Turkish Journal of Agriculture - Food Science and Technology, 14(8): 2233-2237, 2026
DOI: https://doi.org/10.24925/turjaf.v14i8.2233-2237.8573

Turkish Journal of Agriculture - Food Science and Technology

Available online, ISSN: 2148-127X | www.agrifoodscience.com | Turkish Science and Technology Publishing (TURSTEP)

A Comparative Assessment on Horse Breeding in Türkiye and Kazakhstan

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ARTICLE INFO

Research Article

Received : 01.12.2025
Accepted : 12.02.2026

Keywords:
Equine Culture
Horse breeding
Kazakhstan
Türkiye
Primary Use

ABSTRACT

The horse has played a pivotal role in the cultural, social, and economic development of Turkic societies, and in this context, Türkiye and Kazakhstan are regarded as two of the most significant centers of equine culture. Both nations share a nomadic heritage and a long standing tradition of relying on horses for transportation, warfare, and subsistence. Nevertheless, their breeding objectives, management practices, and socioeconomic priorities have gradually diverged over time due to differences in geography, climate, and historical trajectories. In Türkiye, horse breeding historically emphasized performance, conformation, and aesthetic qualities, particularly for cavalry, ceremonial use, and later, sport and racing purposes. Modern programs focus on the development of purebred Arabian and Thoroughbred horses. Despite a decline in overall horse numbers, traditional equestrian sports such as javelin and pacing continue to preserve cultural identity and strengthen the symbolic significance of horses in Turkish society. In contrast, Kazakhstan maintains a more extensive, multipurpose system rooted in the nomadic tabun management approach. Kazakh horses have evolved under year-round herd grazing, developing exceptional resilience, endurance, and adaptability to extreme continental climates. They serve as sources of milk (kumis), meat (kazy), and transportation, making them central to rural economies. Modern breeding has refined specialized lines, including Kushum, Mugalzhar, Adai, and Zhabe, which demonstrate superior productivity, environmental adaptation, and athletic performance. This comparative review examines historical development, breeding practices, biological traits, and socio economic roles of horses in Türkiye and Kazakhstan. Highlighting contrasts between controlled and herd-based systems, it provides insights for conservation, genetic improvement, and sustainable equine management while emphasizing the horse's enduring role as a cultural, ecological, and economic asset.

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Introduction

The horse has played a central role in the history, culture, and economy of Turkic nations for millennia, serving as a symbol of strength, freedom, and social prestige (Aksoy, 1998; Durmuş, 2021). Beyond their practical utility for transportation, warfare, and agriculture, horses have profoundly influenced human settlement patterns, nomadic mobility, and cultural traditions. In both Türkiye and Kazakhstan, equine heritage is deeply intertwined with national identity, folklore, and rituals, reflecting a long-standing symbiosis between humans and horses (Vitt, 1937; Assanbayev et al., 2024).

Türkiye and Kazakhstan share a common nomadic ancestry, with historical reliance on horses for mobility, herding, and military campaigns (Bayram, 2022). However, the environmental conditions, socio political development, and economic priorities of each country have shaped divergent approaches to horse breeding. In Türkiye, the introduction of Arabian, Persian, and later European bloodlines, combined with state sponsored breeding programs during the Ottoman period, emphasized refined conformation, endurance, and aesthetic qualities suitable for cavalry, sport, and ceremonial purposes (Bayram, 2022; TİGEM, 2022). The advent of mechanization and urbanization reduced the functional role of horses, yet traditional equestrian practices such as javelin, show jumping, and mounted folklore games continue to preserve the cultural significance of horses in rural and urban communities (Aksoy, 1998; TÜİK, 2022).

In Türkiye, purebred Arabian and Thoroughbred racehorses, which have developed into a structured breeding sector for use in horse racing, are bred by both the public and private sectors. In addition, traditional equestrian sports such as javelin, horse racing, mounted archery, horse sledding, and Gökbörü have been practiced for many years. Equestrian disciplines including dressage, show jumping, and endurance riding are also conducted

under the auspices of the Turkish Equestrian Federation. Furthermore, horses bred for these purposes are also utilized in alternative therapeutic practices, particularly for hippotherapy (Anonimous, 2026a).

