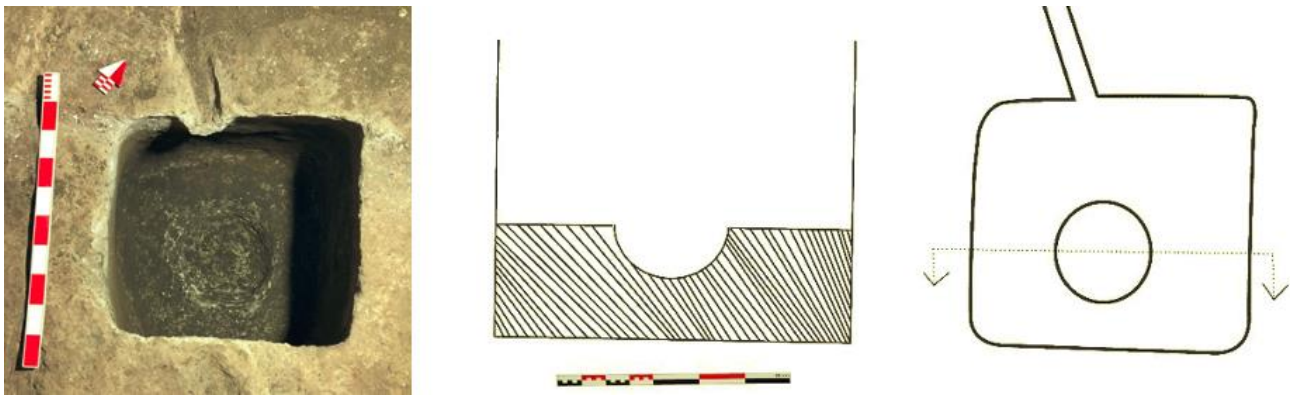

***Fig. 11.*** *The photograph showing the cross-section and plan of the i-2 workshop (Excavation archive)*

The workshop is defined as i-2 (Fig. 11). The mouth diameter of the workshop is 92x82 cm. A building element with a depth of 40 cm is included at the base level. The screw press was used here. A hole was opened in the ground for the screwing technique. The production was carried out using the screw press with the help of a wooden mechanism. By rotating the wooden block, the apparatus directly pressed the grapes and crushed them. After the grapes were crushed, they were taken to storage areas and left to rest. Finally, it was filled into amphorae. A large number of amphorae pieces were found. The find of ceramics unearthed support this situation. The screw press can be followed in the ancient city of Amorium (Fig. 12). The square form carved into the ground and the similar mechanism can be seen in Eretz (Ben Zvi, 2012, p. 30).

***Fig. 12.*** *The workshop in Amorium (Lightfoot, 2007, fig. 2*)

## Organization

The city's economy is based on viticulture and wine production. For the Assyrians (Syriac), with a history of 5000 years, the Tur Abdin region is as important as Jerusalem (Dikçınar & Yazgan, 2009, p. 81). Today, as in the past, wine production and import are largely carried out by Assyrians in the region. This situation is the continuity of the tradition from the past. This adventure of wine started in Mesopotamia in the 4th millennium BC (Laneri, 2018, p. 225). The production and import had a high value in Mesopotamia and surrounding cultures. Wine production was part of the socio-economic activities of the settled communities in the Tur Abdin region. Matiate was one of the settlements where wine was produced and with this feature, the city became a frequent destination for Mesopotamian elites or merchants (Forlanini, 2006, p. 148). Since the Assyrians, the region has been a common stop for merchants and also a transit route for mineral trade extending to eastern Anatolia.

Mesopotamian traders were importing wine in the region. The cities of Matiate and Carchemish were the main settlements of the import organization. Carchemish was the first settlement that merchants came into contact with in their trading activities. A road network had to be followed to reach the city of Matiate. After the city of Carchemish, the next station was Edessa. After that, the city of Dunaysır was reached via Tella and Resaina. Finally, the person who reached the city of Matiate was carrying out her commercial activities. As in the past, the region where the city of Matiate is located continues its winegrowing activities today.

The geopolitical locations of cities are important in both domestic and foreign markets for exporting products. Matiate's location on trade routes is important for selling its products to foreign markets. In the trade process, the inhabitants of Matiate first paid their taxes with wine. After that, surplus product continued to be exported. Matiate was the stopping point for traders coming from Mesopotamia. Both Palmer and Forlanini support the case for trade organization in the light of archaeological data (Palmer, 1990, p. 1; Forlanini, 2006, p. 148).

