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Agricultural Production Technology of Ancient Çorum in the Light of Press Weight Stone (Litus) Findings

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Abstract

This study examines the press weight stones (litus) identified within the borders of Çorum Province in order to provide new insights into the region's agricultural production technology and capacity in antiquity. Litus, which were essential components of pressing mechanisms used to produce wine from grapes and oil from olives, serve as significant indicators for understanding the agricultural diversity and technological level of the areas where they are found. Sources ranging from Hittite texts to Ottoman archival records and modern TUIK statistics demonstrate the historical continuity of viticulture in Çorum. While Hittite documents suggest that olives were not locally cultivated and that wine production was widespread, Ottoman tax registers reveal that tithe and must levies from vineyards increased considerably between the 16th and 19th centuries.
During the survey conducted across districts, villages, and archaeological sites, 215 press weight stones were identified at 71 locations. These artifacts were mostly produced from local limestone, though some were repurposed from architectural blocks. Only a few examples remained in situ, while most were reused in village fountains, building foundations, or transformed into mortars. Typological analysis, based on Anderson's classification, identified 16 main types and 10 subtypes in the Çorum region. Type 1 was the most common, while others were less frequently represented. The findings indicate that Çorum was a significant center of viticulture and wine production in antiquity and reveal the technological diversity of its agricultural practices.

Keywords: Ancient Viticulture, Press Weight Stone, Litus, Wine, Çorum.

JEL Codes: N01, N5, N9

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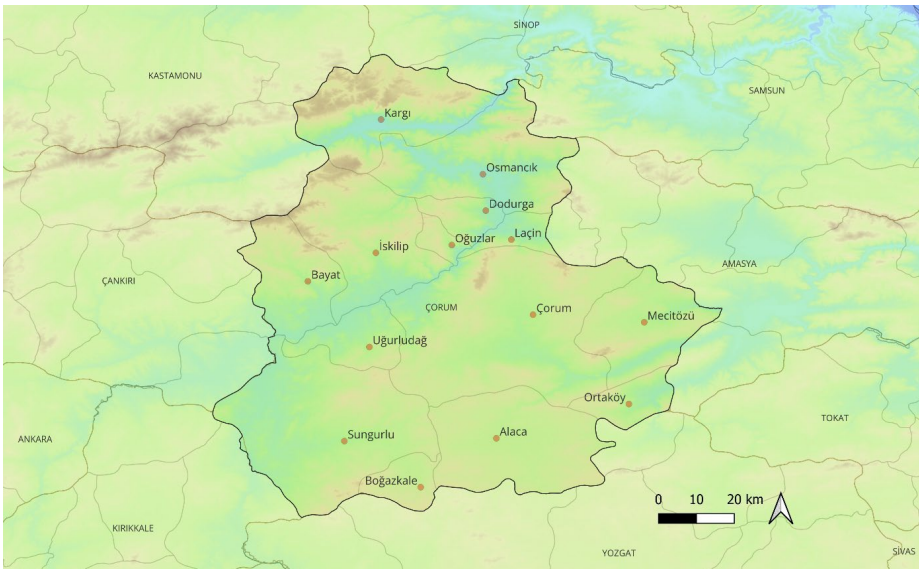
1. Introduction

The subject of this study is to determine the capacity of viticulture and grape cultivation in the region during the ancient period based on the density and distribution of press weight stones, known as "litus" in ancient times, identified within the borders of Çorum province. Litus is the general name for blocks found in pressing mechanisms used in ancient times to obtain wine from grapes or to produce olive oil, also known as press weight stones. Since litus were used directly in grape or olive pressing, they provide important data about the agricultural production technologies of the ancient period in the regions where they are found. Furthermore, their typological characteristics and the symbolic marks on them allow for the determination of their chronology of use and similarities with surrounding regions. One of the most important results is that they provide detailed data on the climatic and geographical conditions of the region and the diversity of ancient agricultural production.

Çorum is located in the Central Black Sea region of Turkey. It is bordered by Sinop to the north, Samsun to the northeast, Kastamonu to the northwest, Amasya and Tokat to the east, Yozgat to the south, and Çankırı and Kırıkkale to the west. Çorum province comprises a total of 14 districts, including the central district as well as Alaca, Bayat, Boğazkale, Dodurga, İskilip, Kargı, Laçin, Mecitözü, Oğuzlar, Ortaköy, Osmancık, Sungurlu, and Uğurludağ (Map 1). There are a total of 757 villages within the 12,820 km² area of Çorum province[1].



Map 1. Map of Çorum Province, its Districts, and Neighboring Provinces

Due to its geographical location, there are marked differences between the northern and southern districts in terms of climate, topography, and consequently agricultural production. In terms of climate, Çorum displays a transitional character between the "humid temperate-maritime climate type" in the north and the "semi-arid-continental climate type" of Central Anatolia in the south (Nişancı, 1989, s. 70; Şahin, 2004, s. 35).

This study, which aims to determine the region's wine-growing capacity in ancient times, contains the results of a project that took shape in four different stages. The first stage was the research of historical sources; within this framework, Hittite written sources containing detailed information about the region and subsequently, Ottoman tax records were examined. The second stage involved the analysis of current data and statistical records. The third stage involved fieldwork in regional museums, in villages where spolia materials were used, and associated with ancient workshops. In the fourth and final stage, the data were digitized, distribution maps were created, and typological classifications were carried out.

2. Archaeological and Epigraphic Data on Olive and Vineyard Cultivation in the Hittite Period

The earliest data on the agricultural production and plant diversity of the province of Çorum is obtained from cuneiform tablets dating back to the Hittite Period, which relate to religion, mythology, medicine, pharmacy, law, fortune-telling, and magic (Ünar, 2018, ss. 6260-6261) . Plants mentioned and described in the texts (Ertem, 1972, ss. 85-86; İnan, 1939, ss. 427-428; Sipahi, 2015, s. 40; Şahingöz vd., 2015, s. 392; Ünal, 1995, s. 75, 2011, s. 280; Vigo, 2014, s.

[1] https://corum.csb.gov.tr/sharp304-l-sharp304-m-sharp304-z-hakkinda-i-650

21), it is understood that the types of fruits and vegetables grown in Anatolia have not undergone much change in general. Research has revealed that due to the wetter and milder climate of Anatolia during the Hittite period, forested areas were much more extensive than today, and consequently, Anatolia was rich in fauna and flora during the Bronze Age (Arıhan, 2012; Bellwood, 2008; Ertem, 1987) .

The primary function of the litus stones that form the subject of the project is to press grapes and olives to separate their juice and oil. For this reason, the plant species focused on are olives and grapes. GIŠ SERDU/ GIŠZERTUM, which frequently appear in Hittite sources, are concepts that describe olives or olive trees (Ertuğ, 2000, s. 174; Ünar & Ünar, 2021, s. 145). The fact that the Akkadian name for olive is used in many tablets related to magic, divination, medicine, pharmacy, and law, and that it is understood to have been used in religious/cult rituals, is interpreted as meaning that there is no equivalent in the Hittite geography. Furthermore, considering that there are no provisions in Hittite laws concerning olives and olive trees, it has been interpreted that olives were not cultivated in the core region of the Hittite Empire within the Kızılırmak Bend, and that the olive oil needed was sent as taxes or gifts from vassal kingdoms in the South, West, and Southeast (Ünar & Ünar, 2021, s. 147). Considering that olive trees are distributed in a small part of Southeast Anatolia due to climatic reasons, as well as along the Mediterranean, Aegean, and Marmara coasts and in some areas along the Black Sea coast, it follows that it is not possible to cultivate them in the continental climate of Central Anatolia (Koca, 2004, s. 121; Tuğaç & Sefer, 2021 Fig.5). One of the main reasons for this situation is that olive trees cannot grow at high altitudes. In Anatolia, although planting them in areas above 500 meters is risky (Ak & Ekinci, 2024, s. 78), especially in southern regions, these trees rarely grow at altitudes of 900-1000 meters, and even if they do, they do not bear fruit. (Bulut, 2018, s. 679; Yücel, 1958, s. 159).