In contrast, Kazakhstan maintains a predominantly extensive, multipurpose approach rooted in centuries of nomadic herd management (Assanbayev et al., 2024; Sharapatov et al., 2025). The tabun system, characterized by year-round grazing and minimal human intervention, has produced horses with exceptional endurance, hardiness, and ecological adaptability (Vitt, 1937; Sharapatov et al., 2025). Kazakh horses provide meat, milk (kumis), transportation, and labor, making them integral to rural economies and subsistence practices (Toishimanov et al., 2025). Specialized lines such as the Kushum, Mugalzhar, Adai, and Zhabe breeds have been further refined through selective breeding while preserving resilience to harsh continental climates (Assanbayev et al., 2024; Sharapatov et al., 2025).

This study provides a comparative analysis of horse breeding in Türkiye and Kazakhstan, examining historical evolution, breeding objectives, management systems, biological traits, and socio-economic roles (Akimbekov et al., 2023; Pozharskiy et al., 2025). By highlighting both the commonalities and divergences in equestrian practices, this review deepens understanding of how local environments, cultural traditions, and economic strategies influence equine populations. Additionally, it explores potential avenues for collaborative research, conservation, and the promotion of Turkic equine heritage in the modern era (Assanbayev et al., 2024; Sharapatov et al., 2025).

Historical Background

Horse Breeding in Türkiye

Horse breeding and utilization occupy a significant place in the traditions of the Turkish nation. As a result of the migrations and conquests of ancient Turkic tribes from Central Asia, and particularly during the Seljuk and Ottoman periods, the success of armies was strongly influenced not only by various strategic and organizational merits but also by the effectiveness of Turkish cavalry units and the Turks' exceptional skills in horsemanship. Historical sources indicate that horses held an important place in Turkish folklore, literature, poetry, sports, and games, and even in religious rituals during earlier periods. It is recorded that Turkish children were accustomed to horseback riding from the age of three and became fully competent horsemen by the age of eight. The prestige and superiority of renowned individuals and tribes were often attributed to the superior qualities of the horses they owned and bred (Anonimous, 2026b).

Considering that the earliest records of horse racing in the Ottoman Empire date back to 1326, during the reign of Orhan Gazi, it can be stated that equestrian sports have been practiced by the Turks since ancient times. Some of the historically documented and well known equestrian activities include 'javelin', 'gökbörü' 'çöğen' games, and the 'oğlak' game. Furthermore, numerous handwritten veterinary manuscripts preserved in Istanbul libraries contain detailed information on equine diseases, management practices, and superior morphological characteristics (Anonimous, 2026a).

During the 19th century, the sport of javelin (traditional javelin on horseback) was one of the grandest games and ceremonial displays in the Ottoman Empire. Ottoman sultans ensured that each palace included or was built near a field suitable for playing javelin (Kahraman, 1995).

The Ottoman Empire marked a period when the foundations of modern horse breeding were firmly established. In the 14th century, horses bred in the Hayvanat Ocakları (animal husbandries) contributed greatly to the empire's military strength. With the establishment of the Republic of Türkiye, horse breeding and improvement programs were reorganized according to national needs, enabling the continued development of the equine sector (TİGEM, 2022).

During the Ottoman period, Hayvanat Ocakları focused on breeding horses, mules, and camels for military purposes. Crossbreeding was carried out using Arabian, Persian, and Moldavian horses. However, the decline of the empire and the wars led to a significant regression in horse breeding. (Bayram, 2022).

Horse breeding in Türkiye remains an activity of historical and cultural significance. For thousands of years, Turks have maintained a close relationship with horses, using them for transportation, agriculture, warfare, sport, and recreation. Today, the main breeds raised in Türkiye include the purebred Arabian horse and Thoroughbred horse. Horse breeding contributes not only to the economy but also to the social fabric of the country.

According to Turkish Statistical Institute (TÜİK, 2026) data, trends in horse numbers are shown below (Figure 1.)

