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ARAŞTIRMA MAKALESİ **RESEARCH PAPER**

Botanical Composition and Pasture Quality Assessment of Sıraköy Pasture in Çamlıhemşin (Rize, Türkiye)

Muhammed İkbal ÇATAL*
Recep Tayyip Erdoğan University, Faculty of Agriculture, Department of Field Crops, Rize, Türkiye.

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*: https://orcid.org/0000-0002-4888-770X

***Corresponding author's:**
Muhammed İkbal ÇATAL
Recep Tayyip Erdoğan University, Faculty of Agriculture, Department of Field Crops, Rize, Türkiye.
✉: muhammed.catal@erdogan.edu.tr

Abstract: This study investigated the botanical composition and quality status of Sıraköy pasture area in Çamlıhemşin district of Rize province. Field studies were conducted in July 2023 and 2024, coinciding with the full flowering period of the vegetation. Analyses revealed that the total soil coverage was 81.65%. When the botanical composition was analyzed according to soil coverage, Poaceae accounted for 27.96%, Fabaceae 17.61% and other families accounted for a significant 54.42%. The dominant taxa detected were *Poa pratensis* (5.68%) from Poaceae, *Trifolium canescens* (6.24%) from Fabaceae and *Sibbaldia parviflora* var. *parviflora* (3.98%) from other families. Despite the high vegetation cover, the quality of the pasture was determined as "Poor" with a quality rating of 3.19. These findings highlight the urgent need for targeted management interventions to improve the pasture's botanical composition and overall health. Future studies should focus on identifying the specific taxa within the "other families" category and evaluating their nutritional value to develop effective rehabilitation strategies for similar degraded pasturelands.

Keywords: Botanical composition, Çamlıhemşin, pasture quality, Rize.

Çamlıhemşin (Rize, Türkiye) Sıraköy Merasının Botanik Kompozisyonu ve Mera Kalitesinin Değerlendirilmesi

***Sorumlu yazar:**
Muhammed İkbal ÇATAL
Recep Tayyip Erdoğan Üniversitesi, Ziraat Fakültesi, Tarla Bitkileri Bölümü, Rize, Türkiye.
✉: muhammed.catal@erdogan.edu.tr

Öz: Bu çalışmada, Rize ili Çamlıhemşin ilçesinde bulunan Sıraköy mera alanının botanik kompozisyonu ve kalite durumu araştırılmıştır. Arazi çalışmaları, vejetasyonun tam çiçeklenme dönemine denk gelecek şekilde 2023 ve 2024 yıllarının Temmuz aylarında yürütülmüştür. Sonuçlar, toplam toprağı kaplama oranının %81,65 olduğunu ortaya koymuştur. Toprağı kaplama alanına göre botanik kompozisyon incelendiğinde, Poaceae %27,96, Fabaceae %17,61 ve diğer familyalar önemli bir oran olan %54,42'yi oluşturmuştur. Tespit edilen baskın taksonlar arasında Poaceae'den *Poa pratensis* (%5,68), Fabaceae'den *Trifolium canescens* (%6,24) ve diğer familyalardan *Sibbaldia parviflora* var. *parviflora* (%3,98) bulunmaktadır. Yüksek bitki örtüsü kaplamasına rağmen, meranın kalitesi 3,19 kalite derecesi ile "Zayıf" olarak belirlenmiştir. Elde edilen bulgular, mera alanının botanik kompozisyonunu ve genel sağlığını iyileştirmek için acil ve hedef odaklı yönetim müdahalelerine duyulan ihtiyacı ortaya koymaktadır. Gelecekte yapılacak çalışmalar, "diğer familyalar" kategorisindeki spesifik taksonları belirlemeye ve benzer bozulmuş mera alanları için etkili ıslah stratejileri geliştirmek amacıyla besin değerlerini değerlendirmeye odaklanmalıdır.

Anahtar Kelimeler: Botanik kompozisyon, Çamlıhemşin, mera kalitesi, Rize

INTRODUCTION

Türkiye's unique geographical location and diverse topography lead to its division into three major phytogeographical regions: Mediterranean, Euro-Siberian, and Irano-Turanian (Akdeniz, 2009). Each of these regions possesses distinct climatic and soil conditions, fostering diverse vegetation and rich floristic biodiversity. Recent research indicates the presence of approximately 12,000 plant taxa in Türkiye, accompanied by a high rate of endemism.