This situation indicates that the litus identified in the region were only used for pressing grapes. With the help of Hittite land donation documents, it is understood that vineyards occupied an important place among the lands used for different purposes (Rüster & Wilhelm, 2012) in the geography of Central Anatolia during the Bronze Age (Doğan-Alparslan, 2020, ss. 206-207). In written sources, GIŠGEŠTIN, wiyana-, GEŠTIN (fresh grapes), GEŠTIN HÁD.DU.A (dried grapes), GEŠTIN.LÀL (honey wine), GEŠTIN. KU: ("sweet wine", grape syrup or molasses mixed with water and drunk), EZEN GEŠTIN (vineyard harvest festival) and GAL GEŠTIN ("grape head", "head of the state vineyards" or "wine head") (Pelvanoğlu, 2024) the frequent use of concepts corresponding to words such as grape, vineyard, and wine, such as, is also evidence supporting this situation (Alp, 1999, p. 69; Ünal, 2016, p. 861; Ünar, 2019, pp. 15-18). The word "GEŠTIN" refers to both the vine plant and wine.

3. Archaeological Data

Litus, in its most general definition, constitutes a part of the mechanism used in olive oil or wine production. It is a large block of stone with a hollow in the middle where a wooden screw system is placed and wooden sockets on the sides used to secure the wooden screw. In this system, the wooden screw, which can rotate in the groove opened in the litus, is connected to a vertical movable beam (plerum), one end of which is placed in a square-shaped socket on the opposite wall (Ortaç, 2013, s. 411 Fig. 48). A press bed with drainage channels on its sides is placed under this beam. Olives or grapes prepared for pressing are placed in burlap sacks and placed on this press bed. Turning the wooden screw causes the beam to descend, applying pressure to these sacks and extracting the olive oil or grape juice inside.

Pliny, who lived in the 1st century AD, describes the ancient olive oil and wine production process in his work "Naturalis Historia" and also provides information about a variety of pressing mechanisms (Plinius, 1952 XVIII.74.314-320). According to Pliny, in ancient times, the pressure lever pulled down by materials such as rope, leather straps, or levers was replaced in the last century (probably the 1st century AD) by a pressure lever to which screws with spiral grooves, invented by the Greeks, were attached. Frankel has defined this type of screw weight/press stone as an "Arginunta press" (Frankel, 1993, s. 107 Fig.1.1; Frankel, Rafael, 1999, s. 110 Fig. 20, 2016, s. 559 Fig. 34-3c).

Paton and Myres, who conducted research in Western Anatolia and the Aegean islands in the late 19th century, modeled ancient press workshops based on the pressing systems still used by villagers (Paton & Myres, 1898, ss. 210-211 Fig.1) (Figure 1). During his travels in the Pontus region in 1890, Anderson recorded not only a great deal of archaeological data but also the ancient press weights he encountered. Anderson also conducted a typological study of the *litus* he identified, grouping these artifacts into a total of 7 types (Anderson, 1903, s. 15 Fig. 1-7).

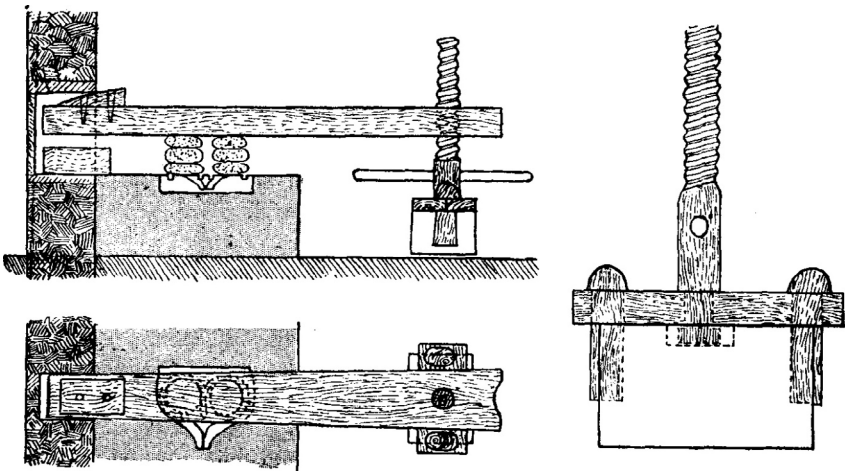


Figure 1. Screw Press Mechanism and Method of Using the Litus (Source: Paton & Myres, 1898, Fig. 1)

Surveys conducted in Samsun province, a northern neighbor of Çorum province, reported the discovery of over fifty press weights (Kahl, 1991, ss. 250-252). Litus samples were also encountered during surveys conducted in certain parts of Samsun, Tokat, and Amasya provinces between 2015 and 2017 (Aktaş, 2022, ss. 467-483). In the province of Bolu and its districts, which are cities in the Western Black Sea region (Ortaç, 2011, s. 339, 2012, ss. 143-154), in Marmaris-Bozburun (Kuban, 2010, s. 218), in Sedir Island (Diler, 2007, s. 82) and Phrygia Hierapolis (Scardozzi, 2010, s. 210) similar examples of litus have been found. As a result of field research conducted in the Yozgat region, similar litus blocks were identified in northern districts such as Çekerek and Aydıncık. Based on these findings, it was concluded that farm settlements must have existed in the region during the Roman Empire and Late Antiquity (Kökmen Seyirci, 2023, ss. 3245-3249 Fig. 50-60). The Lycian Region was also one of the regions with high potential for olive oil and wine production in ancient times. Research has revealed archaeological evidence covering all stages of production (Bulut, 2018; Özdemir vd., 2024, ss. 81-94; Uygun vd., 2015, ss. 496-514; Uygun & Özdemir, 2019, s. 332). Evidence that this production technology was used as far back as the Ottoman period can be traced to the linseed oil workshops (Bezirhane) in the Cappadocia region(Maraşlı, 2018, s. 169 Fig.16). A small number of examples of press weights found within the borders of Çorum are included in the catalog of stone artifacts from the city of Euchatia. All of these artifacts have been dated to the Byzantine period (Keskin, 2015, ss. 93-106 fig. 121-148).

In order to identify the press weights (litus) that form the subject of this study, provincial and district centers, towns, and villages were visited. Almost all of the litus were removed from their original work areas and transported to residential areas. They have been used as building materials in the fountains of settlements, in the construction of mosques, or in the foundations of houses, as well as being repurposed in village squares as seating areas or hollowed out to serve as mortar stones (soku). There are also a few examples found in situ in the areas where they were used in ancient times.

One such workshop area was identified approximately 1.5 km east of Yeşilyayla Village, located within the boundaries of the Central District of Çorum. In this workshop area, which had been damaged by illegal excavations, eight litus and the walls of the workshops where they were used were identified (Image 1).

Image 1. Yeşilyayla Village, Central District of Çorum, Workshop Area

The second workshop area was identified at a point within the boundaries of the Şapinuva Archaeological Site, approximately 400 meters west of Ortaköy district (Image 2). In this area, there are 6 Lever and screw press litus, 3 Lever and weights press litus, a total of 9 press mechanisms, as well as building remains. The third work area is located within the boundaries of Berk Village, affiliated with Dodurga

Image 2. Ortaköy Şapinuva Workshop Area

District, in a place called "Kurban Alanı" (Sacrifice Area). In this area, which yielded finds from the Early Bronze Age to the Roman Period, a single press weight stone, uncovered as a result of illegal excavation, remains in its original location (Image 3). In interviews with the villagers, it was stated that there were many similar examples in this area, but some had been moved, while others had been covered again by agricultural activities.

Image 3. Berkköy-Kurban Alanı, Workshop Area

The fourth workshop area was identified approximately 1 km southwest of Gülderesi Village, affiliated with Alaca district, in a settlement area near a stream bed. In addition to the litus uncovered as a result of illegal excavations, pottery fragments from the Late Roman Period can also be seen (Image 4).

Image 4. Alaca Gülderesi, Workshop Area and Remains

The last example found in context was identified in Koyunağılı Village, affiliated with Mecitözü district. During garden leveling work carried out by villagers, a litus block was found within a Roman Period structure that had been exposed and remained in the section, which, based on the data in the section, was understood to have been destroyed by fire (Image 5).