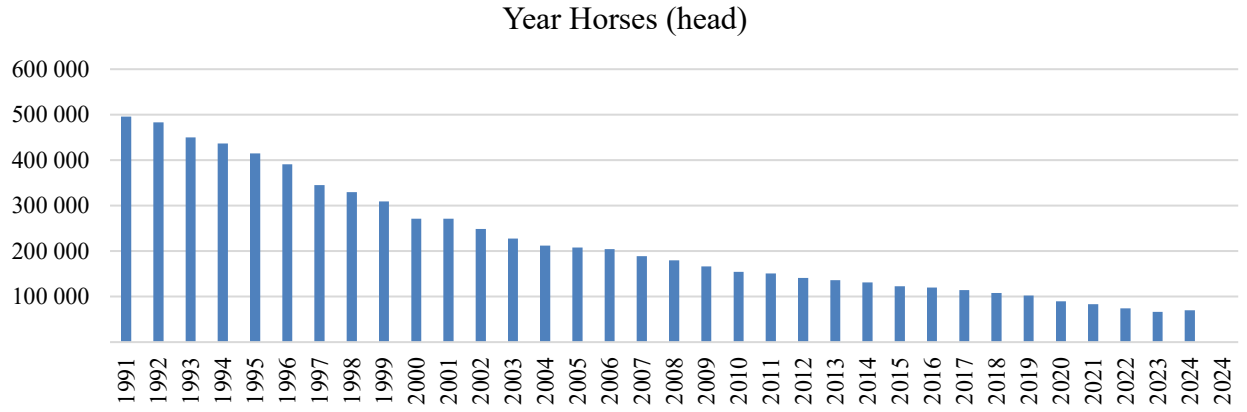


Figure 1. Horse population in Türkiye by year (TÜİK, 2026)

Figure 1 indicates that the number of horses in Türkiye has steadily decreased since 1991, falling below 100,000 by 2021. In 2024, it was determined that there were 70,630 horses.

The history of horse breeding in Türkiye extends back to the migrations of Turkic peoples from Central Asia. Upon settling in Anatolia, they brought with them their equestrian culture, which deeply influenced military, agricultural, and ceremonial life. During the Ottoman Empire, the government established official breeding centers to ensure a continuous supply of high quality cavalry horses. Arabian and Persian bloodlines were incorporated to enhance the local stock (Bayram, 2022).

After the industrial revolution, the mechanization of agriculture and transportation reduced the economic role of horses. However, the Republic of Türkiye maintained efforts to preserve purebred horses through the General Directorate of Agricultural Enterprises (TİGEM) and other state breeding farms. The focus gradually shifted toward developing sport and racehorses, primarily purebred Arabian and Thoroughbred horses (TİGEM, 2022).

Although Türkiye's total horse population has declined to under 100,000 (Alapala and Unal, 2024), traditional equestrian sports such as javelin, pacing, equestrian archery, horse-drawn sledding, and Gökbörü remain popular, particularly in regions like Erzurum, Uşak, and Kars. These cultural practices sustain a living connection to Türkiye's equestrian heritage.

Horse Breeding in Kazakhstan

The peoples of Kazakhstan have long revered the horse as one of the most valuable and indispensable animals. Horses occupy an honored place in the national epic and cultural heritage of the Kazakh people.

According to modern archaeological and hippological research, the domestication of the horse took place during the Neolithic and Bronze Ages on the territory of Eurasia, between the Syr Darya and Amu Darya rivers (V.O. Vitt, Horse Nations of Central Asia, 1937). Scholars suggest that the early horses of the steppe regions closely resembled the tarpan and the onager, whose herds once grazed freely across the vast grasslands of Kazakhstan. (Vitt, 1937).

The principal method of horse management among ancient nomads was the herd (tabun) system, characterized by year-round grazing under extensive steppe conditions.



Figure 2. Traditional Equestrian Javelin Tournament (Anonimous 2023).

A steady demand for horses both within the country and in external markets has long stimulated the growth of horse breeding, which has traditionally occupied a leading position among all branches of animal husbandry.

The potential for further development of horse breeding in Kazakhstan remains enormous. This is supported by the availability of 187 million hectares of natural pastures, as well as the centuries old experience of the Kazakh people in herd horse breeding. The Kazakh horse breed, distinguished by its unique biological characteristics, resilience to sharply continental climates, and high adaptability to local environmental conditions, produces valuable therapeutic and dietary products such as horse meat (kazy) and kumys. These features form the foundation for the sustainable development of Kazakhstan's traditional tabun (herd-based) horse breeding industry. (Kargayeva et al., 2022; Sharapatov et al., 2025; Toishimanov et al., 2025).

As of September 1, 2025, the total horse population in Kazakhstan amounts to approximately 4.5 million head. According to forecasts by researchers and industry experts, this number is expected to reach 10 million or more within the next 25 years.

