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# CERAMIC PRODUCTION FROM NEOLITHIC DOĞANHİSAR POTTERY CULTURE: INTANGIBLE HERITAGE OF TECHNOLOGY TRANSFER FROM PAST TO PRESENT

**Serap Ünal**

*Süleyman Demirel University, Faculty of Fine Arts, Ceramic and Glass Department Head, Isparta, TURKEY (serapunal@sdu.edu.tr; serapunal2011@gmail.com)*

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## ABSTRACT

Ceramic production from the Neolithic Period to the present is also an approximately 9000-year-old tradition of Anatolia. As can be understood from the archaeological findings, the wheel pottery, which we can count as the first industrial production, has reached the present day, practically without distorting its style. With this aspect, it is an important cultural value. According to the studies, the pottery centers clustered in the "Göller Bölgesi"(Lakes Region), which stands out in terms of archaeological wealth, can be seen more in rural settlements without breaking their traditions, as in all of Anatolia.

Doğanhisar, a sub-province of Konya city, is a typical pottery center in the "Göller Bölgesi" where traditional pottery production can be maintained despite the difficulties. Ceramic production, which can be sustained without spoiling its originality, is an important cultural heritage, with the transfer of knowledge in many disciplines from past to present. Doganhisar pottery has also been studied by taking into consideration the soil structure, rural dynamics and its contributions to the urban economy, especially its traditional and cultural characteristics.

However, this cultural heritage has almost entered the process of extinction in Doğanhisar as in many parts of Anatolia. Within this period, Doğanhisar pottery tries to maintain its existence as a rural tradition and production style.

In this article, it is aimed to ensure the sustainability of Doganhisar pottery by evaluated within the scope of the "Intangible Cultural Heritage" (ICH ) and to become a remarkable center as well as the archaeological values of the Lakes Region.

**KEYWORDS**: Primitive Pottery, Handicrafts, Anatolia, Turkey, Doğanhisar, Cultural Heritage

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## 1. INTRODUCTION

The fact that man invented tools and various equipment with his existence undoubtedly originated from the need to survive. Humanity first started to get tools by carving stones. Later on, by developing this skill, they discovered agriculture, pots and pans, and built the houses to be sheltered.

The production of ceramic or, in general terms, pottery has been appearing for thousands of years as a production subject with its archaeological, historical, ethnographic qualities as well as social, economic and artistic dimensions. The pottery, which was previously produced solely for needs, was later produced as a tool for expressing emotions, thoughts and social values besides primary needs. Pottery for food and food storage, household items such as utensils, jars, tandoori, kiln etc. tablets for communication and documenting agreements, building materials such as bricks, tiles, water pipes, religious and symbolic idols (cult figures), ornaments and jewelry, baby potties, terracotta items and equipment such as dead pots were very important in human life from birth to death.

The criteria of successive periods were determined by the typology of pottery and small objects, and the epochs were named temporarily. After that, archaeological surface researches were carried out regularly in settlements that were not excavated, and the history of these places was localized by surface findings (Lloyd, 1998:17). At the beginning of the new stone (Neolithic) era, daily vessels were made of wood and stone. The containers made of clay in Anatolia are encountered in Konya, Burdur and Antalya regions at the latest in 7.000 BC. The first examples are monochrome, coarse and simple in shape. Afterwards, in the middle of the 6th BC, the ones produced, especially in Çatalhöyük and Hacılar, were very successful and they were the first art creations of humanity on ceramics (Akurgal, 1998:8).

Ceramic production, which is a very important document of Anatolian cultural geography, reveals itself, especially in the "Göller Bölgesi"[1] (Lakes Region) from the Neolithic Period to the present. One of the reasons why pottery continued uninterruptedly in this region as of its periods was that the most important and intense clay deposits suitable for ceramic production in Anatolia were in this region. Today, as well, Doğanhisar settlement and its surroundings, located in the Lakes Region, are an important industrial ceramic raw material center as well as traditional ceramic production.

The ceramic culture, which is centred within the scope of "Intangible Cultural Heritage" in the Lakes Region, is important in terms of conveying the production and sociological characteristics and life philosophy of many civilizations that have lived in these lands for thousands of years. The fact that terra-cotta is a permanent material makes ceramic production (pottery) important in terms of cultural knowledge transfer from past to present.

The Lakes Region, which has been home to the world's oldest ceramic production centers since the Neolithic Period and continued this production process in many settlements with a primitive form, makes the region an attractive position in terms of ceramics. In this region, Doğanhisar sub-province (Konya) is a typical profile that produces pottery within this scope. Pottery is still produced unbeknown in Doğanhisar, as in many parts of the Lakes Region.

When Doğanhisar pottery is investigated under headings such as soil and clay structure, mud preparation, production techniques, firing, and forms, we come across a scene that supports local production and cultural richness, together with the general structure we encounter in Anatolian rural pottery.

## 2. GEOGRAPHICAL LOCATION AND HISTORY

Spread over the geographical area of the Lakes Basin, Doğanhisar sub-province is 122 km away from its province, Konya and it is adjacent to the town of Ilgın in the east, to the town of Hüyük, a pottery settlement like itself, in the south, and to Akşehir town in the north. While it was previously a village of Akşehir, it became a sub-province of Konya in 1957. Located in the transition corridor of the Central Anatolia and Mediterranean climate zone, rains in Doğanhisar last for 2-3 months, in both spring and autumn totally. Summers are dry and hot, winters are cold and rainy, generally continental climate prevails (Fig. 1).

[1] Göller Bölgesi (Lakes Region); Geographically, is an area that spreads over the lands of Afyonkarahisar, Isparta, Burdur, Antalya, Konya, Denizli provinces. It includes lakes of various sizes such as Beyşehir, Eğirdir, Akşehir, Burdur, Eber, Acıgöl, Suğla, Ilgın, Işık, Salda and Kovada. The pits formed as a result of tectonic and volcanic movements, the boundaries of the Lakes Region, where lakes with different characteristics are located due to the accumulation of salty, bitter and fresh waters, are formed by Beyşehir Lake in the east, Salda Lake and Acıgöl in the west, Eber Lake in the north, Köprülü and Güllük Passages in the south.




*Figure 1. a) Map of Turkey, b) Map of Turkey (Plan close to the region), c) "Göler Bölgesi" (Lakes Region), d) Map of Doğanhisar (https://www.google.com/maps/)*

Located on the foothills of the Sultan Mountains facing north east, Doğanhisar has a surface area of 519.5 km² and an altitude of 1200 m. While the population of Doğanhisar was 22,095 according to 2009 data, but now it is around 38,000 today. The borders of the central municipality are 93 km² and the population of the center is 6.209 people. (Fig. 2) There are 8 municipalities and 8 villages within the district boundaries (MEVKA, 2012:2).