Image 5. Mecitözü Koyunağılı Village, Workshop Remains

Field research revealed that local limestone was generally used in the construction of the identified litus blocks. Basalt-like stones were also used, albeit to a lesser extent. In addition to litus blocks that were largely shaped for the direct function of press weights, there are also examples created by adapting column bases or building blocks.

During the project period, a total of 215 pieces belonging to ancient press mechanisms were identified at 71 points (Table 5). These artifacts consist of Lever and screw press weight, Lever and weights press, press bed, accumulation trough, and roller press stone (Graph 1). Screw weight litus formed the most numerous group with 188 pieces, while suspension litus were observed to be much less common.

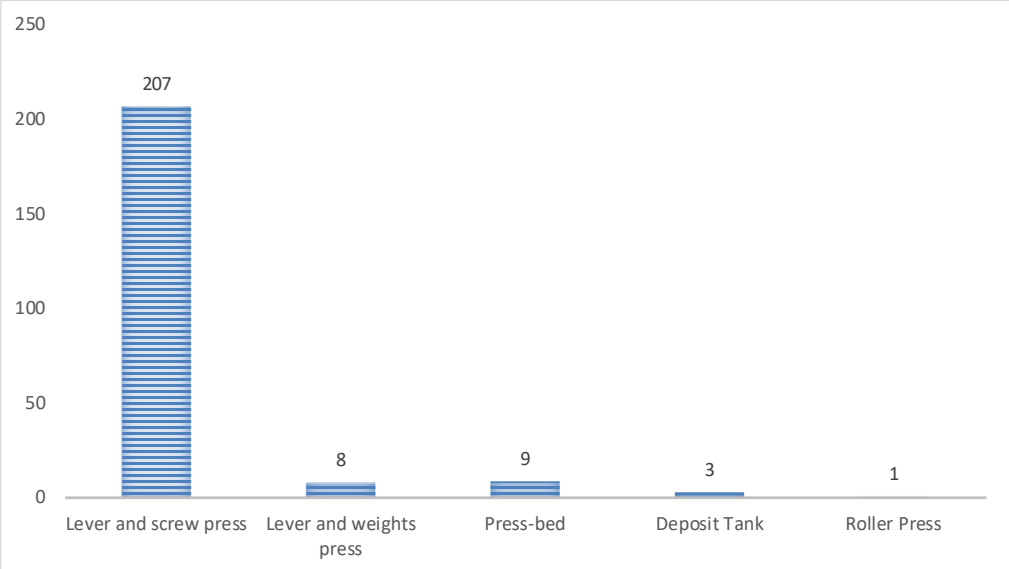
Table 5. Distribution Table of Find Areas and Artifact Types

No	Find location	Lever and screw press	Lever and weights press	Press-bed	Deposit Tank	Roller Press
			ÇORUM			
1.	Çorum museum	11	-	-	-	-
2.	Abdalata	6	-	-	-	-
3.	Ahmetoğlan	1	-	-	-	-
4.	Altınbaş	4	-	-	-	-
5.	Babaoğlu	1	-	-	-	-
6.	Boğabağı	3	-	-	-	-
7.	Bozbuğa	1	-	-	-	-
8.	Cerit	1	-	-	-	-
9.	Çanakçı	1	-	-	-	-
10.	Çatak	-	-	1	-	1
11.	Deliler	2	-	-	-	-
12.	Hamamlıçay	1	-	2	-	-
13.	Hımıroğlu	1	-	-	-	-
14.	Karapürçek	1	-	-	-	-
15.	Kılıçören	2	-	1	-	-
16.	Kınık	4	-	-	-	-
17.	Velipaşa Konağı	4	-	-	-	-
18.	Sarışeyh	2	-	-	-	-
19.	Şahinkaya	1	-	-	-	-
20.	Şekerbey	1	-	-	-	-

21.	Tarhan	1	-	-	-	-
22.	Tatar	1	-	-	-	-
23.	Teslim	1	-	-	-	-
24.	Yeşilyayla	7	-	1	-	-
25.	Merkez	1	-	-	-	-
26.	Hımıroğlu	2	-	-	-	-
	ALACA					
27.	Alacahöyük	2	-	-	-	-
28.	Çalköy	-	-	1	-	-
29.	Değirmenönü	1	-	-	-	-
30.	Eskiyapar	3	-	-	-	-
31.	Gülderesi	1	-	-	-	-
32.	Küçükdona	1	-	-	-	-
33.	Külah	2	4	-	-	-
34.	Miyanesultan	2	-	-	-	-
35.	Yüksekyayla	3	-	-	-	-
	BOĞAZKALE					
36.	Başkent Demiralan Hotel	1	-	-	-	-
37.	Police Station Garden	2	-	-	-	-
38.	Boğazkale museum	1	-	-	-	-
39.	Evci	8	-	-	-	-
40.	Kale Otel	2	-	-	-	-
41.	District Governor's Office Front	1	-	-	-	-
42.	Boğazkale Center	4	-	-	-	-
43.	Yekbas	7	-	-	-	-
	LAÇİN					
44.	Laçin Center	3	-	-	-	-
45.	Narlı	4	-	-	-	-
	MECİTÖZÜ					
46.	Alancık	4	-	-	1	-
47.	Bayındır	2	-	-	-	-
48.	Beyözü	2	-	-	-	-
49.	Çayköy	2	-	-	1	-
50.	Çitli	4	-	1	-	-
51.	Elvançelebi	4	-	-	-	-
52.	Emirbağı	1	-	-	-	-
53.	Geykoca	12	1	-	-	-
54.	Kargı	5	-	-	-	-
55.	Koyunağılı	3	-	-	-	-
56.	Kozören	1	-	-	-	-
57.	Köprübaşı	1	-	-	-	-

58.	Halk Eğitim	2	-	-	-	-
59.	Terken	1	-	-	-	-
	ORTAKÖY					
60.	Aşdavul	15	1	-	-	-
61.	Police Station Garden	1	-	-	-	-
62.	Ortaköy Merkez	9	-	2	-	-
63.	Ortaköy Gölet	7	2	-	-	-
64.	Şapinuva	1	-	-	-	-
	OSMANCIK					
65.	Mosque Garden	1	-	-	-	-
66.	Çarşı	1	-	-	-	-
	DODURGA					
67.	Municipal Garden	1			1	
68.	Berk Köy	1				
	İSKİLİP					
69.	School Garden	1	-	-	-	-
70.	Şehirkuruçay	1	-	-	-	-
	SUNGURLU					
71.	Demirşeyh	1	-	-	-	-

Graph 1. Numerical Distribution of Press Mechanisms



Although Anderson's 7 types were used as a reference for the typological classification of the identified litus, 16 main types and 10 sub-types of these variations were identified in the Çorum region.

3.1. Litus Typology Definitions

Type 1: It is a rectangular block. There is a round screw hole on top of the block and dovetail-shaped wooden fixing sockets on both sides (Figure 2).

Type 1b: It is a rectangular block. There is a round screw hole on top of the block, and dovetail-shaped wooden fixing sockets on all four sides.

Type 1c: It is a rectangular block. There is no round screw hole on top of the block. Only dovetail-shaped wooden fixing slots are located on the two side faces.

Type 1d: It is a rectangular block. There is a round screw hole on top of the block, and wooden fixing slots extending to the bottom of the block on two sides.