In Türkiye, meadows and pastures meet an estimated 68% of the annual crude protein needs and 62% of the starch requirements for livestock (Babalık & Sarıkaya, 2015). Meadow and pasture areas are crucial not only for fulfilling animal nutritional requirements but also for serving vital ecological functions such as being genetic reservoirs and promoting biological diversity (Carlier et al., 2005).

Furthermore, they play a significant role in soil conservation by providing protection against erosion.

However, prolonged practices of early and excessive grazing, coupled with a lack of proper maintenance and improvement efforts, have resulted in diminished forage yields and degraded vegetation cover in Turkish pasturelands (Yavuz & Sürmen, 2016; Sürmen & Kara, 2018). It is imperative to rehabilitate these degraded pastures, restoring their capacity for high-quality and productive forage output. To achieve this, region-specific vegetation studies are essential for enhancing the yield potential of pasture areas. According to Türk et al. (2003), vegetation surveys and measurements are utilized to gather qualitative and quantitative data regarding the characteristics of unknown meadow and pasture vegetation.

Building on the existing body of research concerning the botanical composition and pasture status in Rize and its surrounding provinces (Baykal et al., 2020; Bakoğlu et al., 2021a; Baykal et al., 2021; Bakoğlu et al., 2021b), this study focuses specifically on the Sıraköy Aşağıköy pasture area within the Çamlıhemşin district of Rize. This research comprehensively identifies the plant families and species present in these crucial pasturelands. Furthermore, we determine key parameters including the soil cover rate, botanical composition, pasture quality degree, and pasture status class of the vegetation. The insights derived from these findings are essential for guiding the necessary conservation and development strategies for these valuable pasture ecosystems.

MATERIAL AND METHOD

Study Area: This research was carried out in 2023 and 2024 in Sıraköy pasture area located in Çamlıhemşin district of Rize province. The region is located at an altitude of approximately 2250 meters above sea level (40° 48′ 13″ N, 40° 55′ 03″ E) and is 131 km from Rize city center and 38 km from Çamlıhemşin district center. The location of the study area is given in Figure 1.

Material and Method: Fieldwork was conducted in July 2023-2024, coinciding with the full flowering period of the vegetation. The study's material comprised plant samples collected from the pasture areas. For each taxon, three plant specimens were collected, dried, and mounted on cardboard following the herbarium rules outlined by Erik et al. (1996). The prepared plant samples are currently preserved at Recep Tayyip Erdoğan University, Faculty of Agriculture. Identification procedures were carried out using authoritative floristic works, namely *Flora of Turkey and the East Aegean Islands* (Davis, 1965-1985; Davis et al., 1988) and Güner et al. (2000). Family, taxon, and author names were specified according to Güner et al. (2012), and checked against the Euro+Med Plant Base (2020) data system.

The characteristics of the pasture vegetation were determined using the Lup method. This method involved establishing a 20 m long Lup line with measurements taken at 20 cm intervals. A total of 100 Lup values were recorded along this line, and the plant taxa present within each Lup value were documented using a measuring ruler. Subsequently, all organs of the plants falling within each Lup were collected and identified.

Measurements were performed along 10 sub-lines within each of 5 main lines, as suggested by Tosun (1968). The proportions of plant species covering the soil were calculated by dividing the areas of vegetation determined by Lup measurements by the total area (Gökkuş et al., 1993). The forage value of each plant species was assessed based on criteria specified by Gökkuş et al. (1993) and Bakoğlu (1999), and according to a -1 to 10 point scale presented by Anonymous (2008). These scores were then multiplied by the total proportional value of each plant species to establish the pasture quality grade. The obtained pasture quality grade was interpreted based on the pasture condition classification developed by De Vries et al. (1951) (0.0-2.0: Very Poor, 2.1-4.0: Poor, 4.1-6.0: Moderate, 6.1-8.0: Good, 8.1-10.0: Very Good).

