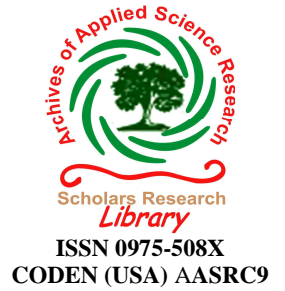




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Angora goat and Mohair Production in Turkey

Guzin KANTURK YIGIT

Karabuk University, Department of Geography, Karabuk-TURKEY

ABSTRACT

The homeland of Angora goat or in other words, Angora goat (Capra hircus ancyrensis), is known as Central Asia that was brought to Anatolia by the Turks. Angora goat is mainly grown in Angora, some of the other interior parts of Turkey. The most important advantage of Angora goat is mohair. Angora goat is one of Turkey's important gene sources. Angora goat is important for the distinction of being a source of genes in Turkey. The aim of this study is to introduce Angora goat that was raised in Turkey with the most pure examples and they spread the world from Turkey. It also attracts attention to Angora goat and mohair production. For this, the data of both Turkey Statistical Institute (TUIK) and the Ministry of Agriculture were used. Descriptive method was used in the study. The studies which related to the subject and statistical data have been used. As a result, it has been found out that the number of Angora goat, mohair production and mohair has been in a rapid decline trend in Turkey.

Key words: Angora goat, Angora goat, Mohair, Production, Economic Geography, Turkey

INTRODUCTION

Goat farming is usually done in less developed or developing countries. There is an also social aspect as well as economic aspects of goat farming [1, 2, 3, 4, 5]. Also goat farming has an important place in Anatolian culture. Turkish people get the use of Angora goat in many economic benefits from nutritional benefits to clothing [6].

From the time of Ottomans that held the world production of mohair and today Angora goat and mohair is worth examining. Angora goat that is especially grown in the vicinity of Angora has taken its name from Angora city, so it was called as Angora goat between nations. Angora goat is native to Central Asia, brought to Anatolia by the Turks [7]. This type of goat accommodated to Central Anatolia's continental climate. Angora goat is not seen on the coastal areas because lint softness, silky feature and curly features are not available in that area. Angora goat is especially grown in Angora, also some provinces like Konya, Karaman, Kırşehir, Niğde, Yozgat, Eskişehir, Kutahya, Bolu, Afyonkarahisar, Çankırı, Çorum, Kastamonu, Siirt, Mardin, Bitlis and

Van. Angora goat was only grown in Anatolia until 1838 then it started to be grown several countries, mainly in South Africa.

Angora goat has a small, soft body, covered with bright and curly mohair. The main purpose of growing Angora goat is their mohair rather than their meat and milk production. Mohair's feature is shiny, elastic, harmful sun rays, moisture, and heat-resistant, dirty repellent and can be easily painted [7]. Although Angora goats' colors is generally white, there have also seen cream, yellow, black, gray, brown and black colors. Mohair yield changes according to age, gender and feeding type of Angora goats. Angora goats get cropped once a year. Mohair yield has an average range 1.5 to 3 kg in females, 3- kg in males. Mohair is used in knitting industry, clothing, upholstery fabrics, blankets, carpets, shawls, hats, scarf, scarves, boots, slippers, wigs, children's toys and decorative purposes.

Angora goat and mohair production has been rapidly decreasing in Turkey. Some precautions should be taken as soon as possible for Turkey's production of mohair in the world to maintain its place and mohair has become one of the important export products.

MATERIALS AND METHODS

The aim of the study

Angora goat has been unique to Angora which is the source of goat mohair production. Rapid decline the number of mohair production from the republic time (1920's) to present. Especially, the decline that began after 1960's goat was once 6 million but it fell down to 150

thousands today. The aim of the study is to attract attention to the current situation of Angora goat and mohair in Turkey. Although some studies have been done about goats previously, this study is important in terms of being one of studies in the field of geography.

The methods of the study

To grow Angora goat and achieve mohair has become a significant source of income in Turkic publics for many years. Mohair was one of the most revenue goods that were exported in the Ottoman period. The fall at the last fifty years was worth studying from the republic period to recent years. The State Statistical Institute (TUIK) data and the Ministry of Agriculture and Rural Affairs and related institutions' data were used in the study.