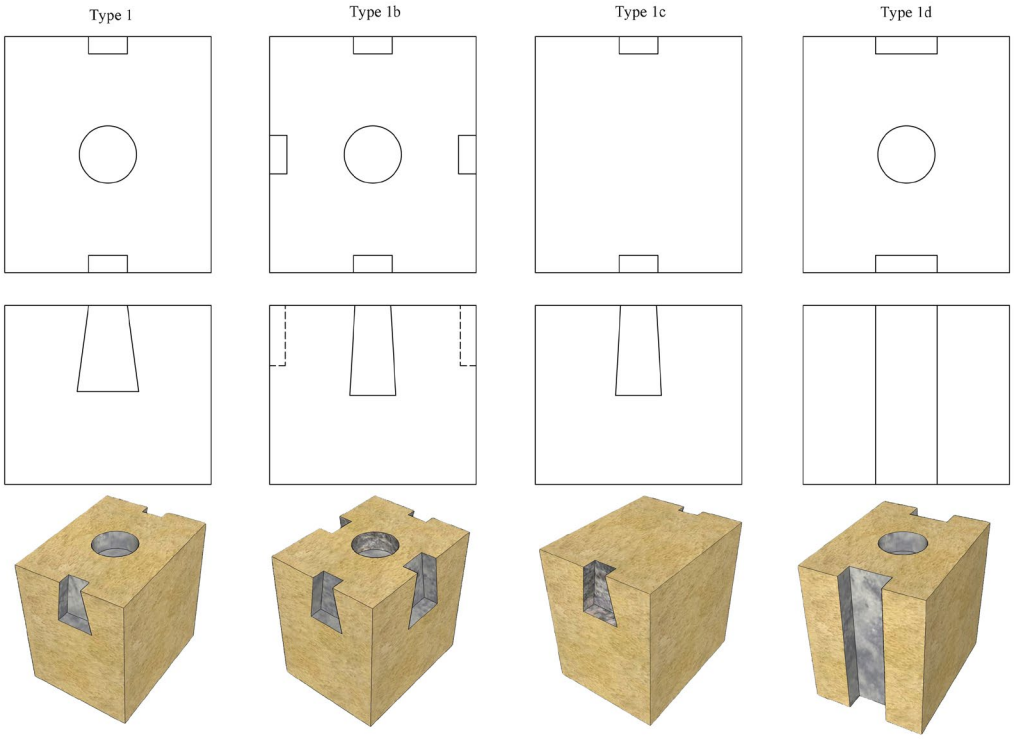


Figure 2. Type 1 and its Variations Drawings and Models

Type 2: It is a rectangular block. There is a round screw hole on top of the block, and dovetail-shaped wooden fixing slots on both sides. In addition, a narrow fixing channel has been added from the slot hole at the top to the wooden fixing slots (Figure 3).

Type 2b: It is a rectangular block. There is a round screw hole on top of the block, and wooden fastening slots extending down to the bottom of the block on both sides. A narrow fastening channel extending from the slot hole to the wooden fastening slots has also been added.

Type 2c: It is a rectangular block. There is a round screw hole on top of the block, and dovetail-shaped wooden fixing slots on both sides. In addition, a wide wooden fixing slot has been added on top and a narrow fixing channel has been added from the slot hole towards the wooden fixing slots.

Type 2d: It is a rectangular block. There is a round screw hole on top of the block, and dovetail-shaped wooden fixing slots on both sides. In addition, narrow fixing channels extending from the slot hole to the four corners have been added on top.

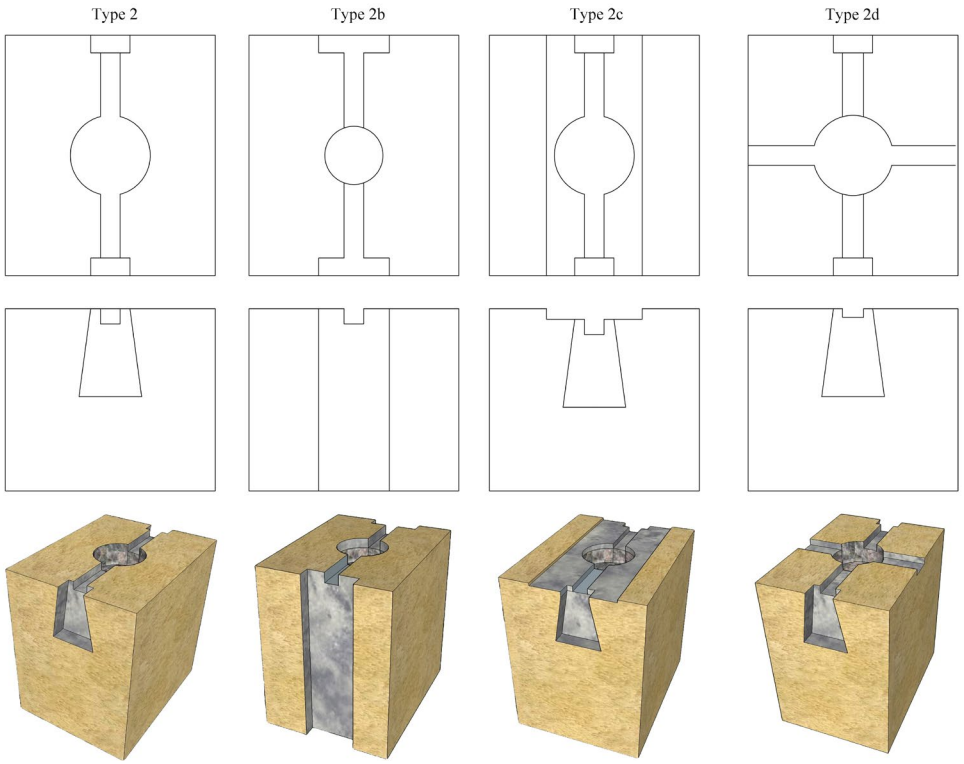


Figure 3. Type 2 and its Variations Drawings and Models

Type 3: It is a rectangular block. There is a round screw hole on top of the block, and dovetail-shaped wooden fastening slots on the two side faces. Furthermore, a narrow fixing channel extending from the hole to the wooden fixing slots has been added. At the junction of this channel with the side fixing slots, there is a profile widened towards the sides (Figure 4).

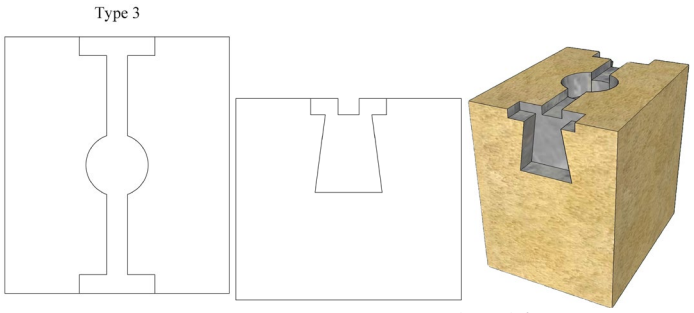


Figure 4. Type 3 Drawing and Model

Type 4: It is a rectangular block. There is a round screw hole on top of the block and a narrow channel opened to secure this screw. There are no wooden fixing sockets on the side faces (Figure 5).

Type 4b: It is a rectangular block. There is a round screw hole on top of the block and a wide channel opened to secure this screw. There are no wood fastening slots on the side faces.

Type 4c: It is a rectangular block. There is a round screw hole on top of the block and a wide channel opened to secure this screw. Additionally, short wooden slots intersecting the top channel horizontally have been opened. There are no wood fastening slots on the side faces.

Type 4d: It is a rectangular block. There is a round screw hole on top of the block and a wide channel opened to secure this screw. There are dovetail-shaped wooden fixing slots on both side faces.