In West Central Anatolia, the metamorphic mass that forms a mountain range of approximately 105 km in lenght and 25 km in width, extending in the north-west- southeast direction between Çay, Sultan Mountains, Akşehir and Doganhisar districts in the north and Yalvac, Şarkikaraağaç and Hüyük districts in the south, is known as the Massif of Sultan Mountains in Turkey geology literature (Aksoy, Bozdağ, 2008:2).



**Figure 2.** General View of Doğanhisar

Since the archaeological excavations and surface surveys of the early periods with prehistoric ceramics have not been done sufficiently yet, we do not have full knowledge of the Neolithic Period specifically. Considering that there are important neolithic centers with pottery in nearby centers (such as Çatalhöyük, Hacılar, Kuruçay) in the same region, it is highly probable that there are neolithic settlements with pottery. The closest Neolithic settlement to Doğanhisar is Çukurent Village, which is 30 km to the district. Archaeological studies in Çukurkent, which started with H. A. Ormerod in 1910, have continued later on, but illuminating results haven't been fully achieved. (Fig. 3


).

*Figure 3. Neolithic Figurines discovered in Çukurkent (Özkan, S., Erdalkıran, M., p.40)*

Drawing attention with its figurines, Çukurkent is a settlement in Hüyük District in the west of Konya and is located close to the intersection of Beyşehir-Isparta and Hüyük-Doğanhisar main roads. Çukurkent has been visited by many local and foreign scientists since the beginning of the 20th century due to its location. As a result of researching the location of the female figurines purchased from the villagers, the slope settlement dated to the late Neolithic period was discovered and Çukurkent has been known for its statuettes in the archeology world. J. Mellaart, who conducted large-scale surface surveys in Konya and the Lakes Region, also visited Çukurkent in 1951-1952 and he compiled a stamp seal, an animal figurine and a sheep's head made of clay, a crested bird's head made of green steatite, as well as an obsidian tool group consisted of knives, chips and arrowheads. According to Mellaart, Çukurkent is a settlement belonging to the Neolithic and Chalcolithic ages. Later, in the light of new data obtained from Hacılar excavations, Çukurkent and Hacılar IX-VI, he has dated the settlement to the late Neolithic Period by establishing similarities in terms of the material of the layers. Thereafter, in the light of new data obtained from Hacılar excavations, he established similarities between Çukurkent and Hacılar (IX-VI) layers in terms of material and dated the settlement to the late Neolithic Period (Özkan, Erdalkıran, 2014:27). This settlement, which is claimed to have a rich area belonging to the Neolithic Period, is covered with agricultural fields today and no work is being done.

The finds in the archaeological studies in the region mostly belong to the Chalcolithic Period and after. Çebişli Höyük II, Karahöyük and Kızılışık are important settlements belonging to the Chalcolithic Period.

Çebişli Höyük II is located in the northwest of Konya city center, 8 km north of Doğanhisar. It is located in the west of "Ali Çayı" (Ali stream), in the valley formed by this stream. It was discovered by Hasan Bahar in 1995. From the information given by this researcher, it is understood that the mound is an oval-shaped hill with a height of 25 m and a dimension of 30 X 75 m. That the mound has been heavily damaged is understood from the presence of a treasure hunter pit reaching a depth about 5 m. According to Bahar's assessment, sherds resembling Late Chalcolithic Era B group pottery of Kuruçay Höyük were found from its surface. Figural similarities are also chosen with the same age of Beycesultan. There are also EBA-IA (Early Bronze Age-Iron Age) sherds. Another chalcolithic area Karahöyük is in the northwest of Konya city center and 4 km north from Doğanhisar. It is at the confluence of "Çebişli Deresi" (Çebişli Brook) and "Ali Çayı" (Ali Stream). It is 20 m. in height with a diameter of 300 x 200. According to H.Bahar's assessment which grounded in the collection conducted by the researcher in 1995, based on their figural similarities, earthenwares that can be dated to the Late Chalcolithic Age 1 phase (EBA-IA) were found. It has been reported that the road passing by the mound caused partial damage. Kızılışık, the third chalcolithic point, is located 2 km north from Doğanhisar and in the northwest of Konya city center. It is a medium-sized mound with a height of 15 m and a diameter of 100 m. It was discovered by H. Bahar in 1995 and according to Bahar's initial assessment, sherds belonging to the Chalcolithic Age, EBA, MBA-LBA, IA and Classical Period were collected from the surface of the mound (Tayproject.org, 2020).

Doğanhisar was founded in 500 BC under the name of Metyos (Meteos). It was captured by the Byzantine Empire in 395 AD and was attacked by the Umayyad and Abbasid armies in 704-708 AD. During the spread of the Seljuks to the west following the Battle of Malazgirt in 1071, Doğanhisar passed under Turkish rule in 1100. The name of the city was put as "Doğankalesi" in reference to the falcon, which was the coat of ar3.ms of the Seljuks. It was later named Doğanhisar. Doğanhisar passed under the rule of Karamanoğulları in 1298, and joined the Ottoman Empire by ending the reign of Karamanoğulları in 1473 dur-

ing the reign of Sultan Mehmet the Conqueror. It became the district center in 1957 after the Republic established (Konev.org 2020).

## 3. POTTERY IN DOĞANHİSAR

### 3.1. Soil Structure and Clay Characteristics

It is the structural properties of clay, which is its basic raw material that gives the ceramic an essential characteristic. Doğanhisar has highly qualified clay deposits in terms of suitability for ceramics. These fertile clay deposits are one of the reasons why traditional terracotta production in Doğanhisar, located in the "Göller Bölgesi (Lakes Region), has continued uninterruptedly for about 9000 years. In addition to traditional pottery, which is a cross section of the intangible rural cultural heritage, the same clay deposits also play an important role in the contribution to ceramic production in industry across Turkey. At the end of the Miocene, the region entered a short-term uplifting regime and in the Pliocene, gravel, sand, mud and clays were deposited in alluvial fan, basin plain or in flood basin environment and originated the Doğanhisar formation (MEVKA 1987:26; Umut, 1987).

