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Folkloric Practices Regarding Goat Diseases and Treatments Among Sarıkeçili Nomads

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ABSTRACT

Sarıkeçili nomads are known as important representatives of the nomadic lifestyle in Anatolia. Goats have an important place in these people's lives, and there are various folkloric practices for treating diseases observed in goats. The study aimed to contribute to the literature with folkloric data regarding the diseases and treatments of goats among Sarıkeçili nomads and to identify animal welfare problems. The research was conducted in Taşkent (Konya), one of the regions used as plateaus by Sarıkeçili nomads. The material consisted of folkloric information obtained through face-to-face interviews with nomads. Descriptive and content analysis methods were used in the analysis of the data. Folkloric data on treatments for fractures and dislocations, injuries, abscesses, agalactia, stomatitis aphthous epizootica, enterotoxemia, diarrhea, rumen tympany, poisoning, and internal parasites were obtained. With this study, it can be argued that recording the medications used by Sarıkeçili nomads in the treatment of animal diseases and their usage patterns is important for the protection of intangible cultural heritage, and these folkloric data are necessary and critical for identifying problems related to animal welfare.

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Sarıkeçili Yörüklerinde Keçi Hastalıkları ve Tedavilerine İlişkin Folklorik Uygulamalar

ÖZET

Sarıkeçili Yörükleri, konar-göçer yaşam tarzının Anadolu'daki önemli temsilcileri olarak bilinir. Keçiler bu insanların yaşamında önemli bir yere sahiptir ve keçilerde görülen hastalıkların tedavisine yönelik çeşitli folklorik uygulamalar bulunmaktadır. Çalışmanın amacı, Sarıkeçili Yörükleri arasında keçilerin hastalıkları ve tedavilerine ilişkin folklorik veriler ile literatüre katkı sağlamak ve hayvan refahı sorunlarını tespit etmektir. Çalışma, Sarıkeçili Yörükleri tarafından yayla olarak kullanılan bölgelerden biri olan Taşkent'te (Konya) gerçekleştirildi. Materyal, Yörükler ile yüz yüze görüşmeler yoluyla elde edilen folklorik bilgilerden oluştu. Verilerin analizinde betimsel ve içerik analizi yöntemleri kullanıldı. Kırık ve çıkık, yaralanmalar, apse, agalaksiya, şap hastalığı, enterotoksemi, ishal, rumen timpanisi, zehirlenmeler ve iç parazitler tedavilerine ilişkin folklorik veriler elde edildi. Bu çalışma ile Sarıkeçili Yörüklerinin hayvan hastalıklarının tedavisinde kullandıkları ilaçların ve kullanım şekillerinin kayıt altına alınmasının somut olmayan kültürel mirasın korunması açısından önemli olduğu ve bu folklorik verilerin hayvan refahı ile ilgili sorunların tespiti için gerekli ve kritik olduğu ifade edilebilir.

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INTRODUCTION

The term ethnoveterinary refers to traditional therapeutics prepared by humans for the purposes of maintaining or restoring animal health. Ethnoveterinary medicine dates back to ancient times, and records of this practice can be found in various cultures across the globe (Bartha et al., 2015). Folkloric practices are a common alternative in the treatment of animal diseases, and documentation of all these traditional practices is of great importance for the protection and utilization of biological resources (Alves et al., 2008; Erarslan & Kültür, 2019). While folkloric practices have positive aspects, such as contributing to the protection and preservation of local ecosystems, they also have negative aspects in terms of ecosystems (Anyınam, 1995). A similar situation arises when considering this situation from an animal welfare perspective. Although herbal compounds in folkloric veterinary medicine practices have several beneficial therapeutic properties (Davidović et al., 2011), these practices are not always compatible with animal welfare (Wanzala et al., 2005).

Like communities in different parts of the world, Türkiye also has an ethnoveterinary knowledge base that has been formed as a result of long-term interactions with nature. It is extremely important to protect this traditional knowledge, which is in danger of extinction if not given sufficient importance (Erarslan & Kültür, 2019). Some aspects of this knowledge are common and shared, while others are more localized and specific to certain communities (Wanzala et al., 2005). One of these communities is the nomads (Büyükşahin, 2017). Nomads live in a wide geography in Anatolia with their rich history and commitment to traditions. Their traditional way of life, arising from nomadism, cultural richness, and rituals that have become traditions, is our important element of Turkish culture. Religious, historical, geographical, social, and economic factors, which are also seen in other societies, have been effective in shaping nomadic culture and traditions. Nomads, who settled in Anatolia from Turkish tribes, have been living these teachings inherited from their ancestors for many years and have been passing them on from generation to generation (Akdu & Akdu, 2025).

Nomads who have lived on animal husbandry throughout their lives have many herds of goats and sheep. The methods used by the nomads in animal husbandry are the purest folkloric sources in this field in Türkiye (Dinçer, 1967). In this context, nomadic culture includes all elements of intangible cultural heritage areas that need to be protected (Kutlu, 2024). UNESCO has important studies on the protection of heritages that are considered intangible cultural heritage (Akdu & Akdu, 2025). In UNESCO's 1989 Recommendation (Özer, 2023), the first normative document on the protection of intangible cultural heritage, it is stated that "living folklore cannot always be protected directly because of its ever-changing character, and folklore that is fixed in a tangible form should be effectively protected" (UNESCO Turkish National Commission, 2025). The "Convention for the Safeguarding of the Intangible Cultural Heritage", adopted by UNESCO in 2003, aims to promote, protect and transmit cultural practices, expressions, knowledge and skills that communities, groups and in some cases, individuals consider part of their cultural heritage (UNESCO, 2025).