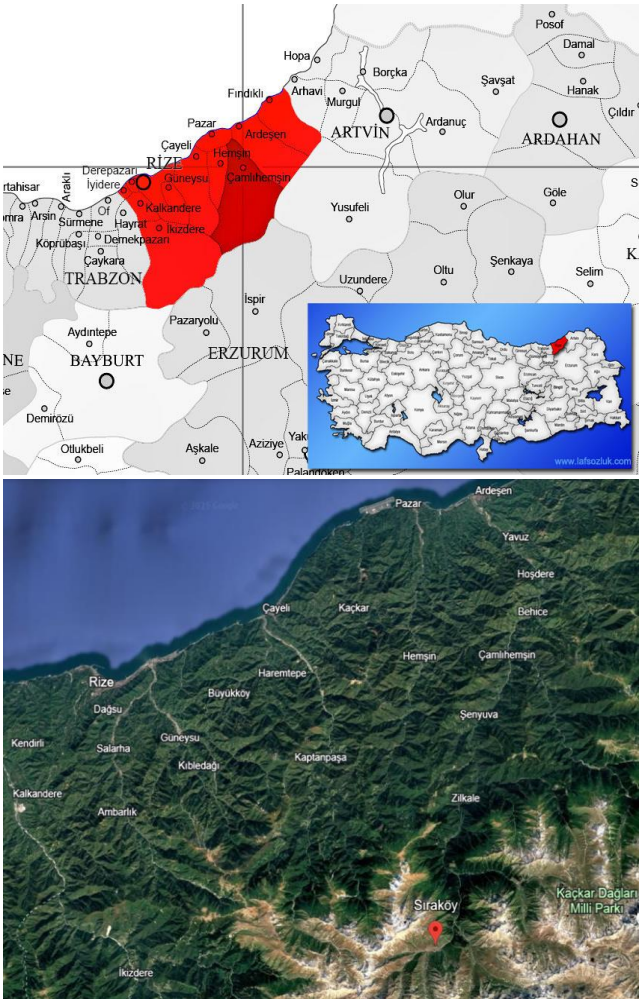

Figure 1. Location of the study area.

RESULTS AND DISCUSSION

Plant species identified within the study area, along with their respective families, soil cover rates, botanical composition rates, and pasture quality degrees, are presented in Table 1. The proportional contributions of each family to both soil cover and botanical composition are further visualized in Figure 2.

Table 1. Families, taxa, soil cover and botanical composition ratios, pasture quality degrees of the plants found in Sıraköy pasture area.