In Konya-Doğanhisar, a ceramic (bonding) clay deposit with 900 thousand tons of reserve is operated (Bostancı 2013:80). Clays extracted from these beds are used for fired clay products (brick, tile, drainage pipes, structural tiles, sewage pipes, glazed tiles, floor tiles, china, pottery, porcelain, electro porcelain, etc.) and other areas like refractory industry, cement and drilling mud. There are approximately 10-12 clay enterprises in Doğanhisar, depending on the location of the licensed fields. Doganhisar clay as ceramic raw materials both meets the needs of Turkey's leading ceramic factories, and is also exported abroad. These fertile clay deposits also provide an important input to Doğanhisar's economy.

In the Doğanhisar region, allochthonous soil is particularly dominant. Soil is largely of alluvial origin (Biricik, 1997:22). Porous structure is dominant in thin section analysis. It means porous tissue is more. Quartz in soil is superabundant and porous, and it has 0,1–1 mm. diameter and unshaped structure. The matrix ranges from red and brown, and in the matrix, there are, locally, anhedral quartz crystals and grains as well as opaque minerals (ferrous minerals such as hematite and limonite). Apart from these, metamorphic rock fragments and feldspar residues are observed in the matrix. The presence of metamorphic relics predicts the presence of a metamorphic feeding area in the immediate vicinity of the area where the clay is taken (Yağmurlu 2004). Ferrous clays containing hematite and limonite peculiar to the Neogene and mostly Pliocene crop out at a quitely wide area at the foothills of the Sultan Mountains and in the Doğanhisar region (Biricik S.A., 2018:18).

The industrial clay quarries of the region are located in Konakkale, 20 km from the district center. The clay extracted by the licensed businesses in this area is sent to the important ceramic factories in Turkey. In the on-site examinations and interviews with Tokluoğlu Mining LTD clay quarry operator Rahmi Başтoklu and M.Sc.Eng. (METU) Dr. Haldun K. Lutfullahoğlu, it was stated that the clay extracted from the quarry is the clay with the highest plastic value in the region. (Fig. 4 .).



*Figure 4.Tokluoğlu Mining LTD Industrial Clay Quarries, Konaklı District, Doğanhisar*



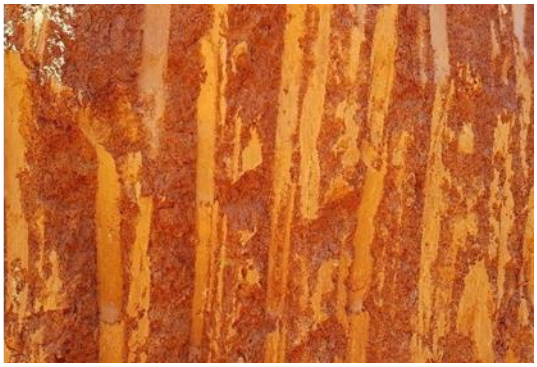


*Figure 5. Clay beds used by Potteries (Asmalı) Figure 6. Clay beds in detail (Asmalı)*

Chemical analysis results of "industrial clays" given by Tokluoğlu LTD. are; $SiO_2$: 66 %, $Al_2O_3$: 22-25 %, $TiO_2$: 1,21 %, $Fe_2O_3$: 0,90 %, CaO: 0,15 %, MgO: 0,32 %, $Na_2O$: 0,75 %, $K_2O$: 2,70 %, $SO_3$: 0,25 %.

The clay used in the pottery ateliers of Doğanhisar is obtained from the slopes called "Asmalıdere" adjacent to the district center. The clay pit on the first level of the slopes with two-level clay deposits is considered to be qualitatively at lower level by local potters. Therefore, clay is taken from clay deposits on the upper slopes. From this pit, clay is taken from 40 cm below the surface and transported to workshops by horse carriages and tractors. (Fig 5, 6.)

In a sedimentary lithological structure different from the soil,"silt",also called "ince kum" in the region, with grain size varying between 1/256 and 1/16, exists at variable ratio between 10-50% in the potter's mud (silty clay). This ratio in the clay used by Doğanhisar potters is generally 90% clay and 10% silt. The pots prepared with the use of clay in this ratio do not crack and break during the drying process, and also the jugs fired in this way ensure that the water is kept cooler. (Biricik S.A., 2018:20).

Likewise, according to the Chemical Analysis report dated 14.07.2020 and numbered SAM20 given by M.Sc. Eng H.K.Lutfulahoğlu from Tokluoğlu Mining LTD, the chemical structure of the clay used by Doğanhisar potters is; $SiO_2$: 56,0801%, $Al_2O_3$: 20,7134%, $TiO_2$: 1,1157%, $Fe_2O_3$: 10,5788%, CaO: 0,3573%, MgO: 0,9569%, $Na_2O$: 0,5984%, $K_2O$: 3.0513%, $SO_3$: 0.0351%.

### 3.2. Pottery Workshop Characteristics

Doğanhisar pottery ateliers are structures integrated with houses that are living centers. Today, only two pottery ateliers remain active in Doğanhisar. However, in the late 50s, there were more than 100 pottery ateliers. These ateliers were centered around "Ezze Deresi" (Ezze Brook). Today, the earthenware soil brought to the existing ateliers is still taken from "Asmalı Dere" (Asmalı Brook), Kuzyaka neighbourhood. (Fig. 7,8.) Pottery ateliers in Doğanhisar are called "karhane", meaning the place where commercial profits are made.



**Figure 7.** General view of an atelier



**Figure 8.** Jugs on drying racks

The workshops are mudbrick structures built on wooden columns and beams, with high ceilings built on a stabilized soil ground, in a rectangular shape, spread over an area of approximately 100 m². The walls are plastered with "aksıva", a type of lime. Wooden shelves are placed on the interior walls using tree. These shelves are mostly used for drying before firing. The finished pots are stacked on top of each other in a suitable place in the workshop. From the entrance of the workshop, generally on the left side, there is a place called "topraklık" where soil is accumulated and some technological tools like valse which are subsequentlt put into practice and workbenches with potter's wheel. These workbenches are

always located in the bright areas of the atelier. The back of the workshop opens to a garden called "arka hayat" [2] (back life) through a wide door, which can be considered as a follow-up of the workshop including kiln. Almost all operations are done in the workshop. Doğanhisar pottery workshops give a homogeneous appearance.