Nomadic Turks who live in groups in the overwinter and highland regions, engaged in animal husbandry, are called "nomads" (Seyirci, 2000). According to the Sarıkeçili nomads (Kutlu, 2024), who are seen as the last representative of the nomadic life tradition in Anatolia (Horzumlu, 2017; Kutlu, 2024) and are the most populous community that maintains a nomadic lifestyle, nomad is synonymous with the word Turk and refers to the people who live in black tents in both summer and winter seasons, and migrate with their goats and camels between places they call highlands in summer and overwinter areas in winter season (Horzumlu, 2017).

While some of the Sarıkeçili nomads coming from Central Asia adopted a settled life over time, some continued to live as nomads between the Mediterranean coasts and the Konya plateaus (Büyükşahin & Güneş, 2016). Today, when nomads are mentioned, nomadic communities engaged in animal husbandry in the Mediterranean Region and the Toros Mountains come to mind (Seyirci, 2000). Goats have an important place in the lives of Sarıkeçili nomads, whose livelihood is animal husbandry (Bazın, 1994). The fact that animal husbandry is at the center of their lives has enabled them to acquire treatment knowledge that has been going on for years and to pass on this knowledge to future generations (Aksoy, 2019).

Although previous studies on Sarıkeçili nomads (Aksoy, 2012; Dölek, 2013; Büyükşahin & Güneş, 2016; Büyükşahin, 2017; Aksoy, 2019) have included folkloric veterinary medicine, these studies have mostly been limited to describing traditional practices and have not been sufficiently associated with veterinary sciences. The aim of the study was to contribute to the richness of Turkish culture and to shed light on the studies in the field of veterinary sciences by introducing folkloric data on the diseases and treatments of goats in Sarıkeçili nomads, which have survived as a cultural value until today, to the literature.

MATERIAL and METHOD

Ethical Statement

This study was approved by the Selçuk University Faculty of Veterinary Medicine, Experimental Animal

Production and Research Center Ethics Committee (Approval no: 2025/82, Date: 07.05.2025).

Questionnaire Design, Data Collection, and Analysis

The field research of the study was carried out in the Taşkent highlands [Kösrelik (36°49'53" N, 32°41'26" E; altitude: 1750m), Kargaduzu (36°50'32" N, 32°39'26" E; altitude: 1650m), Tamla Pınarı/Taşkent (36°53'37" N, 32°26'48" E; altitude: 1900m)] and Taşkent Center (36°55'45" N, 32°29'42" E; altitude: 1600 m), which are among the regions used as highlands in Konya province during the summer by the Sarıkeçili nomads, who stay in the Silifke District of Mersin province in the winter and moved towards the upper parts of the Toros Mountains with the spring season (Figure 1). The research material consisted of written and/or audio folkloric information obtained through face-to-face interviews with nomads engaged in animal husbandry in the Taşkent district of Konya province from July 13 to July 20, 2024. Folkloric data were collected by asking 37 open-ended questions to the participants through the information compilation form.

Snowball sampling, a technique used to explain different phenomena by reaching from person to person and from person to situations, was used in the study (Baltacı, 2018). First, through the primary informants identified, other potential participants with folkloric knowledge were reached. Thanks to the snowballing method, those who are familiar with folkloric practices related to goat diseases and treatments, and who have many years of experience in cultural transmission processes, were interviewed. The average interview duration was recorded as approximately 52 minutes (min 38, max 68 minutes) (Table 1). Informed consent was obtained from all participants involved in the study.