It is believed that the modern Kazakh horse breed took its final form several millennia ago, acquiring its characteristic appearance and adaptive traits. The breed evolved under conditions of year-round herd (tabun) and tebenevka (forage digging from under the snow) management, which involved grazing throughout the year in open pastures. Historically, the Kazakh horse was a universal breed, equally suitable for riding, pack transport, and production purposes-providing both kumys (fermented mare's milk) and horse meat, valued for their nutritional and therapeutic properties. (Kargayeva et al., 2022; Sharapatov et al., 2025; Toishimanov et al., 2025).

During its formation, the Kazakh horse was influenced by Eastern argamak types, including the Akhal-Teke, Yomud, and Karabair breeds. In the 20th century, to further improve its performance, Kazakh breeders introduced Thoroughbred, Orlov Trotter, and Don horses, which contributed to enhancing the breed's exterior and working abilities.

The Kazakh horse gained wide recognition for its exceptional endurance, resistance to harsh climatic conditions, and ability to thrive year-round on natural pastures with minimal human intervention. On the basis of the Kazakh mare population, several new breeds have been developed: the Kostanay riding and harness breed (1951), the Kushum meat-and-milk breed (1976), the Mugalzhar meat-and-milk breed (1998), and most recently, the Adai long-distance racing breed (2023).

The unpretentiousness of Kazakh horses and their versatile adaptability have become the defining characteristics of the breed, genetically consolidated and preserved to the present day.

The history of the Kazakh horse and its evolution into an independent breed stretches back thousands of years and is deeply intertwined with the rich heritage of the Kazakh people and the socio-economic transformations that shaped their nomadic way of life. The breed's enduring popularity is primarily due to its remarkable adaptation to severe climatic and forage conditions, as well as its genetic ability to sustain itself year-round on natural pasture feeds.



Figure 3. Races of Adai Horses

These qualities, refined through centuries of natural and human selection, continue to define the Kazakh horse as one of the most resilient and valuable equine breeds of the Eurasian steppe. (Kargayeva et al., 2022; Sharapatov et al., 2025; Toishimanov et al., 2025).

Kazakhstan is widely regarded as one of the world's earliest centers of horse domestication. Archaeological discoveries from the Botai culture (ca. 3500–3000 BCE) provide evidence that horses were first tamed, milked, and ridden on the Kazakh steppe (Vitt, 1937). Horses have since been integral to the nomadic economy, supplying meat (kazy), milk (kumis), transportation, and even material for tools and clothing.

Throughout history, the tabun (herd) system where horses graze freely year round has shaped the biological and behavioral traits of Kazakh horses, producing animals highly resistant to climatic extremes. During the Soviet era, systematic breeding efforts produced specialized lines such as the Kushum, Mugalzhar, and Aday breeds, known for meat and milk production, endurance, and adaptability (Sharapatov et al., 2025).

In the modern era, Kazakhstan's horse population has rebounded, reaching approximately 4.5 million head as of 2025, with projections suggesting continued growth (Assanbayev et al., 2024). Horse meat and kumis industries have become major sectors of the rural economy, while equestrian sports such as baiga, kokpar, and kiz kuu have gained international recognition.

Comparative Analysis of Breeding Systems

Breeding Objectives and Practices

Türkiye and Kazakhstan maintain distinct breeding purposes shaped by environment and economy.

- In Türkiye, controlled breeding programs emphasize purebred and sport horses, focusing on performance, conformation, and aesthetic traits.
- In Kazakhstan, horse breeding retains a multipurpose and extensive nature, centered on meat, milk, and endurance, reflecting a continuation of traditional nomadic systems.

While Türkiye utilizes structured stud farms with artificial selection, Kazakhstan primarily employs natural selection under herd (tabun) management, which enhances resilience and ecological adaptation.

Main Horse Breeds

Horse breeding methods, provinces and general usage areas in Türkiye and Kazakhstan are summarized comparatively in Table 1.

Economic and Cultural Roles

In Türkiye, the economic role of horses is tied mainly to sports and tourism, including horse racing, equestrian sports, and cultural heritage events (TİGEM, 2022).

In Kazakhstan, horses remain fundamental to the rural economy. Horse meat is a valuable dietary and export product, while kumis is increasingly marketed for its therapeutic and probiotic properties (Toishimanov et al., 2025). Horses also hold deep symbolic meaning in Kazakh folklore, music, and national identity.