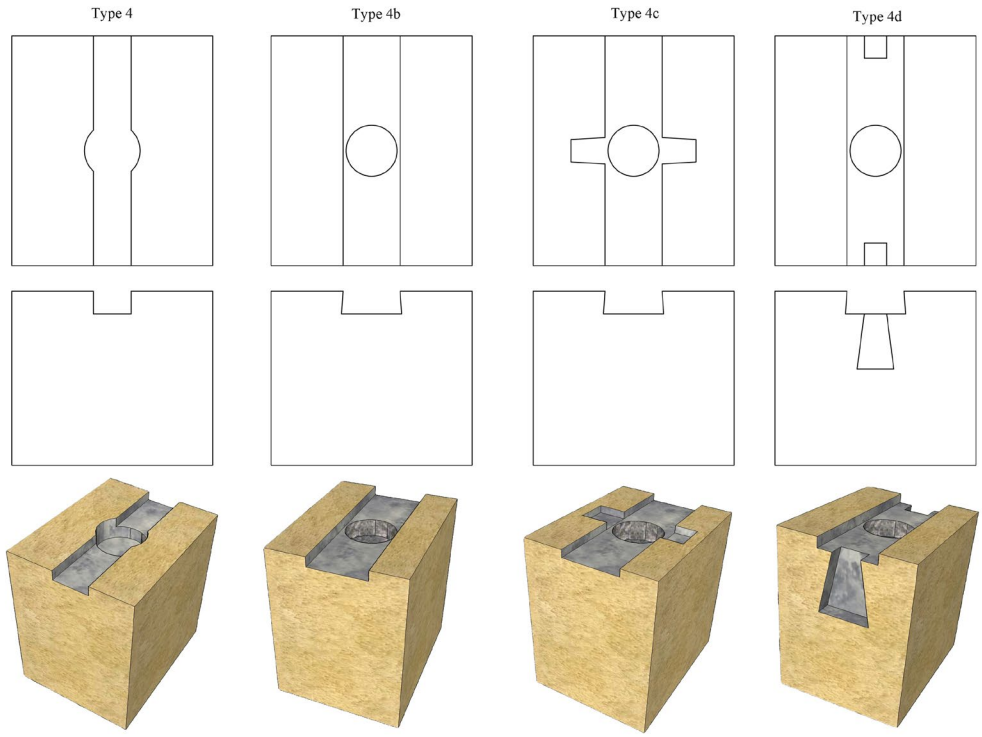


Figure 5. Type 4 and its Variations Drawings and Models

Type 5: It is a rectangular block. There is a round screw hole on top of the block and a narrow, short wooden slot opened to secure this screw (Figure 6).

Type 6: It is a rectangular block. There is a round screw hole on top of the block and a narrow rectangular wooden socket cut out to secure this screw. There are two small dowel sockets on each corner on top of the block (Figure 6).

Type 7: It is a rectangular block. Only a round screw hole is cut on the top of the block. There is one small dowel hole at each corner on the top of the block (Figure 6).

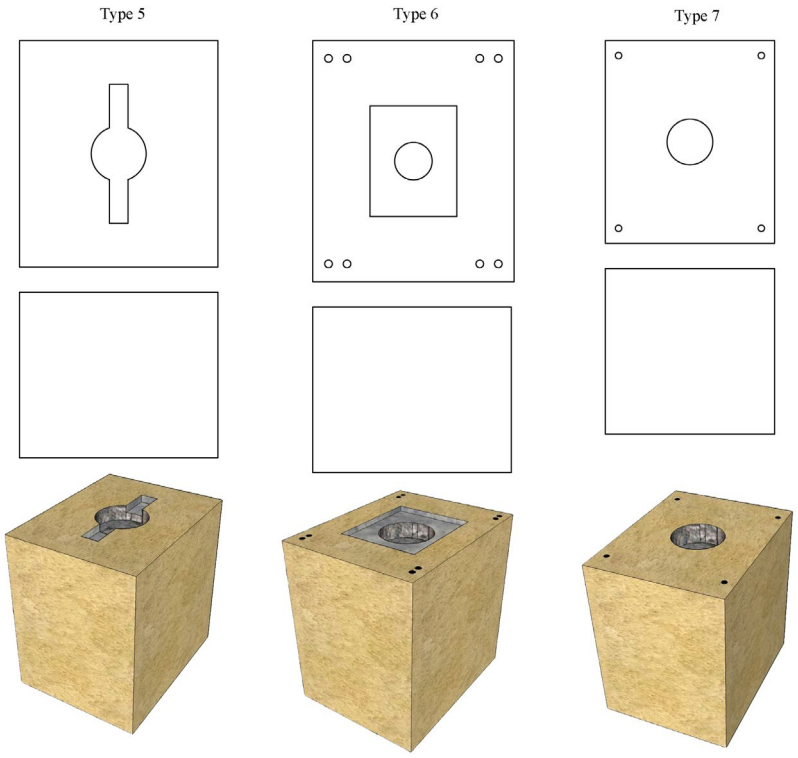


Figure 6. Type 5-7 Drawings and Models

Type 8: It is a 12-cornered, pyramidal block. There is a round screw hole on top of the block and dovetail-shaped wooden fixing holes on both sides (Figure 7).

Type 9: It is a 6-sided, pyramid-shaped block. There is a round screw hole on top of the block and dovetail-shaped wooden fastening sockets on both sides (Figure 7).

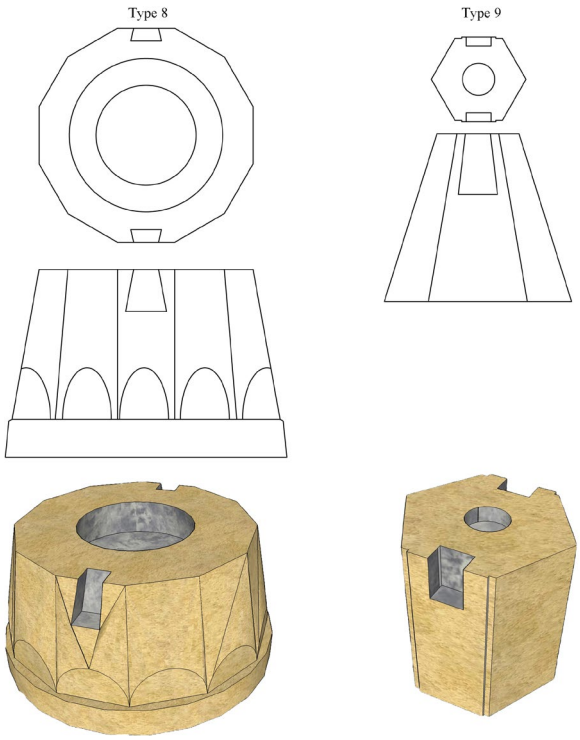


Figure 7. Type 8-9 Drawings and Models

Type 10: It is an octagonal block with a pyramidal shape. There is a round screw hole on top of the block, and dovetail-shaped wooden fixing slots on both sides (Figure 8).

Type 11: It is an octagonal block with a pyramidal shape. There is a round screw hole on top of the block, and dovetail-shaped wooden fixing slots on both sides. In addition, a wide fixing channel has been

added from the hole on top to the wooden fixing slots (Figure 8).

Type 12: It is an octagonal block with a pyramidal shape. The block has a round screw hole on top and a narrow, short wooden socket cut to secure this screw (Figure 8).

Type 13: It is an octagonal block with a pyramidal shape. The block has a round screw hole on top and a wide fastening channel extending from the top hole to the sides (Figure 8).

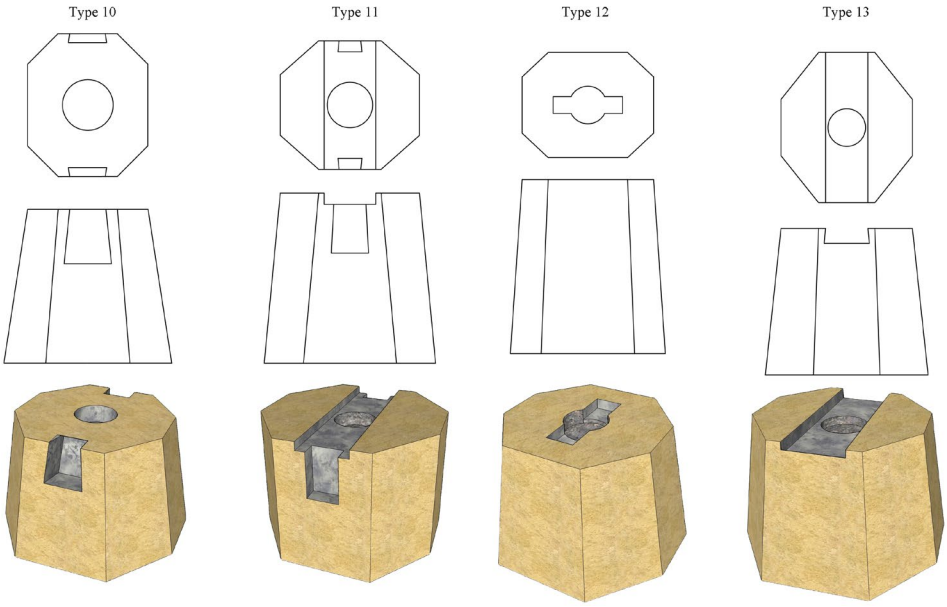


Figure 8. Type 10-13 Drawings and Models

Type 14: A round, cylindrical block. On top of the block is a round, narrow screw hole and on both sides are narrow wooden fixing sockets (Figure 9).