The study is a descriptive survey. The subject is studied through the relevant data and previous research findings. The study is discussed under these headings: *Angora goat and Mohair in Turkey, Discussion and Conclusion also Recommendations.*

Angora goat And Mohair in Turkey

Angora goat is one of the oldest living animal genes. There are traces of this type of goat at old records in BC 11th, 12th and even 14th centuries. It was transplanted in Exodus's book that the sons of Israel fled from Egypt have brought goats and they weave mohair to use their altars. The origin of growing Angora goat goes back to the 1220's in Anatolia. Kayı clan came to Anatolia in 1220 when Mongol army driving them from territory. When Suleyman shah died, his sons settled in the area from Kayseri to Angora with their goats. Since then, Angora goat and mohair production has been carried out in Angora and its surroundings [8]. The most exported revenue of Ottoman economy was mohair. Also travelers of the period paid attention to this situation. Tournfort was reported that 1355 mohair clerk and 20.000 round fabrics were exported from

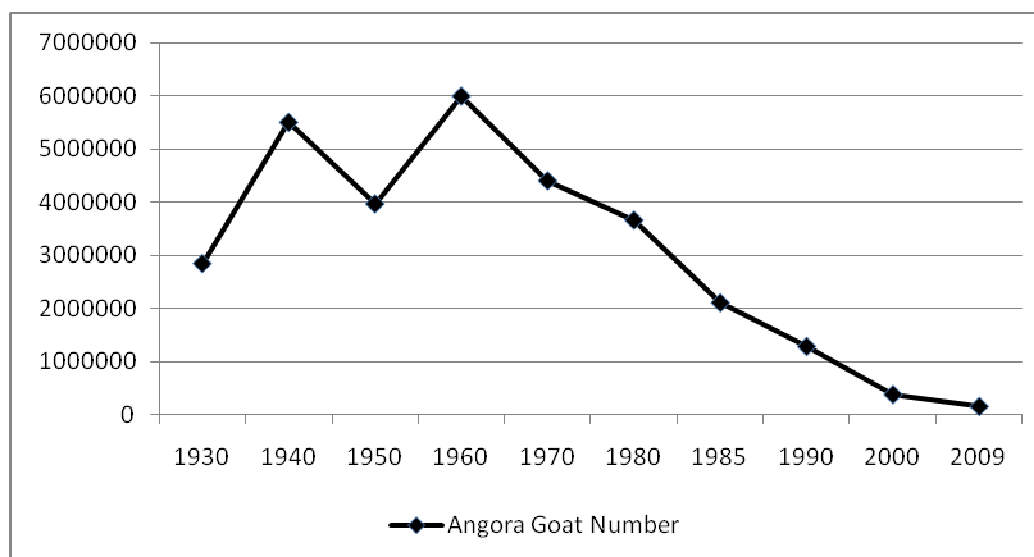
Angora vicinity. Hamilton who came to Angora in 1835's also had written that more than 1.000 mohair benches were in Angora [9].

It was forbidden to sell Angora goat or raw mohair to abroad until 1838. In 1838 it was terminated monopoly of Ottoman's on mohair after signing Balta Port Treaty with the British [10,11]. Today, Angora goat and mohair producing countries are South Africa, the United States and Turkey. Except these countries, Argentina, Lesotha, Canada, New Zealand, Russia and Brazil are grown Angora goat. The mohair production was decreased by around 45 % in South Africa during 1988-1992. Also Turkey and Argentina's mohair production decreased during this period. The reason of this is the low prices and drought as mentioned above [12].

Angora goat is a small, slim and elegant race. One of the indicators of purity is the distance between his brown horns. This distance should be 1-1,5 cm. The whole body except the face and legs covered with fine, soft, shiny and curly mohair. Mohair yield is higher in those with curl is on his forehead and abdomen is completely covered with mohair. Its shoulders are of slightly higher rump and back legs are higher than front legs. Main body color of Angora goats is white but also cream, yellow, gray, brown, black and varied colors can be seen. Angora goats usually have horns. Ears are large, long and flaccid. The head, neck, abdomen and the whole body is covered with long mohair. Muscle and bone development is not very good but walking ability is sufficient [13].

The number of Angora goat continued to increase until 1960's, the first years of the Republic, after then it was in a rapid decline trend. The developments about the presence of Angora goat during 1930-2009 are shown in Figure 1. According to the figure, presence of Angora goat decreases rapidly (Figure 1).