	Family	Taxon	VN	SCR	BCR	PQD
	Poaceae					
1	Poaceae	*Agrostis gigantea* Roth	7	0.75	0.91	0.06
2	Poaceae	*Alopecurus arundinaceus* Poir.	6	0.85	1.05	0.06
3	Poaceae	*Briza minor* L.	1	0.40	0.48	0.00
4	Poaceae	*Bromus japonicus* Thunb. subsp. *japonicus*	6	1.35	1.66	0.10
5	Poaceae	**Festuca cyllenica* Boiss & Heldr. subsp. *uluana* Markgr.-Dann.	7	0.60	0.73	0.05
6	Poaceae	*Festuca pratensis* Huds.	8	0.85	1.03	0.08
7	Poaceae	*Nardus stricta* L.	3	4.80	5.89	0.18
8	Poaceae	*Phleum alpinum* L.	4	0.35	0.42	0.02
9	Poaceae	*Poa annua* L.	5	4.10	5.02	0.25
10	Poaceae	*Poa pratensis* L.	7	4.65	5.68	0.40
11	Poaceae	*Poa alpina* L. subsp. *fallax* F. Herm.	5	4.15	5.08	0.25
		Total		**22.85**	**27.96**	**1.46**
	Fabaceae					
1	Fabaceae	*Astragalus oreades* C. A. Mey.		0.90	1.11	0.00
2	Fabaceae	*Lathyrus rotundifolius* Willd. subsp. *miniatus* (M.Bieb. ex Steven) P. H. Davis	8	0.00	0.00	0.00
3	Fabaceae	*Securigera orientalis* (Mill.) Lassen var. *balansae* (Boiss.) Keskin	3	1.35	1.60	0.05
4	Fabaceae	*Trifolium ambiguum* M. Bieb.	7	2.40	2.93	0.21
5	Fabaceae	*Trifolium canescens* Willd.	7	5.10	6.24	0.44
6	Fabaceae	*Trifolium pratense* L. var. *pratense*	8	3.90	4.81	0.38
7	Fabaceae	*Vicia cracca* L. subsp. *Cracca*	8	0.75	0.92	0.07
		Total		**14.40**	**17.61**	**1.15**
	Other Families					
1	Amaryllidaceae	*Allium schoenoprasum* L.	3	0.10	0.12	0.00
2	Apiaceae	*Astrantia maxima* Pallas subsp. *maxima*	-1	0.15	0.19	0.00
3	Apiaceae	*Bupleurum falcatum* L. subsp. *polyphyllum* (Ledeb.) Wolff	0	0.40	0.49	0.00
4	Apiaceae	*Carum meifolium* (M. Bieb.) Boiss.	0	0.00	0.00	0.00
5	Apiaceae	*Chamaesciadium acaule* (M. Bieb.) Boiss.	3	0.45	0.55	0.02
6	Asparagaceae	*Ornithogalum oligophyllum* E. D. Clarke	0	0.65	0.80	0.00
7	Asteraceae	*Taraxacum stevenii* DC.	5	0.45	0.54	0.03
8	Asteraceae	**Psephellus appendicigerus* (K. Koch) Wagenitz	0	0.00	0.00	0.00
9	Asteraceae	*Achillea latiloba* Lebed ex Nordm.	0	0.45	0.54	0.00
10	Asteraceae	*Antennaria dioica* (L.) Gaertn.	0	0.35	0.43	0.00
11	Asteraceae	*Carduus adpressus* C. A. Mey.	0	0.00	0.00	0.00
12	Asteraceae	*Cirsium kosmelii* (Adams) Fisch. ex Hohen.	0	0.00	0.00	0.00
13	Asteraceae	*Cota triumfetti* (L.) J.Gay ex Guss.	0	0.40	0.48	0.00
14	Asteraceae	*Crepis paludosa* (L.) Moench	1	0.50	0.62	0.01
15	Asteraceae	*Cyanus nigrifimbrius* (K.Koch) Soják	0	0.35	0.42	0.00
16	Asteraceae	*Erigeron acris* L. subsp. acris	1	0.10	0.12	0.00
17	Asteraceae	*Helichrysum graveolens* (M. Bieb.) Sweet	0	0.30	0.37	0.00
18	Asteraceae	*Lactuca racemosa* Willd.	2	0.15	0.18	0.00
19	Asteraceae	*Lapsana communis* L. subsp. *intermedia* (Bıeb.) Hayek	4	0.45	0.56	0.02
20	Asteraceae	*Pilosella cymosa* (L.) F.W. Schultz & Sch. Bip.	2	0.00	0.00	0.00
21	Asteraceae	*Tanacetum macrophyllum*(Waldst. & Kit.) Sch. Bip.	3	0.15	0.19	0.01
22	Asteraceae	*Tripleurospermum caucasicum* (Willd.) Hayek	1	0.35	0.43	0.00
23	Asteraceae	**Tragopogon aureus* Boiss.	3	0.00	0.00	0.00
24	Boraginaceae	*Asperugo procumbens* L.	-1	0.15	0.19	0.00
25	Boraginaceae	*Huynhia pulchra*(Roem. & Schult.) Greuter & Burdet	0	0.50	0.60	0.00
26	Boraginaceae	*Myosotis sicula* Guss.	0	0.25	0.31	0.00
27	Brassicaceae	*Alyssum murale* subsp. *murale* Waldst. & Kit. var. *alpinum* Boiss ex Nyar.	0	0.20	0.24	0.00
28	Brassicaceae	*Capsella bursa-pastoris* (L.) Medik.	3	0.00	0.00	0.00
29	Brassicaceae	*Cardamine impatiens* L. subsp. *impatiens*	0	0.20	0.25	0.00
30	Brassicaceae	*Draba hispida* Willd.	0	0.70	0.85	0.00
31	Brassicaceae	*Draba nemorosa* L.	2	0.35	0.43	0.01
32	Brassicaceae	*Rorippa sylvestris* (L.) Bess. subsp. *sylvestris*	0	0.20	0.25	0.00
33	Campanulaceae	*Campanula aucheri* A. DC. .	0	0.00	0.00	0.00
34	Campanulaceae	*Campanula collina* Sims	0	0.70	0.84	0.00
35	Caprifolaceae	*Cephalaria gigantea* (Ledeb.) Bobrov	5	0.25	0.30	0.02
36	Caprifolaceae	*Scabiosa caucasica* M. Bieb.	2	0.75	0.91	0.02
37	Caryophyllaceae	*Arenaria serpyllifolia* L. subsp. *cassia* (Boiss.) Govaerts	2	0.40	0.50	0.01
38	Caryophyllaceae	*Cerastium cerastoides* (L.) Britton	6	0.75	0.93	0.06
39	Caryophyllaceae	*Gypsophila silenoides* Rupr.	2	0.20	0.24	0.00
40	Caryophyllaceae	*Silene odontopetala* Fenzl	1	0.15	0.19	0.00
41	Celastraceae	*Parnassia palustris* L.	0	0.25	0.30	0.00
42	Colchicaceae	*Colchicum speciosum* Steven	0	0.00	0.00	0.00
43	Cyperaceae	*Carex atrata* subsp. *atrata*	1	0.85	1.03	0.01
44	Cyperaceae	*Carex atrata* L. subsp. *aterrima* (Hoppe) Hartm.	1	0.60	0.74	0.01
45	Cyperaceae	*Carex oligantha* Steudel	3	0.15	0.19	0.01
46	Ericaceae	*Rhododendron luteum* Sweet	-1	1.25	1.53	-0.02
47	Ericaceae	*Vaccinium myrtillus* L.	3	1.15	1.42	0.04
48	Gentianaceae	*Gentiana pyrenaica* L.	0	0.70	0.87	0.00
49	Gentianaceae	*Gentiana gelida* M. Bieb.	0	0.35	0.42	0.00
50	Gentianaceae	*Swertia iberica* Fisch. ex C. A. Mey.	5	0.15	0.18	0.01
51	Geraniaceae	*Geranium psilostemon* Ledeb. .	2	0.25	0.30	0.01
52	Lamiaceae	*Ajuga orientalis* L.	0	1.00	1.22	0.00
53	Lamiaceae	*Nepeta nuda* L.	0	0.30	0.38	0.00
54	Lamiaceae	*Prunella vulgaris* L.	2	1.05	1.27	0.03
55	Lamiaceae	*Salvia verticillata* L. subsp. *verticillata*	2	0.15	0.19	0.00
56	Lamiaceae	*Scutellaria pontica* K. Koch.	3	0.35	0.43	0.01
57	Lamiaceae	*Stachys macrantha* (K. Koch.) Stearn.	2	1.20	1.47	0.03
58	Liliaceae	*Lilium ponticum* K. Koch.	0	0.15	0.19	0.00
59	Orchidaceae	*Dactylorhiza euxina* (Nevski) H. Baumann & Künkele var. *euxina*	2	0.45	0.56	0.01
60	Orobanchaceae	*Euphrasia pectinata* Ten.	0	0.35	0.42	0.00
61	Orobanchaceae	*Pedicularis comosa* L. var. *acmodonta* (Boiss.) Boiss.	-1	1.00	1.23	-0.01
62	Orobanchaceae	*Rhinanthus angustifolius* C.C.Gmel.	-1	1.55	1.92	-0.02
63	Plantagınaceae	**Papaver lateritium* K. Koch subsp. *lateritium*	0	0.10	0.12	0.00
64	Plantagınaceae	*Veronica gentianoides* Vahl	1	1.05	1.29	0.01
65	Plantagınaceae	Digitalis ferruginea L. subsp. schischkinii (Ivanina) Werner	-1	0.60	0.74	-0.01