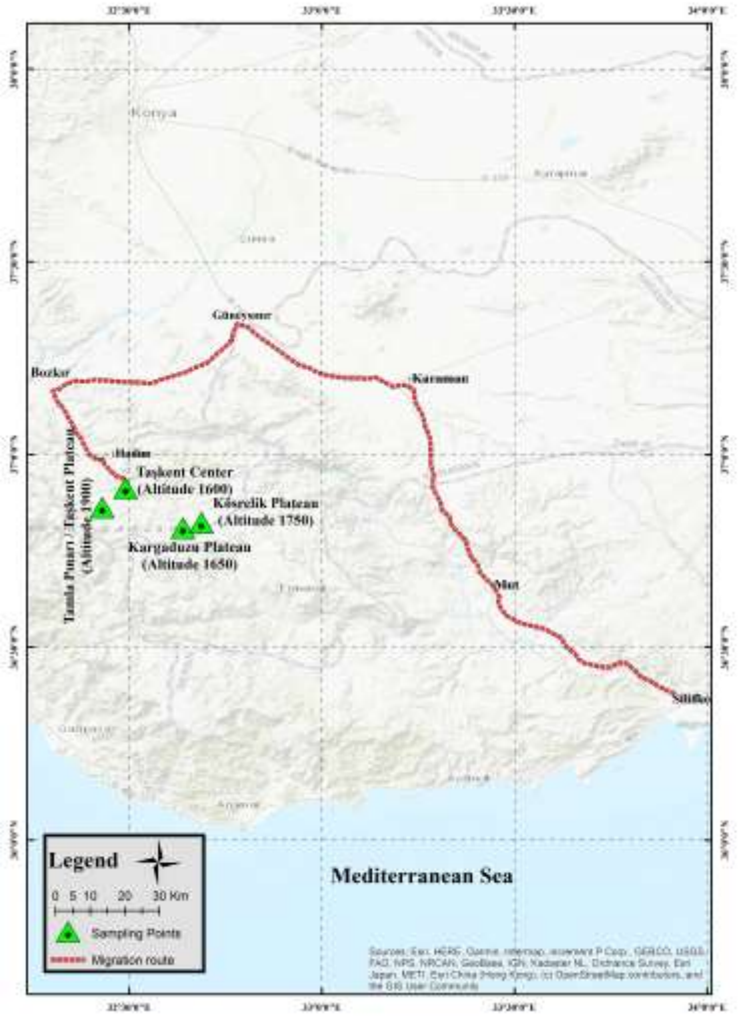

Figure 1. The red line on the map shows the traditional migration route of the Sarıkeçili nomads (Silifke → Taşkent), while the green symbols indicate the points where the fieldwork was carried out.

Şekil 1. Haritada kırmızı çizgi Sarıkeçili Yörüklerinin geleneksel göç yolunu (Silifke → Taşkent) gösterirken, yeşil semboller saha çalışmasının yapıldığı noktaları göstermektedir.

Descriptive and content analysis methods were used in the data analysis of this study, which is based on a qualitative research approach and has a field study design, by the qualitative research methods of Yıldırım and Şimşek (2021). The conceptual framework of goat diseases and treatments was determined through descriptive analysis, and the data were processed according to the thematic framework. The data were brought together and analyzed in depth within the framework of certain concepts and themes identified to be similar and related to each other through content analysis. Code numbers were used to indicate the participant. Code numbers (P1, P2, ..., P10) were numbered as superscripts at the end of each data point in the result section and were presented in detail in Table 1.

Table 1. Source person list
Çizelge 1. Kaynak kişi listesi

Participant's code	Participant's name	Participant's age	Participant's profession	Interviews date	Length of interview	Interviews location	Interviews location's altitude
P1	Recep Özdemir	33	veterinarian	July 14, 2024	50 min	Taşkent Center	1600 altitude
P2	Musa Yagal	43	breeder	July 20, 2024	48 min	Taşkent Center	1600 altitude
P3	Göksel Özkan	44	breeder /herder	July 20, 2024	52 min	Taşkent Center	1600 altitude
P4	Hasan Hüseyin Gültekin	56	driver	July 14, 2024	50 min	Taşkent Center	1600 altitude
P5	İsmahan Aslan	68	breeder	July 20, 2024	50 min	Kösrelik Plateau	1750 altitude
P6	Ali Aslan	73	breeder	July 20, 2024	62 min	Kösrelik Plateau	1750 altitude
P7	Hatice Akboğa	53	breeder	July 20, 2024	38 min	Kargaduzu Plateau	1650 altitude
P8	Mesut Akboğa	59	breeder	July 20, 2024	48 min	Kargaduzu Plateau	1650 altitude
P9	Ayşe Gök	43	breeder	July 13, 2024	57 min	Tamla Pınarı/Taşkent Plateau	1900 altitude
P10	İbrahim Gök	52	breeder	July 13, 2024	68 min	Tamla Pınarı/Taşkent Plateau	1900 altitude

The presence of Sarıkeçili nomads in the research area during certain periods and the interviews conducted with more experienced individuals regarding traditional knowledge transfer to prevent data repetition among family members constitute the limitations of this study.

RESULTS

The folkloric findings obtained from the interviews with Sarıkeçili nomads about goat diseases and treatments were presented under the following headings. The relationship between plants, minerals, and other substances used in folkloric practices and diseases was analyzed and presented in Table 2. In the study, revealed that tar (n=5, 15.15%) was the most commonly used substance for treating diseases, followed by Artemisia absinthium L. (n=3, 9.09%), Rhus coriaria L. (n=2, 6.06%), olive oil (n=2, 6.06%), pitch (n=2, 6.06%), and salt (n=2, 6.06%) were used in the treatment of various diseases (Table 2).

Disease symptoms in general: Sick animals do not eat/graze,[P1-3,P5-9] do not rumination,[P5] become feverish[P6] and lethargic,[P3,P7] stand in the shade and bow their heads,[P8] and lags behind the herd.[P1-3,P6,P9]

Fracture and dislocation: In the treatment of fractures, wood[P1,P4,P8], cardboard[P10] (Figure 2), pitch, felt, and tar[P1,P5] are generally used. Since fractures and dislocations are treated by immobilizing the area, pitch is often used as a plaster by heating[P6]. Different applications are made in fracture treatment: Felt is placed on the broken area and fixed with pieces of wood and wrapped with rope[P2,P6] or it is just wrapped with felt and kept for 15 days[P3]. Ghee is mixed with tar and salt and applied to the fractured area, a board is placed on it to fix and wrap it.[P7] First ghee and then tar are applied to the broken area, a board is placed on it to fix it with felt and left for 15-20 days.[P5] After the fracture is rubbed with honey, ghee, and salt, it is wrapped with cloth, and a board is placed on it to tie it with rope.[P8] After the fracture is wrapped with felt, tar is poured on it and wrapped again. In case of a segmental fracture, dog hair is placed on it, or tar is poured and wrapped.[P9]