Type 14b: A round, cylindrical block. On top of the block is a narrow round screw hole, and on both sides are dovetail-shaped wooden fixing sockets that widen towards the bottom.

Type 15: A round, cylindrical block. There is a round screw hole on top of the block and a short rectangular wooden socket cut to secure this screw (Figure 9).

Type 16: A round, cylindrical block. On top of the block is a round screw hole and a wide wooden socket extending along the block to secure this screw (Figure 9).

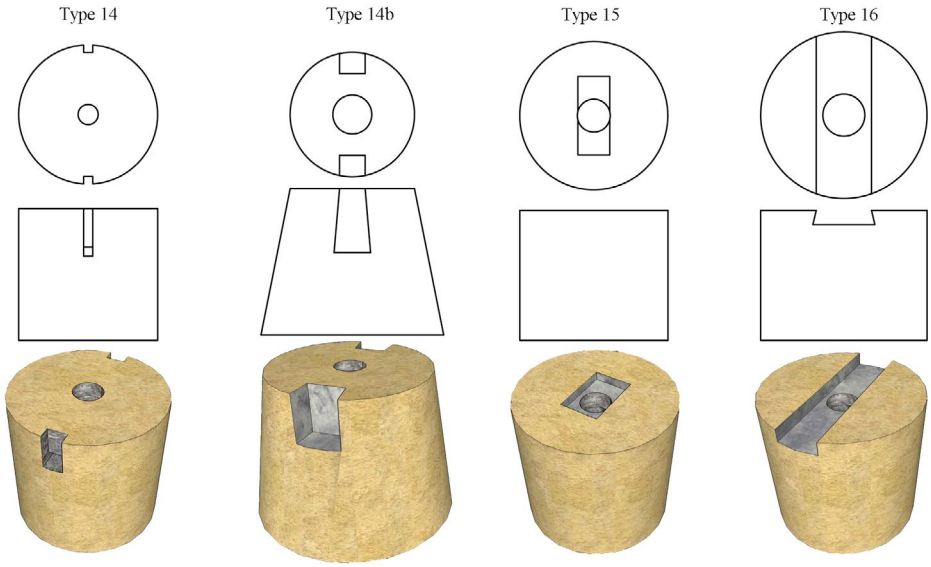
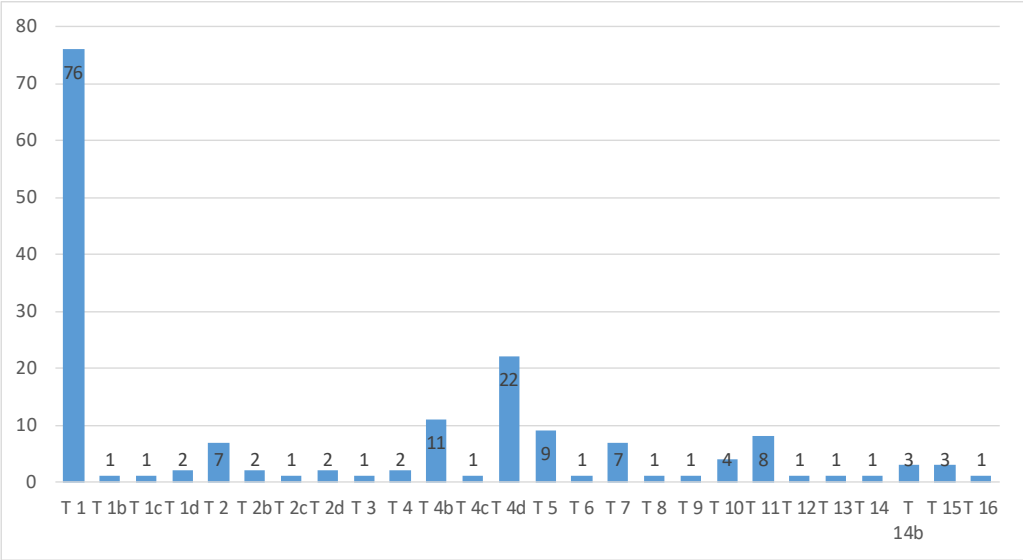


Figure 9. Type 14-16 Drawings and Models

Within this screw litus typology, Type 1 forms the most numerous group with 76 examples. This is followed by Type 4d with 22 examples, Type 4b with 11 examples, Type 5 with 9 examples, Type 11 with 8 examples, and Types 2 and 7 with 7 examples each (Graph 2).



Graph 2. Density Graph of Lever and Screw Press

In addition to Lever and screw press weight, another mechanism component identified in workshop areas and village centers is Lever and weights press (Figure 10). Two main types of this form have been identified.

Lever and weights press Type 1: This type has a rope hole in the middle of the block for hanging.

Lever and weights press Type 2: This litus has a deep channel created for hanging with a rope in the mushroom-shaped upper section of the block.

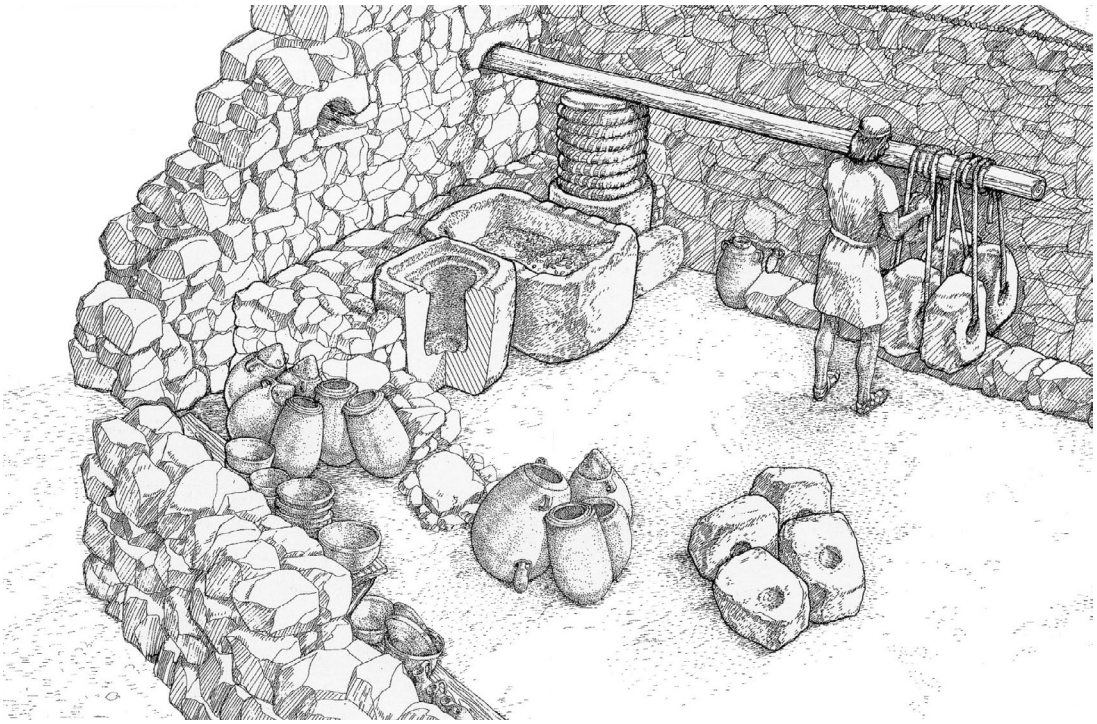


Figure 10. Reconstruction of Lever and Weights Press Usage (Gitin 1989, Fig. 26)

Press Bed: A block with a pressing area in the center and circular or rectangular drainage channels on the edges (Figure 11).