### 3.3. Pottery Masters

According to district annuals and local narratives, it is said that 80% of the people were engaged in pottery in the 1950s. This declining ratio and number of masters over the years have brought Doğanhisar pottery very close to the extinction level. Although there is no exact data, according to the research of Ali Selçuk Biricik[3], "Alaybeyi İsmail Usta", who completed his military service in Yemen in 1835, is considered as the first known pioneer master. There are four generations of potter masters that can be identified in Doğanhisar. Starting with the first generation master Memiş Kütükçü, who lived between 1881-1965 and trained many pottery masters, there were 52 masters between 1945-1955 in the second generation led by Hoca Halil Efendi, who was also a scholar. The number of major masters who started the pottery profession between 1950 and 1960, which continued in a decreasing course, was 19. Out of the last generation of 4 extant masters, there are only 2 left who are still pursuing their art today.

There was also a sectoral structuring in pottery, which was once the main occupation of Doğanhisar people. In so much that, each workshop consisted of at least 10 employees including Chief Master, Chief Head Assistant, Foremen, Apprentices, "Toprakçı"(those who brought the clay/soil), "Çamurcu"(those who prepared mud), "Kündeciler" (those who prepared the clay soil before putting on the wheel), "Tezyinatçılar" (Decorators) ,"Oduncular" (those who burned the kiln) and Sales Staff. (Biricik S.A., 2018:54). This rural business organization in pottery workshops shows us an atelier management structure that has not been encountered in pottery workshops in Anatolia.(Picture 8, 9, 10 ).

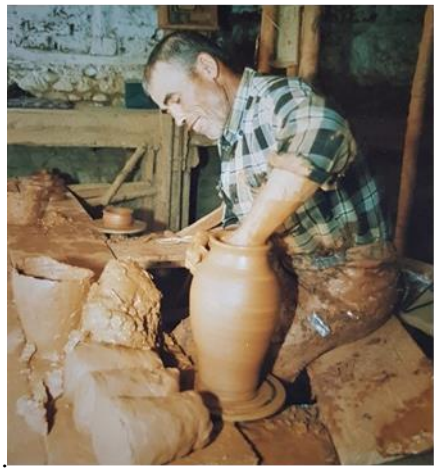


*Figure 9. Potter Mehmet Sever*



*Figure 10. Potter M. Eyidoğan*



*Figure 11. Potter İ.Yardımcı*

In Doğanhisar, there are only two ateliers and two potter masters from the last generation who are actively making production today. Mehmet Sever, one of the important masters of the district, who continued to produce until a few years ago and reached a high level in his profession, closed his atelier and did not produce pottery. Among the active workshops, Mustafa Eyidogan, nicknamed Demirağa, and Hüseyin Yardımcı continue to produce pottery in their own ateliers. The personal efforts of Eyidogan and Yardımcı do not fully meet their economic needs and the market areas of the goods they produce are shrinking day by day because of the widespread use of plastic and other industrial equipment.

### 3.4. Wheel

Considered the first industrial production in Anatolia, the 5000-year-old tradition of wheeled pottery has reached the present day almost uncorrupted with its operational features. For this reason, just like the emergence of an archaeological object of thousands of years as a find today, it is also very valuable to be carried an operational phenomenon (wheel pottery) to the present day as an archaeological value without interruption. In Anatolia, generally, hand lathes made

[2]. The place where rooms are opened on the ground or first floor of a traditional Turkish house, with a covered top facing the courtyard, with one or more open sides, is called "hayat"(life).

[3] Prof Dr Ali Selçuk Biricik is originally from Doğanhisar. Biricik, a Professor of Geography, has made significant contributions to Doğanhisar with his important academic studies in his field, as well as social and cultural research for his hometown Doğanhisar.

of stone, wood, clay and metal that can rotate around its own axis, foot lathes, pedal and electric lathes are used. The primitive potter wheels in Doğanhisar are the long shaft and bed lathes, which are commonly seen in Anatolian pottery and which fall into the 6th type workbench group according to G. Güner's classification (Güner, 1998:13).

In this region, as in many pottery centers, instead of using foot that allows the movement of the wheel, the electric motor is used by following the technology, but there are also foot lathes that preserve their originality in the workshops. The potter's wheel is placed inside the workshop, usually around doors and windows getting good light. (Figures 12, 13, 14.)

A long board that the master will sit on is turned into a rectangular seat by disassembling or assembling on wooden legs called "boyunduruk" (yoke) on the opposite stall board. In this way, an ergonomic integrity is provided with the production mechanism. The wheel placed right inside the rectangular stall is on left to the master. The master sits on the right side of the wheel. (Figures 15, 16, 17.)

In the region, the upper tray where the mud is placed is called "Çark Kafası" (Wheel Head), and the wooden wide table, which is turned by a foot or motor, is called "Çark Eteği" (Wheel Skirt). Top plate sizes can be changed according to the size of the form to be moulded. The standard diameter in the upper table is 25 cm. The diameter of the lower table is 95 cm and the length of the bar-shaft between the two tables is 60 cm.

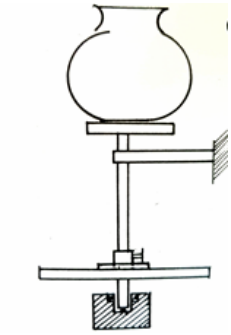


***Figure 12. 6th Type Anatolian Pottery Wheel (Güner, s.13)***

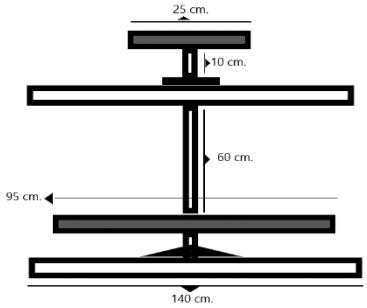



***Figure 13. Approximate Dimensions of Doğanhisar Pottery Wheel (Drawn by: Serap Ünal)***



*Figure 14. Pottery Wheel of Doğanhisar (Drawn by: Serap Ünal)*





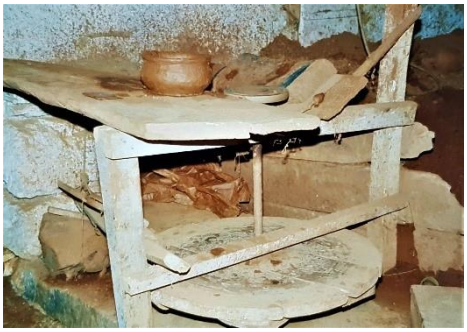


***Figure 15, 16, 17.*** *Pottery Wheels of Doğanhisar*

### 3.5. Mud Preparation and Production Techniques

In addition to the red soil with high iron oxide rate (this soil is also called the sieving soil in the region) taken from Asmalı Region, which is used in making pottery in Doğanhisar, the light-colored and sticky" çorak toprak" (barren soil), which is also called "fat soil or plastic soil", obtained from the slopes of the mountains surrounding the district is brought to the workshops by various vehicles. (Figures 18, 19, 20.) Barren soil is poured into the mud ponds prepared in 1x2 m dimensions and soaked, and then, to the soil rested in this way for a day, sieved Asmalı Dere (Asmalı Brook) soil (red soil) is added in approximately equal proportions.