Figure 1: Change in the Number of Angora Goat from Republic Years to Present in Turkey (1930-2009)

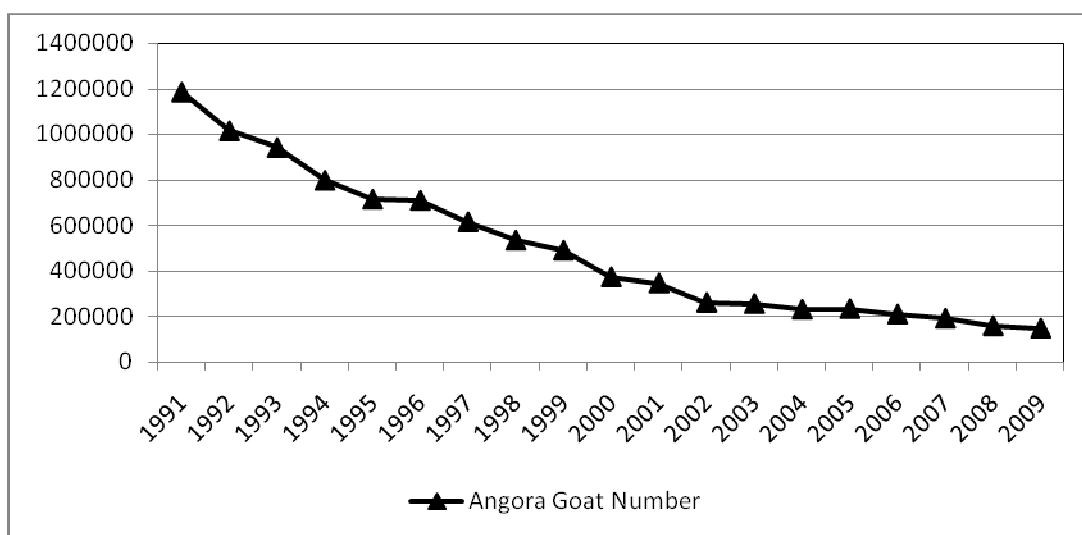


Source: Turkey Statistical Institute

While the number of Angora goat around three million in the period of the Republic in between 1940 and 1960, this number increased up to five million today (Figure 1). A rapid decrease experienced from 1960 until 1990's (Figure 2). It can be said that Angora goat lost its importance in this period. A lot of factors may have been effective in reducing the number of

Angora goat. For example Turkey gives the weight of industrialization but does not support enough agriculture and animal husbandry, urbanization and internal migration, South Africa and the United States' productions of mohair and Angora goat are more so they offer cheaper goods than Turkey so Turkey became unable to compete with other countries that produce mohair, and there are not sufficient studies to increase mohair production as other countries. According to 2008 Turkey Statistical Institute data, the ratio of Angora goat is approximately 3 % in the presence of goat in Turkey.

Figure 2: Change in the Number of Angora Goat after 1990, in Turkey



Source: Turkey Statistical Institute

Table 1. Number of Angora Goat in Turkey (1991-2009)

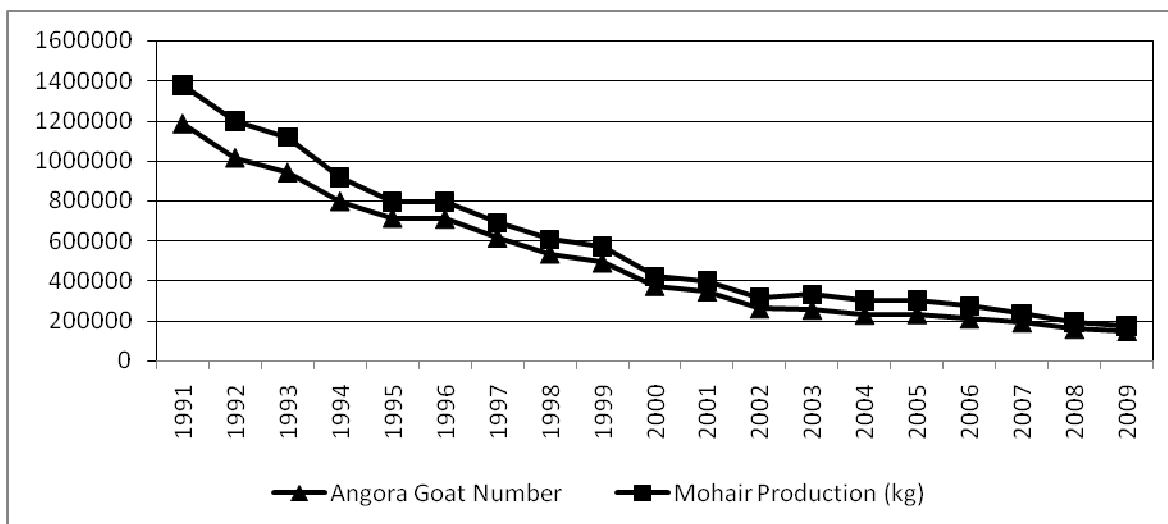
YEARS	NUMBER OF ANGORA GOAT
1991	1.184.942
1992	1.014.340
1993	941.000
1994	797.000
1995	714.000
1996	709.000
1997	615.000
1998	534.000
1999	490.000
2000	373.000
2001	346.000
2002	260.762
2003	255.587
2004	230.037
2005	232.966
2006	209.550
2007	191.066
2008	158.168
2009	146.986