Although similar applications are made to fracture treatment in dislocation cases, how these applications are made is expressed as follows: The dislocated area is rubbed with honey, ghee, and salt[P8] or just wrapped with honey[P7]. After the dislocated area is pulled and placed back in its place, it is wrapped with felt and both sides are fixed with a board and tied with rope and then kept for 15 days.[P10]

Figure 2. Stabilization of the fracture in the left hind extremity of a goat using a fixation method.[P10]
Şekil 2. Bir keçinin sol arka ekstremitesindeki kırığın fiksasyon yöntemi kullanılarak sabitlenmesi.[P10]

Wounds: The treatment and application vary depending on the area of the wound. The general applications made in wound treatment are as follows: In cut wounds, sumac or salt is applied to the area to prevent worms from forming. Dog hair is applied to the area to ensure that the wound edges come together.[P10] Vinegar is applied to the wounds at the corner of the mouth[P7] or crushed seed of Cuckoo-pint(*Arum maculatum L.*) is applied to the area.[P2]

Abscess: Abscesses were commonly called "tumor"[P3,P6,P8], "crack"[P3,P6] or "boil"[P10] and were generally believed to be caused by the evil eye. The treatment method varied depending on where the abscess formed. The materials and application methods used according to the type of treatment were as follows: In cases of an abscess in the eye, granulated sugar is put in the eye.[P2] Tar is applied to dry the pus in the abscess.[P10] In cases where the abscess does not burst on its own, the hot wire is inserted in, and it is washed after draining.[P3]

Agalactia: Agalactia is also known "rheumatic"[P2-3,P9] or "milk stopper"[P3,P9]. The symptoms and treatment of the disease were as follows: Joint swelling and limping[P2-3,P9-10] are observed. A loss in milk yield[P2-3,P9] and weight occurs[P2-3,P9-10]. Discoloration (take on a gray colour)[P2,P9,] and burring[P10] are observed in the eye. In the treatment, the madder root (*Rubia tinctorum*) decoction is prepared and administered orally.[P2,P10] The root of the Ceratocephalus falcatus is crushed with salt and fed.[P10]

Foot and mouth disease (Stomatitis Aphthosea Epizootica): Foot and mouth disease has the following symptoms as follows: Sores occur on the feet,[P1-3,P6-7,P9-10] between the nails,[P2,P6,P9] in the mouth,[P1-2,P6,P9-10,] and at the base of the teeth.[P2] The animal has difficulty standing on the ground[P6] and limps.[P1,P3]

The treatment options for this disease were as follows: Alum powder is applied to the sores in the mouth.[P10] Tar[P6] are applied to the sores on the feet, or the feet of sick animals are soaked in water mixed with copper sulphate and lime,[P7] and alum powder are applied to the feet[P9-10].

Enterotoxemia: The symptoms of this disease are as follows: Diarrhea,[P2] tremor,[P2,P9] high fever,[P9] swinging,[P2] eye shifting upwards[P9] and sudden death[P2] are observed. Treatment options for this disease varied as follows: Olive oil is drunk to reduce abdominal swelling.[P7] The ear tip is cut, and blood is drained, and a lemon is squeezed into sugar water and drunk.[P9] Feverish goats are dipped in cold water to normalize the fever.[P9]

Diarrhea: Practices for treatment in cases of diarrhea were quite limited. The current practices were as follows: Feed yogurt[P6], drink strong brewed tea[P6], or brewed *Artemisia absinthium L.*[P6]

Rumen tympany: Treatment options were as follows: Drink olive oil,[P7,P10] soda[P10] or boiled one leaf of *Artemisia absinthium L.*[P5]

Poisoning: The symptoms observed, and treatment options applied for snake and scorpion bites varied. The symptoms and the treatments were as follows: In snake bites, the eyes become red and the bitten area swells. The area bitten by the snake is burned or cauterized to prevent the spread of the poison.[P1,P6] For this reason, a 1 cm section from the front and back of the swollen area is cauterized with the help of a hot needle.[P2,P9-10] The bitten area is punctured or split with a needle/knife to allow the poison to flow out.[P1,P7,P9] The bitten area is cauterized with a hot iron.[P2-3,P6] Heated goat hair is put on the bitten area.[P7] Drink tar[P1] or apply it to the bitten area.[P10] If the area where the snake bites is unknown, the hairs in the area from the chin to the breast are burned, and the *Astragalus L.* is burned and smoked into the animal's nose.[P3] The *Eryngium campestre L.* is used for therapeutic purposes.[P2]

Ticks usually attach to the lower parts of the calf's chest, horns and tail[P10], and in these cases, treatment options are quite limited: The tip of the ear is cut to drain blood.[P3] Bitch is applied to the bitten area.[P1,P6,P10]

Internal parasite: Treatment for pinworms was quite limited: *Artemisia absinthium L.* is boiled and drunk to expel pinworms.[P2]