*Figure 18. Untreated soil*

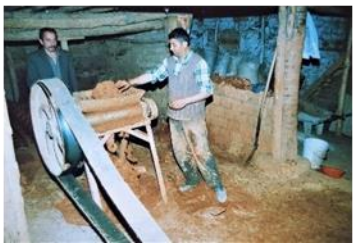




*Figure 19, 20. Kneading with electric valse*

The resulting mixture is made homogeneous in two ways: The first one is; the mixed mud, which was previously trodden out at least a day in the pool in the workshop, is taken from the pool with a shovel and trodden out again (locally called "çamur tepme" (mud stomping) or by a technological method, which is passing the mud through the crushing apparatus machines called "roller", formed by two cylinders rotating in opposite directions to each other. After this process, the clay, which is rested for a while, is placed on the mud board next to the wheel in the form of main lumps called "Kesek" (clod). The clay block (s) prepared in the form of main lumps are divided into pieces called "künde" again according to the size of the form to be processed on the bench. From here, it is placed on the upper plate of the wheel to originate the form. These clay lumps are called "künte" or "künde" in this region, the same as the name used in Anatolian pottery. The process of placing "künde" (clay lumps) on the upper plate of the wheel by the master to shape them is locally referred to as "tezgaha künde vurma" (knocking clay lumps-künde- on the bench). The mud is moistened by watering the clay lump. This process is locally called "çıvdırma"(deflection). Then the lower plate of the wheel is rotated with the help of a foot and the "künde" (lump) is brought to the center. The top of the clay brought to the center is drilled. The clay lump (künde) brought to the center, is opened with one hand inside and one outside, and the process of raising and shaping is started.

As the main grinding tools in shaping, tools made of two different sizes of wood, locally called "sahtiyan", are used. According to the shape of the jug form to be made, the one used in the neck part is called "boğaz sahtiyanı"[4], and the larger one used on the body is called "karın sahtiyanı". After shaping process is completed,the form is cut and removed from the upper table with the help of steel wire. Approximately one hour later, a handle is attached (kulp vurma) to the form that reaches leather hardness. (Figures 21, 22) A master can take an average of 100-150 pottery jug forms per day at the wheel.



*Figure 21. Metal and Wood Shaping tools*



*Figure 22. Jugs left to dry*

Before the jugs are put into the kiln, the diluted primer called white plaster (white lime solution), brought from Argıtan town (Ilgın district,Konya), is used for decoration. This spiral-shaped decoration made on the surface of the jug with a brush made of a donkey mane and feathers of poultry is locally called "çiçekleme" (blooming).

Although pure functionality is dominant in contemporary Doğanhisar unglazed forms, in peak-periods of pottery, the vessels were glazed and decorated with glaze called "sırça"(glass) in the region, depending on the purpose of use and aesthetics of appearance.

The preparation of glaze is also specific to the region. Diluted copper sulphate ($Cu\ SO_4$- $5H_2O$), which is also known as "Göztaşı" (blue stone) among public, a chemical particularly used in medicine and agriculture, is the basic coloring agent of Doğanhisar ceramic glazes that can vary according to the elements in it. Lead, which is a highly dense element, is melted in a

[4]" Sahtiyan" is a tool used in trimming which is about 15-20 cm wood with holes in the middle.

concave sheet at a certain temperature and made fluid. The horn of the goat is dipped into the molten lead with an interesting method, which is completely local. Thus, it helps the force (cohesion force) binding the lead element to disappear and turn it into powder. The goat horn application used here is very interesting. Because this process cannot be performed with the horns of other animals. The glaze is obtained by mixing lead, bluestone, goat horn and some water and melting them in the same pot in certain proportions according to the experience of the potter master. This mixture is then poured into a very large terracotta bowl called "dağar", which is also a local form. Small sized pots are glazed with dipping method, and large sized pots are glazed by pouring the liquid glaze mixture onto the form surface with a dipper from outside. After the first firing, the pots that are glazed are put into the kiln for the second glazed firing after 1-1.5 hours of drying time (Biricik, S.A. 2018:46).

### 3.6. Kiln type and Firing Characteristics

In Doğanhisar, dome type adobe kilns are used. This type of kilns are defined as "egg type" in the region. The kilns are also called "hurun" in the region. The mudbrick blocks used in the construction of the kilns are formed by pressing a mixture of soil and straw into wooden molds of 30x10 cm dimensions and after drying thoroughly for at least one week, the construction of the kiln is started with them. While two rows of mudbrick blocks are used in the firebox part of the kiln, single rows of adobe blocks are used in the upper section where the works are placed. After the walling process with adobe blocks is completed, the built kiln is left to dry. After the drying process is completed, the plaster formed by mixing straw and red soil in certain proportions is applied to the inner and outer walls of the kiln. Then, in order to strengthen the kiln, the widest part of the belly is surrounded by a metal ring and the kiln construction is completed. (Figures 23, 24, 25)





***Figures 23, 24. The Kiln and kiln mouth adjacent to the workshop***

It is recorded that there were 155 kilns in Doğanhisar in the 1960s (Biricik S.A. 2018:48). Traditional Doğanhisar kilns also consist of two main parts, in accordance with the general structure, as the firebox and the section "testilik" where the works are placed. There are approximately 60 holes in the perforated separator that separates these two sections from each other. The 3x3-3.5 m sized kiln's 3x1.5 m sized jug part, where the works are placed, takes approximately 400 jug. The works are started to be placed into the kiln directly above the separator and through a window opened on the side of the kiln. When the jugs placed from here reach a certain height, the kiln is filled by carefully adding/placing the other jugs from the top (from the chimney mouth) to the bottom jugs, and the top is covered with shards.