Figure 11. Examples of Press-bed

4. Viticulture Activities In The Çorum Region Are Documented In The Ottoman Archives

Referencing tax records in the "tahrir" and "temettuat"[2] registers from the 16th to the 19th century, Solak evaluates fruit and vegetable production in Anatolia during the Ottoman Empire. He states that the amount of tithe paid by Çorum between 1515 and 1535 was 1,414 units, while the tax between 1560 and 1579 was 9,248 units (Solak, 2008, ss. 221-225 Table I-II). The same study indicates that in the 1840 records, the tithe amount collected from viticulture in Çorum was 6092.5 units, and that the total revenue should therefore have been 60,925. It is emphasized that in 1845, the tithe amount increased to 13,504.5 units, and the total revenue for this period should have been 135,045. These data indicate that viticulture activities in Çorum continued to increase during the period from the 16th to the 19th century.

It is also known that in some years, grape tax (öşri-bağ) was replaced by grape juice tax in the Ottoman tax system. In the 1516-1518 Çorum cadastral records, instead of entries such as *"öşr-i bağ"* or *"harac-ı bağat"*, there are entries juice. Records from 1560-1576 indicate that the grape juice tax collected from Çorum amounted to 4090 units. Records from 1576 indicate that grape wines were transported from the center of Çorum and that an additional tax was levied on them(Erdoğru, 2014, s. 16). It is also emphasized that no tax was collected from vineyards belonging to certain tekkes, such as the Koyun Baba tekke, during this period (Erdoğru, 2014, s. 22). In this case, it can be assumed that production was much higher than what is recorded in official records.

5. Viticulture Activities in Çorum with Current Data

Viticulture and grape cultivation continue to some extent in Çorum province and its districts today. TUIK data covering the years 2004-2023 provides the production capacity of table grapes and wine grapes in Çorum and cultivation statistics per hectare. According to these data, in 2004, a total of 8,919 tons of table grapes were grown on 59,420 decares of land in Çorum, while in 2023, this figure fell to 6,705 tons on 22,142 decares of land. In this context, while there has been an increase in vineyard areas in the districts of Boğazkale and İskilip, there has been a significant decline in all other districts. This decline observed over a 20-year period has become even more pronounced in wine grape production. While 3,603 tons of wine grapes were grown on 31,510 decares of land in 2004, by 2023, the production area had fallen to 8,244 decares and the yield to 2,932 tons. In this area, a decline is seen in all districts except Boğazkale. These data show that table grape cultivation is widespread throughout Çorum, but wine grape cultivation is very limited in the districts of Bayat, Dodurga, and Mecitözü, and non-existent in districts such as Laçin, Ortaköy, Osmancık, and Oğuzlar (Table 1-4).

[2] Official ledgers recording property, livestock, land, and the assets of living citizens on a household basis.

Table 1. Area of Collective Orchards and 01.21.11.01.01. (Table Grapes, Seeded) - Decares (TUIK)

Year	Alaca	Bayat	Boğazkale	Dodurga	Kargı	Laçin	Mecitözü	Merkez	Ortaköy	Osmancık	Oğuzlar	Sungurlu	Uğurludağ	İskilip	Total
2004	5000	5000	3500	1000	650	500	2100	20000	2410	6000	320	9500	2540	900	59420
2005	5000	5000	3200	1000	650	500	2100	22500	2410	6000	320	7000	2540	1000	59220
2006	4800	4800	3200	1000	600	500	2050	24000	2410	6000	300	7000	2540	1000	60200
2007	4800	4800	3200	1000	600	500	2050	25000	1540	6000	300	7000	2500	900	60190
2008	4800	4800	3200	1000	600	500	2300	25500	1700	6000	150	7000	2600	900	61050
2009	4800	4800	3200	1000	600	500	2400	25000	1760	6200	150	7000	2600	1200	61210
2010	4800	4800	3200	1000	600	500	2400	24000	1700	6000	150	7000	2600	1200	59950
2011	4800	4800	3200	1000	400	500	2400	24000	1700	6000	150	7000	2600	1200	59750
2012	4800	4800	3200	1000	300	400	2400	18000	1700	3600	200	7000	2600	1200	51200
2013	4800	4989	3500	150	300	400	2400	15000	1700	3600	200	7000	2600	1200	47839
2014	4800	4900	3500	150	300	400	2980	12000	1700	3600	200	6200	2600	1200	44530
2015	4800	4900	3500	228	300	275	2980	8376	1710	3600	200	5120	2600	1100	39689
2016	1500	4900	900	150	300	350	2600	4100	172	3600	200	5000	2600	1100	27472
2017	1500	4780	4900	150	300	350	2600	4100	481	3500	200	4235	2000	1000	30096
2018	1536	1845	5078	155	311	363	2694	4155	1534	3627	207	4663	3109	1036	30313
2019	1482	400	4800	155	200	360	2644	4010	1041	3600	207	4500	3028	1070	27497
2020	1492	400	4800	155	160	200	350	4010	1050	3600	207	4570	3028	1070	25092
2021	1492	400	4800	210	150	200	355	3010	1050	3600	207	4500	3028	1300	24302
2022	1480	350	5000	600	165	200	320	3010	1050	3600	207	4490	918	1300	22690
2023	1300	255	5000	600	165	200	312	3010	1100	3600	200	4400	900	1100	22142

Table 2. Production Quantity and 01.21.11.01.01. (Table Grapes, Seeded) - Tons

Year	Alaca	Bayat	Boğazkale	Dodurga	Kargı	Laçin	Mecitözü	Merkez	Ortaköy	Osmancık	Oğuzlar	Sungurlu	Uğurludağ	İskilip	Total
2004	450	1100	700	163	195	123	630	2000	410	600	90	1520	762	176	8919
2005	500	1100	800	170	195	123	630	3375	410	600	90	1120	762	176	10051
2006	96	192	64	70	30	20	98	480	96	480	15	119	76	88	1924
2007	214	342	256	89	133	89	547	3337	200	3204	53	872	222	120	9678
2008	384	384	288	120	150	125	690	4080	306	3600	30	1050	1125	135	12467
2009	432	432	320	130	150	125	720	4250	317	3720	30	1190	1040	192	13048
2010	480	720	320	150	150	125	720	4700	306	3500	30	1190	1040	192	13623
2011	480	720	320	180	80	125	720	3600	306	3600	30	1190	1040	192	12583
2012	480	720	330	200	80	80	720	10800	306	4800	30	1190	1040	192	20968
2013	464	723	387	193	232	121	696	10441	296	2784	29	1208	1005	348	18927
2014	480	735	300	188	240	121	696	8650	300	3960	29	930	1000	360	17989
2015	355	181	222	337	178	152	33	2789	229	2930	21	606	888	163	9084
2016	402	110	201	114	215	313	1046	1283	67	2897	19	1788	895	146	9496
2017	416	108	1135	61	221	252	1030	1308	193	2881	31	1743	710	139	10228
2018	539	381	1211	64	236	90	1112	1329	633	3369	33	1925	1139	160	12221
2019	437	69	979	56	45	47	918	1114	361	2187	29	1367	989	232	8830
2020	4327	80	1128	56	36	40	763	1404	1029	3420	29	1828	999	268	15407
2021	1090	90	1012	68	30	36	460	1012	942	2905	26	1614	882	303	10470
2022	1233	86	1127	213	129	39	259	1770	923	3282	28	1760	292	331	11472
2023	1105	64	1125	213	50	24	100	1204	495	90	50	1760	293	132	6705

Table 3. Area of Orchards and 01.21.12.01.01. (Wine Grapes) - Decares

Year	Alaca	Bayat	Boğazkale	Dodurga	Kargı	Laçin	Mecitözü	Merkez	Ortaköy	Osmancık	Oğuzlar	Sungurlu	Uğurludağ	İskilip	Total
2004	1000		500	610	150			25000				1000	850	2400	31510
2005	1000		800	610	150			22500				900	850	2400	29210
2006	1000		800	610	150			21000				900	800	2390	27650
2007	1000		800	610	150			20000				900	800	2400	26660
2008	1000		800	610	150			20000				900	920	2400	26780
2009	1000		800	600	150			19000				900	920	2100	25470
2010	1000		800		150			15000				900	900	2100	20850
2011	1000		800		100			15000				900	900	2100	20800
2012	1000		800		100			15000				900	900	2100	20800
2013	1000		8000		100			14000				900	900	1800	26700
2014	1000		8000		100			14000				700	900	1800	26500
2015	1000		8000		100			8500				520	900	1300	20320
2016	1000		1900		100		173	3534				500	900	1300	9407
2017	981		1927		101		175	3544				416	913	1319	9376
2018	941		1900		100		175	3403				400	900	1150	8969
2019	910		1900				225	3403				400	763	1150	8751
2020	890		1900				225	3403				365	763	1150	8696
2021	890	325	1900				228	403				360	763	950	5819
2022	700	300	1900				220	3403				350	723	950	8546
2023	600	215	1900		1		225	3403				340	710	850	8244