Environmental and Management Systems

Kazakhstan's vast 187 million hectares of natural pastures make herd based management ideal for large-scale breeding. Horses graze freely throughout the year, surviving on natural vegetation even under snow cover (Sharapatov et al., 2025).

In contrast, Türkiye's smaller and fragmented pasturelands necessitate semi intensive or stable-based systems, where horses are supplemented with concentrated feed and managed more closely for performance traits.

Population Dynamics

According to recent national statistics and FAO data:

- Türkiye's horse population has declined steadily since 1990, dropping from about 400,000 to under 100,000 by 2021. It was determined that the number of horses was 66,431 in 2023 and 70,630 in 2024. (TÜİK, 2026).
- Kazakhstan's horse population, conversely, has increased rapidly, reaching over 4.5 million by 2025 due to the expansion of the horse meat and kumis industries (Assanbayev et al., 2024).

Discussion

The comparative analysis of horse breeding in Türkiye and Kazakhstan reveals two distinct but complementary approaches shaped by historical, environmental, and socio economic factors. Türkiye's equestrian practices are largely sport and performance oriented, reflecting a shift from traditional cavalry roles to modern recreational, competitive, and ceremonial uses. Controlled breeding programs, focused on conformation, speed, and aesthetic qualities, ensure the preservation of elite bloodlines such as Thoroughbred. However, the decline in overall horse populations highlights challenges in sustaining equine heritage, particularly in the face of urbanization, mechanization, and rural depopulation.

Table 1. Horse breeding methods in Türkiye and Kazakhstan

Country	Main Breeds	Primary Use	Key Features
Türkiye	Arabian, Thoroughbred	Racing, sports, tradition	Refined conformation, agility, speed
Kazakhstan	Kazakh, Kushum, Aday, Mugalzhar, Zhabe	Meat, milk, endurance	Resilience, hardiness, climatic adaptation

Traditional equestrian sports such as javelin, pacing, equestrian archery, horse-drawn sledding, and Gökbörü; and dressage, show jumping, endurance, which are practiced under the auspices of the Turkish Equestrian Federation continue to reinforce cultural identity, providing both symbolic and economic value.

In Kazakhstan, the horse remains a cornerstone of rural livelihoods and cultural identity, with the tabun based herd management system preserving genetic diversity, resilience, and environmental adaptability. The Kazakh horse's multipurpose role providing milk, meat, transportation, and labor demonstrates an integrated approach to livestock management that balances ecological sustainability with economic utility. Specialized breeds such as Kushum, Mugalzhar, Adai, and Zhabe exemplify the results of both natural and selective breeding, optimized for endurance, milk productivity, and survival under harsh climatic conditions. Unlike Türkiye, Kazakhstan's equine population is expanding, driven by the growing domestic and international demand for kumis, horse meat, and equestrian tourism, reflecting the continued relevance of horses in economic and cultural terms.

The contrast between Türkiye's controlled, performance driven breeding and Kazakhstan's extensive, adaptive herd system underscores how geography, climate, and socio-economic priorities influence equine population management. Collaboration between the two countries in areas such as genomics, reproductive biotechnology, and pasture management could facilitate knowledge exchange, breed conservation, and the promotion of shared Turkic equestrian heritage on a global scale.

Conclusion

Horses in Türkiye and Kazakhstan occupy a central place in national history, culture, and economy, yet the two countries exhibit markedly different approaches to breeding and management. Türkiye emphasizes controlled, performance-focused breeding, supporting sport horses and the continuation of cultural equestrian traditions, whereas Kazakhstan prioritizes extensive, multipurpose herd management that promotes resilience, environmental adaptation, and rural livelihoods. Despite these differences, both nations recognize the horse as a vital cultural and biological asset.

The future of horse breeding in Türkiye and Kazakhstan depends on the integration of traditional knowledge with modern technologies, including genomic selection, reproductive biotechnologies, and sustainable pasture management. Such integration can ensure the conservation of local breeds, enhance productivity, and preserve cultural practices for future generations. Furthermore, continued research and international cooperation could strengthen both nations' capacities to maintain equine biodiversity and adapt breeding programs to changing climatic, economic, and social conditions. Ultimately, horses in Türkiye and Kazakhstan serve not only as practical livestock but also as enduring symbols of national identity, cultural continuity, and human environment interaction.

Declarations

Conflict of Interest

The authors declare no conflict of interest.

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