Injuries caused by wild animals: Livestock areas have been subject to wolf attacks, and injuries resulting from these attacks generally occur in the neck and abdomen.[P2,P3] If a hole formed in the neck as a result of the attack, no intervention was made because it was thought that healing would not be possible.[P2,P8] In general, the interventions determined for the treatment of injuries resulting from wild animal attacks were quite diverse: After applying tar, the injured area is heated, and then bandaged.[P2] A tar-soaked piece of cloth is applied or placed on the injured area.[P5] After the injured area is cauterized with a hot iron, taris applied.[P4,P9-10] The injured area is cauterized with a hot iron skewer, then mud is applied to it, and the cauterization process is repeated once more.[P6] The soil is heated and placed on the injured area.[P7] After the mud is rolled into a finger-length piece, it is heated in a fire with tar, and the area is cauterized with this.[P8] Boiled sumac leaves are warmly wrapped around the wound and kept on for two days to heal and close.[P3]

Table 2. Plants, minerals, and other substances used in folkloric practices for treating diseases in goats among the Sarıkeçili nomads

Çizelge 2. Sarıkeçili Yörüklerinde keçi hastalıklarının tedavisinde folklorik uygulamalarda kullanılan bitkiler, mineraller ve diğer maddeler

Utilized plants, minerals, and other substances	Usage	Areas of use	n (%)	Effect recorded in literature
Plants				
Artemisia absinthium L.	Oral, Infusion administration	Diarrhea, rumen tympany, internal parasite	3 (9,09)	Antimicrobial, antioxidant, anti-inflammatory, insecticidal, wound healing (Ali & Abbasi, 2013; Batiha et al., 2020)
Arum maculatum L.	Topical application	Wounds	1 (3,03)	Antioxidant and antimicrobial (Farahmandfar et al., 2019)
Astragalus L.	Inhalation administration	Poisoning	1 (3,03)	Immunostimulating, antibacterial, antiviral, anti-inflammatory, and diuretic (Öztaş & Öztaş, 2024)
Camellia sinensis L. (tea)	Oral, Infusion administration	Diarrhea	1 (3,03)	Antioxidant, regulating the gastrointestinal system (Sharangi, 2009)

Eryngium campestre L.*	-	Poisoning	1 (3,03)	Antibacterial, anti-inflammatory, antioxidant, antinociceptive, and antipyretic (Soumia, 2018)
Rhus coriaria L.	Topical application	Wounds, injuries caused by wild animals	2 (6,06)	Antibacterial (Elagbar et al., 2020; Joseph et al., 2023)
Root of the Ceratocephalus falcatus	Oral administration	Agalactia	1 (3,03)	Prugatif (Karaca et al., 2005)
Rubia tinctorum	Oral, Infusion administration	Agalactia	1 (3,03)	Antioxidant (Karataş, 2021)
Minerals				
Alum powder	Topical application	Foot and mouth disease	1 (3,03)	Hemostatic, astringent, and antiseptic (Sucu, 1991)
Copper sulphate	Topical application	Foot and mouth disease	1 (3,03)	Antiseptic (Sucu, 1991)
Granulated sugar	Topical application	Abscess	1 (3,03)	Antibacterial (Murandu et al., 2011)
Lemon	Oral, Infusion administration	Enterotoxemia	1 (3,03)	Antioxidant, anti-inflammatory, antioxidant (Rafique et al., 2020)
Lime	Topical application	Foot and mouth disease	1 (3,03)	Biocidal (Eryılmaz & Akın, 2008)
Pitch	Topical application, Oral, Infusion administration	Fracture and dislocation, poisoning	2 (6,06)	Antiseptic and antiparasitic (Baytop, 1999)
Salt	Topical application	Fracture and dislocation, wounds	2 (6,06)	Antiseptic (Shen et al., 2022)
Soda	Oral, Infusion administration	Rumen tympany	1 (3,03)	Intestinal motility (Horiyama et al., 2021)
Sugar	Oral, Infusion administration	Enterotoxemia	1 (3,03)	Antibacterial (Murandu et al., 2011)
Tar	Topical application, Oral, Infusion administration	Fracture, dislocation, abscesses, foot and mouth disease, poisoning, injuries caused by wild animals	5 (15,15)	Anti-inflammatory, antibacterial, antipruritic, and antimitotic (Roelofzen et al., 2007)
Vinegar	Topical application	Wounds	1 (3,03)	Antimicrobial (Gökırmaklı et al., 2019; Şengün & Kılıç, 2019)
Other substances				
Ghee	Topical application	Fracture and dislocation	1 (3,03)	Antibacterial, antioxidant (Tian et al., 2023)
Honey	Topical application	Fracture and dislocation	1 (3,03)	Antimicrobial, antiviral, anti-inflammatory, antioxidant (Karadal & Yıldırım, 2012)
Olive oil	Oral, Infusion administration	Enterotoxemia, rumen tympany	2 (6,06)	Reducing bloating, regulating the gastrointestinal system (Morvaridi et al., 2020)
Yogurt	Oral administration	Diarrhea	1 (3,03)	Regulates digestion (Pannerchelvan et al., 2024)
	Total		33 (100)	

n: Different usage areas, *The method of use is unknown

DISCUSSION

In this study, traditional folkloric information obtained regarding the symptoms and treatment methods applied in cases of illness or injury of the animals raised by Sarıkeçili nomads (Table 1), which is a cultural value, was analyzed. It was aimed to compare this knowledge obtained with the existing folkloric information, which is a cultural heritage from the past to the present, and to contribute it to the literature.