Source: Turkey Statistical Institute

According to Turkey Statistical Institute's data, rapid decrease in the number of Angora goat in 1991-2009 has been in the decrease trend according to the previous period, the number of

Angora goat fell down to one million. Also there are several reasons of decrease in this process. Some reasons may be suggested as; small livestock sectors should be ignored, migration to cities, market conditions, less demand for goat products, reduction in pasture areas, decreasing the young population in rural areas and number of enterprises, increases in input costs due to high cost of shepherd and difficulties of finding it, the support that given by government to Angora goat is cut after the 1990's, increase in meat prices in Turkey etc [14].

Figure 3. Angora Goat and Mohair Production in Turkey (1991-2009)



Source: Turkey Statistical Institute

Table 2. Mohair Production in Turkey

YEARS	MOHAIR PRODUCTION (Ton)
1991	1.379
1992	1.200
1993	1.118
1994	917
1995	797
1996	795
1997	690
1998	607
1999	571
2000	421
2001	400
2002	318
2003	333
2004	304
2005	302
2006	274
2007	237
2008	194
2009	174

Source: Turkey Statistical Institute

Fiber that obtained from bright, long and soft hair of Angora goat is called as *mohair* [15]. The value of world market determined based on the quality characteristics such as strength, the lint

fiber diameter, length, curve and resistance. The mohair is bought and marketing by Tiftikbirlik (Union of Mohair Producers) in Turkey. The number of registered co-operative establishments is 12. The mohair producer number is registered to union is 19.0000. The government purchased 1960 to 1994 for support the mohair producers [9].

Mohair production declined after 1990's depending on the amount of decrease in the Angora goat. Mohair production is declined from 1379 tons in 1991 to 174 tons in 2009 (87,4 %) (Figure 3). The demand of mohair rapidly increased according to the development of hand-knitted culture in Europe and the Far East in the early 1970's. After the 1980's the majority of mohair knitting parts of markets were eliminated because of the interest reduced greatly in the products of mohair [16].

Table 3. Milk and Meat Production of Angora Goat in Turkey

YEARS	MILK (Ton)	MEAT (Ton)
1991	12.655	1.414
1992	10.993	1.087
1993	9.878	907
1994	8.160	502
1995	7.537	487
1996	7.295	482
1997	6.258	451
1998	5.458	654
1999	5.161	952
2000	3.883	463
2001	3.914	313
2002	3.218	287
2003	3.786	202
2004	3.619	118
2005	3.513	384
2006	3.165	56
2007	2.604	*2413
2008	2.185	*13753
2009	1.924	*11675

* The total for the number of goats were slaughtered since 2007

Source: Turkey Statistical Institute

The number of Angora goat was 3305424 in 1935; this was constituted 9% of total number of animals and 13% of small ruminant animals. The number of Angora goat increased 5500000 in 1965 but it was 8 % of total number of animals and 10 % in small ruminant animals.

After 1990, rapid increases took place and it was 0,6 % of the total number of animals. Accordingly, the mohair production decreased and Turkey left world mohair market gradually (Tasligil and Guven, 2010). However, the mohair export value was reached a very important ratio as 4,56 % in overall export value in 1959. In 1959, 8442 tones, in 1960 4515 tons mohair were exported. Today, the annual mohair production declined to 174 tons in Turkey. The presence of Angora goat number declined about 146 thousands [9]. This reduction points out the danger of decrease in Angora goat, its economic value and danger of extinction.

Although the determination of use economic from Angora goat's milk, meat, skin and sheepskin and it reported about the related organizations [17]. The progress on getting the use of meat and dairy products can't be achieved. Due to the decrease in number of Angora goat, the milk production is decreased from 12655 tons to 1924 tons (84,8 %), the meat production is decreased from 1414 tons to 56 tons (96 %) in 1991-2009. After 2007, the Angora goats' meat production was not separated from all goat types.