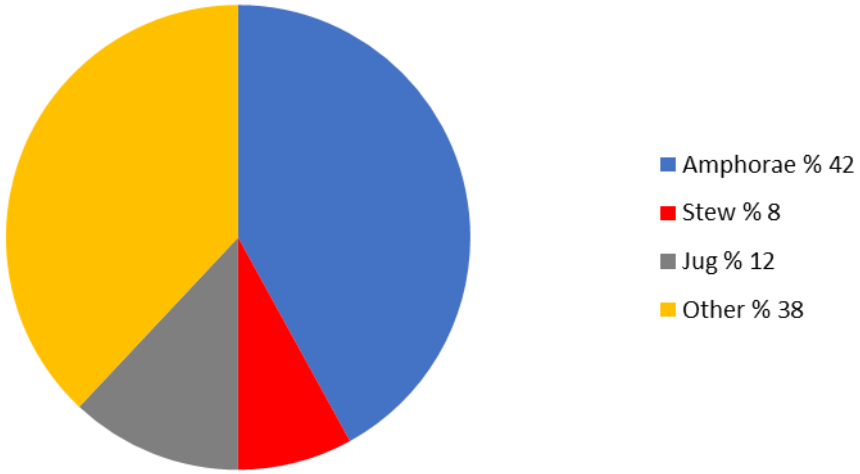


***Table 1.*** *The table of ceramic distribution in Matiate (Excavation archive)*

It is seen that the amphorae have a high percentage in the ceramic distribution (Table 1). The ceramics unearthed during the excavations carried out in 2020 and 2021 were statistically evaluated. First of all, the ceramics were cleaned. After the cleaning process, they were grouped according to their forms. Then, the determining factors that reveal the characteristic features of ceramics were examined. Raw material content and provenance are the main determining features in detection process. In addition to, shaping and cooking properties are other determinants.

As it known, amphorae were preferred both storage and import organization in ancient period. Amphorae, which have survived to the present day in various forms, were used to carry grain, olives, oil and wine. The percentage of amphorae show that the stocking and distribution of the product was mostly organized through this container. Amphorae are not locally produced. It is the type found in the Cyprus and Cilicia region. It is from the Zemer 41 and LR1 type product group. The productions of this type of amphorae were particularly widespread between the 1$^{st}$ and 4$^{th}$ century AD (Söğüt, 2024, pp. 223-224).

## Conclusion

The main source of income of Matiate residents was based on production. As it is known, grapes are an agricultural product that does not require much irrigation. Although limited water resources in the region, it is a product that can be produced efficiently. The raw material obtained was first stored in silos and pressed. Then, wine production took place and it was circulated through trade. Trade was the basic of the regional economy. Today, this situaiton is as important for the development of the region as it was in the past.

Wine is an instrument that is always seen in ritual scenes. The earliest examples of this situation were found in Mesopotamia and surrounding cultures in the 4th millennium BC (Laneri, 2018, p. 225). In addition to ritual scenes, it is a product frequently encountered in daily life. Wine had a high import value in ancient times. Matiate was an important location for wine production. The existence of commercial relations with Mesopotamia was known. The workshops and silos prove the existence of production.

The workshop in a-1 is one of the building elements where production takes place. In this system, primarily the grapes that were driven from the silo to the canal were pressed with the help of a wooden mechanism and stacked in the silo. Because the mechanism is wooden, it has probably not survived. Numerous examples of wooden mechanisms are known in Anatolia. Wine was also produced in the i-2 workshop. The workshop was dated to the late Roman period (3rd and 4th centuries AD). The function of the place was changed in the 4th century AD. The building has acquired a religious character, and the workshop was turned into a pool called Mikveh. Its conversion into a religious building must have likely negatively impacted production.

The existence of two workshops has been revealed in the underground city so far. Matiate is one of the important cities of the Tur Abdin region and spreads over a very wide area. It is thought that the number of

examples will increase with research conducted in the coming years. It is concluded that the inhabitants of Matiate used two methods in wine production, based on the existing workshops. While the wedge press was used for production in workshop a-1, It was carried out using the screw press in workshop a-10. The use of both techniques can be proven with the help of existing workshops.

Because it is functional, screw press was frequently preferred in the late Roman period. The apparatus applied direct pressure to the grapes by rotating the wooden block for screw press. On the other hand, the wedge press required more human intervention. For this reason, the wedge press should be more preferred. Ceramic density also reveals that screw method is more preferred.

There is limited information on ancient Greco-Roman viticulture in the Southeastern and Eastern Anatolia. A large number of wine stocks were found preserved in cistern dug into the ground and plastered with mud in the city of Koenes on the left bank of Tigris. In addition to, wine called Monarites was produced in Melitene and was of very high quality (Laflı, 2017, p. 30). Another location for traders coming from Mesopotamia was the city of Carchemish (Laneri, 2018, p. 228). The settlement where similar workshop existed was Perre. On the eastern border of Rome, trade activities extended from Edessa to the city of Matiate. The existence of similar workshops indicates a trend in economic relations between cities.

Production and export were important factors in the basic of socio-economic relations. First of all, wine was transported from the city of Matiate to the Dunaysır. After that, it was exported via Tella, Edessa and Carchemish. As a result, it was distributed to the cities of Mesopotamia. Trade organization takes place on the route mentioned here. The economy of the city has been based on viticulture activities since the Assyrians. Therefore, architectural elements and written records strengthen the possibility of wine production and export.

The typology of ceramic vessel has been revealed in this study. The ceramic group was dated to the late Roman period (3rd and 4th centuries AD). Amphorae type has a ratio of 42 %. The majority of amphorae have pointed bottom. The use of pointed-bottomed amphorae is common in Mesopotamian and Asia Minor cities. The stew has a distribution of 8 %. The Jug has a rate of 12 %. 38 % of the forms could not be grouped because it was found in small pieces that did not show a profile. The percentage of amphorae within the find group support to the possibility the trade organization.

It is aimed to make the workshops functional in the coming years with the experimental archaeology method. Archaeobotanical material didn't find in the building. Therefore, chemical analysis could not be performed. However, if new workshops find, chemical analyses can be carried out in Matiate. In addition to, it is aimed to reveal the regional differences in ceramics.

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