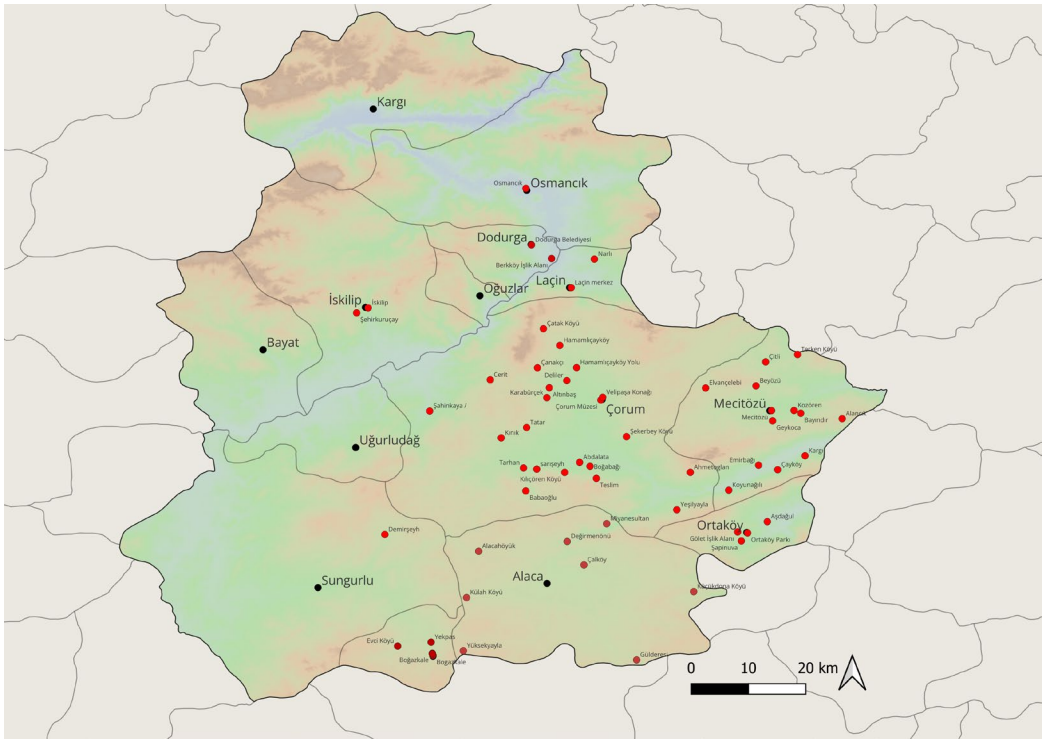
Table 4. Production Quantity and 01.21.12.01.01. (Wine Grapes) – Tons

Year	Alaca	Bayat	Boğazkale	Dodurga	Kargı	Laçin	Mecitözü	Merkez	Ortaköy	Osmancık	Oğuzlar	Sungurlu	Uğurludağ	İskilip	Total
2004	50		100	100	45			2500				200	255	353	3603
2005	60		200	104	45			3375				180	255	353	4572
2006	10		160	42	8			420				18	26	188	872
2007	50		72	61	38			3000				126	80	360	3787
2008	67		80	81	42			3552				150	400	400	4772
2009	70		80	78	38			3230				153	368	336	4353
2010	120		120		45			3750				180	360	378	4953
2011	120		120		20			3000				180	360	378	4178
2012	120		125		20			7500				180	360	378	8683
2013	115		154		77			7209				178	346	433	8512
2014	120		104		80			8940				1155	340	450	11189
2015	120		104		80			4038				244	350	195	5131
2016	350		475		80		117	2297				310	522	325	4476
2017	397		558		94		137	2666				204	613	382	5051
2018	529		760		128		188	3049				232	831	476	6193
2019	393		472				155	2521				178	880	511	5110
2020	3115		447				203	2382				157	878	483	7665
2021	718	58	402				200	253				139	274	358	2402
2022	549	59	439				157	1835				148	283	391	3861
2023	480	48	439		0		72	1361				146	284	102	2932

6. Conclusion

The 215 press weights (litus) documented as a result of archaeological research conducted within the borders of Çorum province provide comprehensive data on the region's agricultural production technology and industrial capacity in ancient times. Although the number of identified workshop areas is small, they provide clues that help us understand the general character of wine production workshops in the region. All documented workshops are located near ancient settlements and, most likely, inside architectural structures. To date, no press beds carved into the bedrock have been identified. This indicates that, unlike the open-air workshops commonly known from Cilicia or Lycia, closed-form workshops are more prevalent in the Çorum region. Furthermore, considering the numerical quantity of litus, it should be noted that wine production far exceeded individual consumption needs and was likely also circulated in the region as a commercial product.

All of these artifacts were photographed, their locations marked on a map, and measurements and drawings were made and documented for those that were accessible. The distribution of the artifacts within the borders of Çorum can be seen in its entirety with the help of the identified points (Map 2).



Map 2. Distribution Map of the Litus

The project work started from the northern districts of Kargı, Osmancık, Dodurga, and Laçin. It then continued with the districts of Çorum Center, Mecitözü, Ortaköy, Alaca, and Boğazkale. The numerical data of the areas yielding finds show that the press weight stones are concentrated in the southern districts of Çorum. Considering the geographical and climatic differences between the north and south of Çorum, it is reasonable to assume that viticulture and wine production as a surplus product were much more intensive in the southern regions during the Ancient Period.

One of the issues the research focuses on is determining the chronology of the use of press weight stones. Since most of the artifacts were taken from their original locations and used as recycled material in village structures, dating them is quite difficult. For this reason, different criteria providing data about the period they belong to have been taken into consideration. Observations made in workshops such as Yeşiyayla and Berkköy have identified Roman period pottery. Therefore, the Roman Empire period can be suggested for the earliest examples from these workshops. With the spread of Christianity in the Late Roman period, the production of wine needed for use in church ceremonies began to increase. This situation must have continued throughout the Byzantine Period. This situation is also supported by the depictions on the litus blocks. The cross, a symbol of Christianity, is striking on most of the documented litus blocks. Some of these crosses are depicted together with floral ornaments. Considering that these crosses, seen as symbols of death and rebirth in the Christian faith, began to spread after the 10th century AD, it can be concluded that an intensive viticulture and wine production industry developed in the Çorum region during the Middle Byzantine Period.

Epigraphic findings in Hittite texts indicate that olive production was not carried out locally, whereas grape cultivation and wine production were widespread activities. Furthermore, the upward trend in tax revenues related to viticulture in Ottoman-period cadastral and tax registers clearly demonstrates the historical continuity of this agricultural practice in the region. This situation shows that Çorum was an important agricultural production center in Anatolia during ancient and historical periods, particularly in terms of viticulture.

When the distribution of identified press weights (litus) is compared with current data from the last twenty years, it is understood that viticulture activities have declined significantly in some districts. Although Mecitözü, Ortaköy, and Boğazkale are the districts where litus are most concentrated, viticulture is quite limited there today.

Typological analyses have identified a total of 26 different litus forms in the region, comprising 16 main types and 10 sub-types. This morphological diversity not only indicates a high production capacity but also proves that technological applications were adapted to local needs and conditions. On the other hand, the workshop areas preserved in situ provide concrete evidence about the spatial organization and functional integrity of production processes in ancient times.

Ultimately, the press weights finds from Çorum shed light not only on the nature of agricultural production in antiquity but also point to the deep historical roots and uninterrupted continuity of the region's viticulture tradition. In this context, the archaeological data in question make a significant contribution to understanding the cultural, economic, and technological dimensions of viticulture and wine production in Anatolia.

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