Some precautions were tried to prevent the decrease in the number of goat. Angora goat (*Capa hircus ancyrensis*) was also added to "Project of Conservation of Domestic Animal Genetic Resources" in 1997 which started in 1995 in GDAR (General Directorate of Agricultural Research) under the Ministry of Agriculture and started to work on the protection of this race. "Domestic Animal Genetic Resources Conservation and Development Project of Public" was started in order to ensure the participation of the public [18]. A paper published in Official Newspaper dated on 12th December 2004 concerning the registration of domestic animal breeds and their shapes. Also Animal Improvement Act published on 10th March 2001 and "Regulations on the Protection of Animal Genetic Resources" was enacted on 19th March 2002 which was prepared in accordance with this law. "TURKHAYGEN-1" project was initiated in 2007 with the support of the Ministry of Agriculture and Rural Affairs and 10 universities' cooperation. Studies for collecting the materials that can be liven as the local genetic resources, egg cells, sperm and embryo and protecting them in gene banks were carried out. Angora goats were protected in such terms. When figures and tables examined, it can be seen that there has not been any positive effect of these studies on Angora goat and its products.

Consuming of mohair is carried out by Mohair Union cooperation in Turkey. It was founded in 1969 and consisted of 12 cooperatives. It is the most significant institution in this field that has 19000 members of manufacturer of mohair.

DISCUSSION AND CONCLUSION

Turkey, especially with the features of Inner Anatolia Region has favorable geographical conditions for Angora goat. Angora goat is an important source of animal genes in Turkey. The goat farming has emerged as a necessity in Turkey that mountainous areas occupied more space and the production patterns are not large. Therefore, reducing the number of goats or the abandonment of goat breeding will adversely affect the livelihood of people. The socio-economic importance of goat breeding has also been carried out in many studies recently [19, 20, 21, 22, 23].

Angora goat is an important animal gene in Turkey. The production and products that were obtained from Angora goat has experienced a rapid decline especially after the 1990's. The necessary measures should be taken as soon as possible to prevent the reduction and to increase the number of Angora goat. The increasing number of of Angora goat will improve the mohair production consequently which is so significant in terms of raw material for textile products.

The results of this study are as follow:

- The number of Angora goat that was millions in 1930's decreased to 4716000 (78,7 %) in 1960-1990. This decrease can obviously be seen in Turkey Statistical Institute's data.
- The number of Angora goat decreased more than the previous period in 1990-2009. Indeed the number of Angora goat decreased to 1037956 (87, 6 %) between 1991 and 2009. Tasligil and

Guven reported the rapid decrease in the number of Angora goat after 1990 and the ratio of it was 0,6 % of the total small ruminant animals in their studies.

- In parallel with the rapid reduction of Angora goat, the mohair production is declined either. Once the world mohair market was held by the Ottomans but at present the production of mohair was 1379 tons in 1991, 174 tons in 2009. It means that mohair production is 87,4 % declined. Especially after 1990, the production of mohair was decreased due to decreasing of the number of Angora goat. This situation was also pointed out in Tasligil and Guven's study [24].
- As well as the reduction of mohair, the amounts of milk and meat of Angora goat was also decreased. Milk production is decreased, from 12655 tons to 1924 tons (84,8 %) in between 1991 to 2009. Also the meat production decreased from 1414 tons to 56 tons (96 %) in between 1991 to 2009. Turkey Statistical Institute's data indicates this decrease as well.

The causes of the decline in the number of Angora goat are the following:

- Related institutions are small and disorganized,
- Ignoring ruminant livestock,
- The migration from rural areas to cities,
- Not using the new techniques and Technologies in the production of Angora goat,
- Inadequate support for Angora goat,
- Consumption habits,
- Less employment opportunities in goat breeding
- Insufficiency and marketing problems in mohair prices
- Unconscious use of pastures,
- The increase of meat prices,
- Reducing of number of enterprises due to migration to cities,
- Less demand for goat products,
- High input costs,
- Being marketing conditions against manufacturers,
- High expenses of Shepherds etc.

Kaymakci and Engindeniz (2010), Ertugrul and others' (2010) studies also support the above mentioned reasons.

Recommendations

Angora goats' products like mohair, meat and milk required to be support by the related institutions. The government should continue to support mohair production again and domestic production should be supported. Turkey as a significant share of the mohair marketing should be evaluate this situation and be effective and carry out urgent researches to take an important part in the mohair production in the world. Different mohair products should be presented to the world market. Angora goat and mohair products should be advertised more and efficiently. Educational projects should be prepared to be able to get a better yield to increase the number of Angora goat breeders and producers. Angora goat gene is specific to Turkey and it should be developed. Turkey should be one of the significant countries in the world mohair industry again.

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