In folklore studies conducted in different regions of Anatolia (Sinmez, 2011; Yüksel, 2012; Kırmızı, 2015; Karasu, 2020; Çavuş Alan et al., 2021; Ersoy, 2021), it is reported that in the treatment of fractures in animals, mixtures such as tar; just eggs and salt; egg or salt with goat hair; eggs and flour; egg white and beeswax; ghee; ghee and mud are applied to the area and then fixed with a pieces of wood. In the study, tar was used in fractures, the fractured area was rubbed with honey, ghee and salt, felt was placed on it, fixed with a piece of board and bandaged, a mixture of "ghee, tar and salt" or a mixture of "ghee and tar" was applied on it, then the area was fixed with a piece of board and bandaged with felt. In cases of segmental fractures, dog hair was put or bandaged after tar was applied. So, it can be stated that these practices are similar to the folkloric methods in Anatolia and are empirical in general.

Organic acids in vinegar composition have an antimicrobial effect (Gökırmaklı et al., 2019; Şengün & Kılıç, 2019). The use of plants as therapeutic agents has been known since ancient times, and they have been used to treat diseases (Bozyel et al., 2019). One of these plants is sumac (*Rhus coriaria L.*), which has a long history in traditional medicine. Sumac has strong antibacterial activity (Yiğit, 2007; Saltan & Ünder, 2019; Elagbar et al., 2020; Joseph et al., 2023) (Table 2). However, sodium chloride (NaCl), or table salt, is a potent antiseptic (Shen et al., 2022). Yerlikaya (2002) states that vinegar is applied to the wounds in the mouths of animals; Sinmez (2011) states that the wound in the mouth is disinfected with salt and sugar, and vinegar and sumac are also applied; Özen (2021), Çavuş Alan et al. (2021), and Çavuş Alan and Özen (2021) report that sumac is widely used in wound treatment. In the study, it was determined that sumac or salt was applied to skin wounds to prevent worm infestation; vinegar was applied to the wounds that formed around the mouth. This is consistent with the above literature data. In addition, considering the antibacterial effect of vinegar and sumac and the antiseptic effect of salt, it can be stated that their use in wound treatment is rational and can provide supportive and complementary contributions to veterinary practices.

In the treatment of abscesses in animals, applying tar to the mature abscess (Avcı & Özen, 2016), using fresh beet leaves (Sinmez & Yaşar, 2017), and applying hot pine resin on abscesses in the hip and neck regions for a few days (Karasu, 2020) are used. After the mature abscess is drained, washing it with salt water (Karasu, 2020) and applying tar until it heals (Avcı & Özen, 2016) are among the folkloric knowledge that is a continuation of the treatment. There is also folkloric knowledge regarding the treatment of abscesses, such as cutting the area where the abscess is located and draining the pus inside (Kayhan & Karakaş, 2023) and cauterizing the abscess with a hot iron (Çavuş Alan et al., 2021). In the study, applying tar to dry the pus and applying granulated sugar to the eye in these cases are consistent with the research data showing that sugar beet (*Beta vulgaris L.*), in particular, has antioxidant and anti-inflammatory activity (Chakole et al., 2011) and therefore is a rational practice. In addition, in cases where the abscess does not burst on its own, the method of draining the pus by dipping a red-hot wire into it and then washing the area resembles the findings of the aforementioned folkloric studies. However, if these practices are not carried out correctly, they may lead to severe pain for the animal and increase its stress levels. It can also cause burns or permanent tissue damage that affects the area where the abscess is located and the surrounding healthy tissues. Furthermore, if sterile conditions are not maintained, opening the abscess may promote the spread of infection or additional complications, which could negatively impact animal welfare.

Sinmez and Yaşar (2016) stated that agalactia is also known as "milk stopper"; Yüksel (2012) stated that animals suffering from this disease have reduced milk yield, swollen udders and joints; Uysal (2008) reports that visual impairments begin in animals. In the study, it can be stated that the symptoms of these diseases include swelling in the joints, limping, weaning, weight loss, discoloration, and burring in the eyes, which have common folkloric characteristics. In addition to the above literature data, it can be said that the preference for plant-based medications, which are native to the place where they are grown and accessible in nature, the drinking of madder roots after boiling, and feeding the root of the *Ceratocephalus falcatus* after crushing with salt are the folkloric practices established in this region.

In foot and mouth disease, because of blistered sores that form around and inside the mouth, the animal has difficulty eating and chewing feed (Karasu, 2020); saliva flows from the mouth and the animal gradually becomes weaker (Yüksel, 2012); redness and swelling in the feet and difficulty in walking (Karasu, 2020). Alum powder (Dinçer, 1967; Kaptan, 2004; Sinmez, 2011; Ersoy, 2021), copper sulphate (Doğanay, 1982; Kutlu, 1987; Karasu, 2020), and tar (Seyirci, 2000; Avcı & Özen, 2016) are used to treat wounds caused by the disease in the mouth. In the treatment of feet and nails, tar is mixed with alum or oil and applied between the nails (Dinçer, 1967); the feet are washed with lime (Sinmez, 2011; Kayhan & Karakaş, 2023) or tar water (Yerlikaya, 2002); the copper sulphate is applied between the nails (Yerlikaya, 2002; Sinmez, 2011; Yüksel, 2012); alum powder is applied to the wound in powder or water form (Kurum, 2008; Aksoy, 2012; Yılmaz, 2012; Çavuş Alan et al., 2021). The study revealed findings of symptoms of this disease being similar, injuries to the feet, between the nails, at the base of the mouth and teeth, having difficulty stepping on the ground, and lameness due to injury to the feet. It can be stated that the application of alum powder to wounds in the mouth, the application of tar to wounds on the feet, the mixing of copper sulphate and lime in water, and then dipping the feet of the animals in this water and applying the alum powder to the feet are parallel to the folkloric literature data given above. In addition, considering the hemostatic, astringent, and antiseptic effects of alum (Sucu, 1991), it can be said that it is logical for Sarıkeçili nomads to use alum and copper sulphate in the treatment. In addition, it can be said that the observation of similar practices for the treatment of foot and mouth disease in other Nomads and Türkmen communities living in different regions of Turkey (Doğanay, 1982; Kutlu, 1987; Kaptan, 2004; Seyirci, 2000; Yılmaz, 2012) besides Sarıkeçili nomads may be related to the common animal husbandry practices brought about by the nomadic lifestyle and that this information is transmitted between communities through oral culture.