The firing process starts with the burning of wood from the mouth of the kiln early at 06:00 in the morning. The firing process continues in a controlled manner by pushing the firewood that later turned into embers into the interior of the kiln. Otherwise, uncontrolled sudden heat change causes cracking or shattering of products. After 12 hours, the continuity of the temperature is maintained by giving sawdust from the mouth of the kiln. When viewed from the chimney, if the work in the kiln has turned into glowing, the firing is ended. The firing temperature of the kiln is between 750 - 850 °C. The average firing time of 14-16 hours varies according to summer and winter seasons. During this time, 700-800 kg. wood is burned. After these processes, the kiln is left to cool down according to the seasonal conditions and the kiln is opened 1.5-2 days later and the works are removed.



*Figure 25. Out of Atelier (Open Air) Egg type kiln, Front side Firebox (Cehennemlik) and Back Side where the pots are placed*

### 3.7. Forms

It would be correct to group the Doğanhisar ceramic forms in two groups as the ones whose production has been terminated and are still ongoing. Doğanhisar pottery, which had a wide range of products and forms in its past, is limited to more narrow forms today. With the widespread use of low-cost contemporary tools, the decreasing number of ateliers, masters and staff led the local pottery to traditional forms that address daily needs such as casserole and water jugs.

Pottery products in Doğanhisar take the following local names according to their intended use and dimensions. [5]

### 3.7.1. Forms with ongoing production

The main forms in Doğanhisar are cubes (large jars) and jugs sized and shaped according to their functional purpose. Like the Anatolian jugs in general, Doganhisar jugs are forms for water use made of earthenware with round profiles, handles, wide bodies, narrow rims (Ünal, 2003:64).

*Jug*: It is a water jug with single handle, wide body and narrow neck. Standard sizes; Height: 45 cm., belly diameter: 20 cm., rim(mouth): 5 cm., neck: 6cm., wall: 0.5 cm.(Figures 26, 27, 28) Jugs can be produced in different sizes. According to the size of the jugs in the region, names such as "eldesti", "yatık", "boduç"," nimete" are given. The jugs with spout is also called "ülüklü"

[5] The Information, Local Names and Pictures of the Old Forms that are not in Production were transferred with the permission of Prof. Dr. Ali Selçuk Biricik's "Physical and Human Potential of Doğanhisar" book.





***Figures 26, 27, 28. Traditional Doğanhisar Pottery and Supply Cube***

*"Bardak" (Cup)*: It is a wide body, narrow- long-necked water jug with a handle like a big jug. The difference from jug is that cup is smaller. A cup is accepted as half of a jug, it's called "two in one jug". Height: 35 cm., belly diameter: 18 cm., rim: 3,5cm., neck: 6cm., wall: 0.5 cm.

*"Çocuk işi" (Child's work)*: Considered a scaled-down version of the ¼ jug. . For this reason it is also called "four in one jug" Height: 25 cm. belly diameter: 15 cm., rim: 3 cm., neck: 7cm., wall: 0.5 cm

*"Herse Çömleği" (Herse Pot)*: Double handled container in which cheese and molasses are put and also local dishes are made.

*"Sapsız" (handleless water-bottle)*: As the name suggests, it is a wide body, long necked water container without a handle. The rim is concave and ends with a thickened round lip. Height: 30 cm., belly diameter: 18 cm. rim: 4 cm., neck: 10 cm., wall: 0.5 cm.

*"Gili"*: It is the smallest jug form and is intended to be a child's play rather than intended for use. Height: 15 cm., rim: 3.5 cm., neck: 5 cm., wall: 0.5 cm.

*"Yaprak Taşı" (Leaf Stone)*: It is a eartenware utensil with a top handle, about 2 cm in thickness and 20 cm in diameter, which is placed in the casserole before the lid, in order to be well cooked , applying pressure to the meals such as stuffed grape leaves (yaprak dolması), wrapped vine leaves (sarma), etc. while cooking.

*"Güveç"(Casserole)*: They are clay pots that are similar in size to each other and function as pots used for cooking. Average dimensions. Height: 17 cm., rim: 20-25 cm., wall: 1 cm.

*"Gılgıla"*: A form used only for ornamental purposes.

In Doğanhisar, besides the traditional forms mentioned above, there are also forms for gift and daily use such as sugar bowl, ash tray, flower vase and flower pot. (Picture 25)

These forms are sold outside the district, to nearby centers such as Şarkikaraağaç, Yalvaç, Beyşehir, and Seydişehir. Apart from its functional purposes, it can also be marketed to some centers for touristic purposes even if it is in a narrow scope.

### 3.7.2. Old forms that are not currently produced

*"Ambar Küp" (Warehouse cube)*: As the name suggests, it is the largest jar form that was produced in the past and used as a food warehouse. Height 1-2.5 m, belly width 2-5 m, wall thickness (cidar) 9-12 cm.

*"Büyük Küp"(Large Cube)*: Large, wide-bellied, narrow-bottomed, thick-walled, handleless vessels for storing liquid foods such as water, molasses, oil or solid foods such as flour and wheat. Height: 80 cm. belly diameter: 45 cm., rim: 30 cm., wall: 0.7-1 cm.

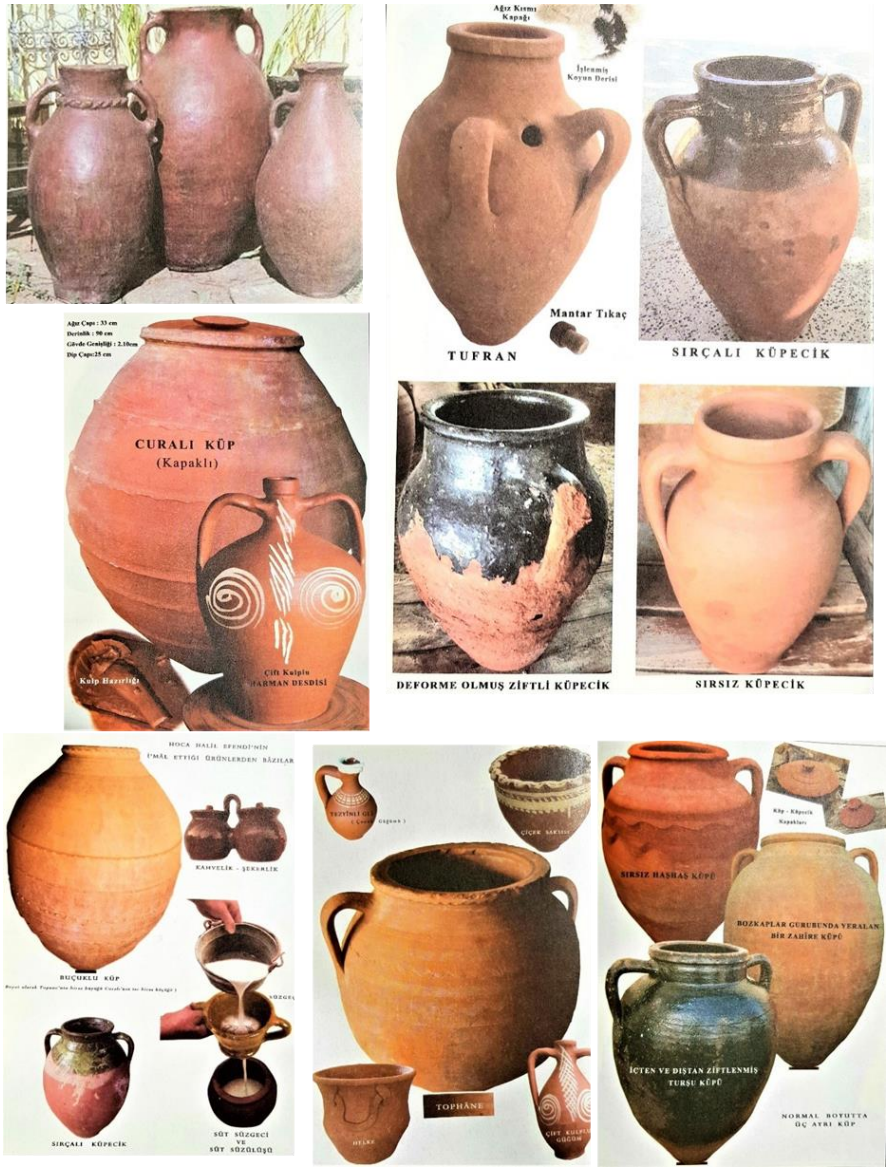



***Figure 29. Former Functional Terracotta Regional Vessels Not Produced In Doğanhisar Today (S.A. Biricik s. 68-86)***

In addition to dry foods, the cubes are also used to store acidic foods such as pickles by heating and pitching them. Small cubes are called "Küpecik".

Küpecik (small cubes) forms; In the region, it is called "sırçalı – sırçasız" (glazed unglazed) cube, pitched cube. (Fig. 29)

*"Curalı Küp"(Curalı Cube)*: It is a lidded form from the group of big jars. It was generally produced to store dry food. Height 90-100 cm., rim(mouth) width 33 cm., belly width 1-1.5 m. wall 5-9 cm. It has a volume of about 200 liters.

*"Buçuklu Küp" (Buçuklu Cube)*: These are large-bodied food storage cubes with 71 cm height and 13-20 cm. rim diameter.

*"Tophane"*: These are the cube group containers vary between 0.5-0.65 m height and 1-1.5 m. width.

*"Dağar"*: They are very wide mouthed, not too high containers. It is used for milk, cheese and yoghurt as well as for the preparation of ceramic glaze. Its mouth diameter is 50-70 cm and its height is 25-30 cm.

*"Tufran"*: They are glazed or unglazed earthenware vessels with an internal volume of approximately 15-20 liters, with double handles close to each other, and serving as a "yayık"(churn) for obtaining perforated oil.

*"Çay demliği" (tea pot)*: It is the tea infuser pot made of earthenware.

*"Kahvelik-Şekerlik" (Coffee-Sugar Bowl)*: Glazed vessel with two adjacent chambers and double handles.

*"Süt süzgeci" (Milk strainer)*: It is double-handled, 25 cm diameter, glazed strainer with holes at the bottom to filter milk. It is a ceramic form with an open bottom, reverse and truncated conical shape, which is used in the function of transferring milk to a clean container by cleansing it from foreign substances with the help of a cloth attached from the bottom.

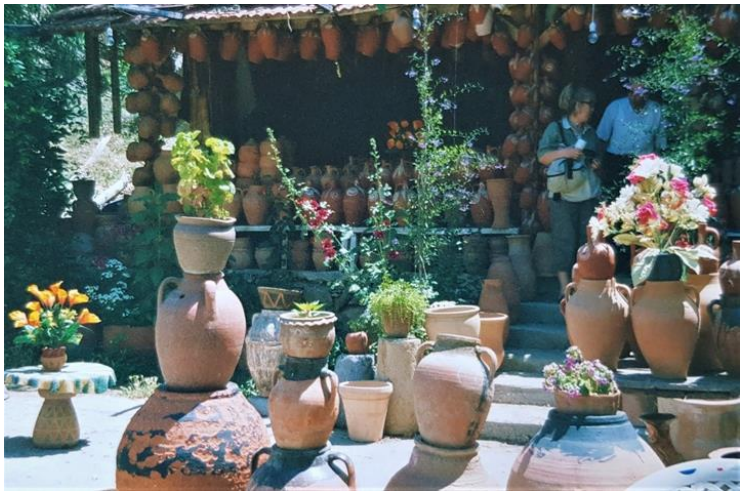


*Figure 30. Sales Center of Doğanhisar Pottery for both Functional and Touristic Purpose*

## 4. RESULTS AND DISCUSSION

Doğanhisar, with its archaeological and ethnographic extensions, is perhaps one of the countless examples of traditional Anatolian pottery. Since the location of the district, especially its Neolithic Period has not been studied sufficiently, there is not much information about pottery of this period. However, we know very well that the geography that includes Doğanhisar, namely the "Göller Bölgesi" (Lakes Region), according to the available data of the researches, is a very important archaeological site in Anatolia that lived the Neolithic Age intensely. We know that the ceramic phase of the Anatolian Neolithic started in this region around 6500 BC. This shows us that pottery has been produced uninterruptedly for about 8500 years in the region where Doğanhisar is also located. It's exciting to even think about an 8,500-year-old tradition.

On the other hand, it is upsetting that this long adventure is interrupted in the context of "Intangible Cultural Heritage" within the scope of protection, promotion and development for some reasons. Because a visible extinction process has begun. Today, there are only two ateliers and pottery masters left in Doğanhisar. This situation in Doğanhisar is just one example of a similar case in all Anatolian pottery.

The following sentences of the Convention for the Protection of the Intangible Cultural Heritage, which define the intangible cultural heritage, are remarkable in this regard; "*Intangible cultural heritage means the practices, representations, expressions, knowledge, skills and associated tools, materials and cultural spaces that communities, groups, and in some cases individuals identify as part of their cultural heritage. This intangible cultural heritage, handed down from generation to generation, is constantly recreated by communities and groups based on their interaction with their environment, nature and history, giving them a sense of identity and continuity; thereby contributing to respect for cultural diversity and human creativity*" (Oğuz, 2005:164)

When we look at the sociocultural impact, we see that some social usage habits have changed depending on technology, as in many pottery centers in Anatolia. Reasons such as the widespread use of plastic or mass-produced containers and the disappearance of food storage concern with refrigerators significantly affected the aforementioned extinction process (Ünal, 2000:318).