Tannic acid, which is present in the composition of tea, has an impact effect (Aydın & Üstün, 2007) and, in certain concentrations, is used in the treatment of gastrointestinal disorders such as diarrhea (Baldwin & Booth, 2022). *Artemisia absinthium L.* is also used in the treatment of digestive system diseases (Szopa et al., 2020). Yogurt benefits digestive health by alleviating diarrhea symptoms (Pannerchelvan et al., 2024). In folkloric studies, animals are given brewed strong tea (Dinçer, 1967; Yüksel, 2012; Özen & Doğan, 2017; Sinmez & Yaşar, 2017; Karasu, 2020; Çavuş Alan et al., 2021; Özen, 2021; İflazoğlu, 2023), *Artemisia absinthium L.* (Dinçer, 1967; Yüksel, 2012; Çavuş Alan et al., 2021), and yogurt (Kurum, 2008; Kardaş, 2019). In the study, it can be argued that giving strong tea and using *Artemisia absinthium L. and* feeding yogurt in the treatment of diarrhea are parallel to the literature data of veterinary medicine folklore, and that the practices are rational when the strong effect of tea and yogurt on the digestive system is considered.

Morvaridi et al. (2020) found that olive oil reduced bloating and improved gastrointestinal symptoms; Szopa et al. (2020) report that *Artemisia absinthium L.* is used in the treatment of digestive system diseases. In folkloric studies, it is reported that olive oil (Sinmez, 2011; Yüksel, 2012; Yiğit et al., 2015; Özen & Doğan, 2017; Karasu, 2020; Özen, 2021), soda (Sinmez, 2011; Yiğit et al., 2015; Karasu, 2020), and *Artemisia absinthium L.* (Yüksel, 2012) are given to treat abdominal swelling. While it can be stated in the study that giving olive oil and soda for rumen tympani is similar to the folkloric literature data, it can also be said that the practice is rational when the chemical structure of the *Artemisia absinthium L.,* whose leaves, after being boiled, is taken into consideration. In addition, it can also be stated that these traditional folkloric practices carried out by Sarıkeçili nomads are cultural knowledge passed down from generation to generation in Anatolia.

Baytop (1999) states that juniper bitch has antiseptic and antiparasitic effects; Duran (1998) reports that tar has antiseptic properties and is used against insects such as ticks and lice. Avcı and Özen (2016) stated that to protect the animals from external parasites, tar is applied to the area where the parasite is seen; Yaşar et al. (2015) and Alptekin (2019) reported that tar is applied in cases of tick infestation; Yiğit et al. (2015) reported that blood is taken from the ears in tick-borne poisonings. It can be said that the practices of cutting the ear tip and draining the blood in tick bites and applying tar to the bitten areas are parallel to the literature data. However, it can also be stated that the folkloric use of tar, whose antiseptic effect has been scientifically proven, is very close to rational methods of external parasite treatment by the Sarıkeçili nomads.

Dinçer (1967) reported that in cases of snakebite, cauterizing the area or letting out a lot of blood have been known and practiced treatment methods since ancient times; Yerlikaya (2002) and Kardaş (2019) also reported that methods such as letting out blood and cauterizing the area are still practiced; Avcı and Özen (2016) reported that the animal's nose, udder and between its hind legs are cauterized and tar is applied to these areas, and that it is made to smell and drink tar; İflazoğlu (2023) reported that a knife is cut into the area bitten by the snake and the blood/poison is drained. Büyükşahin and Güneş (2016) stated that Sarıkeçili nomads heat the tip of a metal rod wrapped with burlap sack over fire to open a hole in the area where the snakebite is located, and that the iron bar is heated over fire and the area around the swollen area is cauterized with red-hot iron, and that this practice prevents the poison from spreading to the surroundings. Bağcı and Keskin (2022) state that fresh leaves of the bull thorn plant are used by wrapping them on the wound in snakebites. In the study, it can be stated that in case of snakebite in goats, cauterizing 1 cm front and back of the snakebite area with a hot skewer or iron to prevent the poison from spreading, piercing/splitting the swollen area with a needle/knife, applying tar to the area or making the animal drink tar, and using the bull thorn plant for treatment purposes are similar to the practices given in the literature. Furthermore, it can be argued that the cauterization procedure may lead to neglect of animal welfare, such as a lack of pain management and delayed healing.