We have also mentioned that Doğanhisar has important clay deposits in Turkey**.** Within the scope of large-scale industrial clay production, especially large-capital mining enterprises and large ceramic factories that purchase raw materials from these mines can enrich the cultural heritage with an economic, social and cultural integration in this geography and within their own bodies. The Government is also capable of supporting such an integrated cultural formation. Doğanhisar is also in a suitable location for the ceramics villages project, which will reveal the cultural and visual richness of pottery. Undoubtedly, these and similar practices will contribute to the rural economy, especially in terms of tourism.

Ceramic art and production, which is the indispensable document of Archeology, Art History, History and similar disciplines, should necessarily be researched and developed by questioning in the traditional aspects. An Anatolian tradition of 8000-9000 years should not be left alone. Consequently, a traditional handicraft, which is at the edge of extinction, dating back to thousands of years of history is, of course, a significant cultural heritage.

## 5. CONCLUSION

Ceramic, which is formed by the integration of air, water, earth and fire, which are considered to be the four basic life elements (Anâsır-ı erbaa/Four Ele-

ments) with the general acceptance of all celestial religions since Aristotle, is also permanent as a terracotta material that cannot be destroyed serves this cultural process.

The transition to wheel pottery is a completely different industrial revolution. The potter's wheel, which is considered the first beginning of equipment production, is a historical phenomenon in itself. It is interesting that all types of the wheel, from the first and most primitive first type, to the pedestal wheel, are used in many pottery centers of Anatolia today without any change. With a simple example; if you cut the pointed bottom of an amphora 15-20 cm above and flatten the bottom, you will see a typical Anatolian jug. Likewise, isn't it surprising that the 1st and 2nd type of potter's disk still used in Gökeyüp (Anatolia) is similar to the disk dated to 3500 BC, which was unearthed in Uruk (In the L. Woolley Excavations), where the wheel was first found? Of course, the place of this existence in the content of cultural heritage is indisputable. The fact that an archaeological action thousands of years ago, such as the objective unearthing of an archaeological find, has survived and continues to the present day without any deterioration will undoubtedly create great excitement for cultural scientists.

In the words of archaeologists, ceramics, which is the philology of the ages insufficient in archaeoceramics, is too important to be left to a single field of science or art. Therefore, from past to present, ceramic culture, archeology, anthropology, geology, art etc. should be researched and studied together with many disciplines in different fields. It should be further enriched culturally and scientifically

Like other pottery centers in the Lake District, Doğanhisar is a good example of the living state of pottery, a tradition of thousands of years in Anatolia. The most important basis for the continuation of cultural pottery, which can be sustained in Anatolia, must be that the traces of a 9000-year-old effort are not erased.

## REFERENCES


Aksoy, R., Ali Bozdağ, A., (2008) *Doğanhisar-Hüyük (Konya) Arasında Sultandağları Masifinin Yapısal Özellikleri,* Selçuk Üniversitesi. Mühendislik-Mimarlık. Fakültesi Dergisi, Konya, 2-16.

Akurgal, E., (1998) *Anadolu Kültür Tarihi*, Ankara, TÜBİTAK Popüler Bilim Kitapları.

Biricik, N. Selçuk., (1997) *Doğanhisar Yöresinin Coğrafi Etüdü*, Marmara Üniversitesi Sosyal Bilimler Enstitüsü, Yayımlanmamış Yüksek Lisans Tezi (Unpublished Master Thesis), İstanbul.

Biricik, Selçuk , A., (2018) *Doğanhisar'ın Fiziki ve Beşeri Potansiyeli*, İstanbul.

Bostancı, İ., (2013) *Konya İli Maden ve Enerji Kaynakları*, KOP Bölgesi Üniversiteler Birliği Bölge Kalkınma Dergisi, Konya, 79-91.

Güngör, G., (1988) *Anadolu'da Yaşamakta Olan İlkel Çömlekçilik*, Ak Yayınları Kültür Serisi, İstanbul.

Kalkolitik Dönem, http://www.tayproject.org/kalk., ERİŞİM (Access): 18.09.2020.

Konya Valiliği, http://www.konev.org.tr/konya/ilcelerimiz.htm, ERİŞİM (Access): 26.08.2020

Seton, L., (1998) *Türkiye'nin Tarihi- Bir Gezginin Gözüyle Anadolu Uygarlıkları*, Çev. E. Varinlioğlu, Ankara:TUBITAK Popüler Bilim Kitapları, Nurol Matbaacılık, Ankara.

Mevlana Kalkınma Projesi (MEVKA), (2012) *Doğanhisar İlçesi'nin Kil Başta Olmak Üzere Maden Türünden Yeraltı Kaynaklarının Potansiyellerinin Tespiti*, (Proje) TR52-11TD01/118, Konya, 2012

Öcal, O., et al., (2005), *Somut Olmayan Kültürel Mirasın Korunması Sözleşmesi,* Milli Folklor, Sayı 65, Ankara, 163-171.

Özkan, S., Erdalkıran, M., (2014) *Yeni Buluntuların Işığında Çukurkent Neolitik Yerleşimi*, Adalya Suna-İnan Kıraç Akdeniz Medeniyetleri Araştırma Enstitüsü Yıllığı, The Annual of the Suna & İnan Kıraç Research Instıtute on Medıterranean Cıvılızatıons, İstanbul.

Ünal, S., (2003) *8000 Years of Turkish Pottery*, Ceramics Technical. No 17, Art and Perception P/L, Australia.

Ünal, S., (2000) *Binlerce Yıllık Çömlekçilik Geleneğinde Sagalassos-Çanaklı Açılımı*, Suna-İnan Kıraç Akdeniz Medeniyetleri Araştırma Enstitüsü, ADALYA, The Annual of The Suna & İnan Kıraç Research Instıtute on Medıterranean Cıvılızatıons, (No.ıv/1999-2000), İstanbul.

Yağmurlu, F., (Prof.Dr.), (2004) SDU. Jeoloji Bölümü, Yayınlanmamış İnce Kesit Analiz Raporu (Unpublished Thin Section Analysis Report), Isparta.