The Artemisia absinthium contains phenolic acids and flavonoids (Cruz-Estupiñan et al., 2025). Băieş et al. (2024), Batiha et al., (2020), and Cruz-Estupiñan et al. (2025) reported that *A. Absinthium* has the potential to treat gastrointestinal parasitosis. In the study, it can be said that the boiled *Artemisia absinthium L.* is given to expel pinworms, and that the use of *Artemisia absinthium L.,* whose antiparasitic effect has been scientifically proven, is close to rational methods.

Folkloric practices in particular will require further research and careful evaluation, since it is a well-known fact that many herbal, animal, and mineral medicines used in traditional settings can cause serious side effects (De Smet, 1991; Alves & Rosa, 2005). On the other hand, although animal ranchers are competent in applying the techniques they adopt, analgesics and anesthetics are not used, causing pain and suffering to the animals (Masiga & Munyua, 2005). *Artemisia absinthium*, used in the treatment of various ailments, has bioactive components including flavonoids, phenolic acids, terpenoids, and essential oils (Alsaleh et al., 2024). These components enable the plant to have antioxidant, antifungal, antimicrobial, anthelmintic, antiulcer, anticarcinogenic, hepatoprotective, neuroprotective, antidepressant, analgesic, immunomodulatory, and cytotoxic effects (Batiha et al., 2020; Sharifi-Rad et al., 2022). Studies have shown that long-term use of this plant causes some neurotoxic effects due to the presence of thujone and its analogs, and in high doses, it causes central nervous system disorders, intestinal cramps, and vomiting (Batiha et al., 2020). Another plant, *Arum maculatum L.,* from the Araceae family is a plant known for its medicinal applications and various phytochemical properties. Has proven effects on wound healing (Kareem & Khamees, 2024). Has various traditional uses such as antimicrobial (Uzun et al., 2004; Kurt, 2024), antihypertensive, antirheumatic, analgesic, and antidiabetic (Ergene & Karaaslan, 2023; Kareem & Khamees, 2024). The toxic components present in the chemical structure of Arum maculatum reveal the severity of its biological effects; therefore, it has the potential to cause unpredictable consequences (Aslan et al., 2024). Oxalate crystals and some other components in the plant, such as cyanogenic glycosides, volatile amines, alkaloids, etc., cause all parts of the fresh plant to be toxic (Ergene & Karaaslan, 2023; Kareem & Khamees, 2024). The saponin oxalates they contain irritate the mouth, tongue, and throat and cause swelling in the throat, difficulty breathing, burning, and stomach discomfort (Raju et al., 2018). Can be toxic to the gastrointestinal and respiratory tract of some animals, causing mucosal irritation, hypersalivation, vomiting, abdominal pain, diarrhea, and dehydration. The level of toxicity depends on the amount of insoluble calcium oxalate crystals, the ripeness of the fruit, and the localization of the plant (Peterson & Talcott, 2012). Therefore, it is very important to apply a special process in the preparation of the medication (Ergene & Karaaslan, 2023). The chemical composition of tar includes acids, phenols, and aromatic hydrocarbons, and its toxicity is strongly related to its chemical composition (Ninich et al., 2022). While tar has antibacterial (Arnold, 1997; Takci et al., 2020), anti-inflammatory, antipruritic, and antimitotic effects (Roelofzen et al., 2007), it may cause carcinogenic effects in high concentrations and long-term use (Arnold, 1997). In the present study, *Artemisia absinthium*, *Arum maculatum L.,* and tar were used in the treatment of various diseases (Table 2). It can be stated that Artemisia absinthium may show neurotoxic effects when used in high doses, Arum maculatum may cause serious toxicity in the gastrointestinal and respiratory systems due to the insoluble calcium oxalate crystals it contains, and tar may negatively affect animal welfare by causing local irritation and damage to the epithelial tissue when applied excessively or incorrectly through the skin. As mentioned above, when considering the benefits and side effects of plants or other materials used in folkloric veterinary medicine, it can be said that the dosage and duration of use of the substances used should be taken into consideration, and long-term, incorrect or excessive use may adversely affect the since it can lead to problems that directly affect animal welfare, it can be said that it is important to evaluate it in a controlled and knowledge-based manner.

CONCLUSION

As a result, among the traditional treatment methods used by Sarıkeçili nomads for diseases seen in goats, there are generally rational practices that are compatible with scientific data, but empirical methods continue to exist. It can be stated that plants such as sumac, Artemisia absinthium L., Arum maculatum L., and Eryngium campestre L. used in treatments are important in terms of their potential as a source of new medication research, and some areas need to be researched in terms of veterinary medicine in the treatment of diseases seen in goats. This study is pioneering folkloric research that evaluates traditional practices in terms of animal welfare. It can be suggested that the folkloric data obtained in the study are necessary and critical for identifying problems related to animal welfare, and that future folklore studies should also be considered in terms of animal welfare. In addition, it can be argued that with this study, recording the medications used by Sarıkeçili nomads to treat animal diseases and the way they are used is important to protect cultural heritage. And it can be suggested that these elements, which are important for preserving cultural diversity, strengthening the transfer of knowledge between generations, and increasing recognition at national and international levels, should be included in the intangible cultural heritage inventory.

Contribution Rate Statement Summary of Researchers

AY have designed the study. EMD and EÇ, study collected the data. EMD, EÇ and AY analyzed, prepared original draft, wrote-reviewed & edited. All authors read and approved the final manuscript.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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