	Family	Taxon	VN	SCR	BCR	PQD
66	Polygalaceae	*Polygala vulgaris* L.	1	1.00	1.23	0.01
67	Polygonaceae	*Polygonum alpinum* All.	2	0.30	0.36	0.01
68	Polygonaceae	*Polygonum bistorta* L. subsp. *carneum* (K. Koch) Coode & Cullen	1	1.55	1.93	0.02
69	Polygonaceae	*Polygonum cognatum* Meissn.	5	0.55	0.66	0.03
70	Polygonaceae	*Rumex scutatus* L.	0	0.20	0.25	0.00
71	Primulaceae	*Androsace intermedia* Ledeb.	0	0.70	0.87	0.00
72	Primulaceae	*Primula algida* Adams	6	0.60	0.73	0.04
73	Primulaceae	*Primula auriculata* Lam.,Tabl.	3	1.05	1.30	0.04
74	Ranunculaceae	*Anemone narcissiflora* L. subsp. *narcissiflora*	0	0.85	1.04	0.00
75	Ranunculaceae	*Aquilegia olympica* Boiss.	0	0.65	0.80	0.00
76	Ranunculaceae	*Delphinium flexuosum* M.Bieb. var. *buschianum* (Grossh.) Parsa	-1	0.15	0.18	0.00
77	Ranunculaceae	*Ranunculus constantinopolitanus* (DC.) d'Urv.	-1	0.55	0.67	-0.01
78	Ranunculaceae	**Ranunculus dissectus* M. Bieb. subsp. *huetii* (Boiss.) P.H. Davis	-1	0.75	0.95	-0.01
79	Ranunculaceae	*Thalictrum minus* L. var. *minus*	-1	0.65	0.79	-0.01
80	Resedaceae	*Reseda lutea* L. var. *lutea*	2	0.40	0.50	0.01
81	Rosaceae	*Alchemilla retinervis* Buser	0	0.85	1.03	0.00
82	Rosaceae	*Potentilla crantzii* (Cruntz.) Fritsch	0	0.80	0.98	0.00
83	Rosaceae	*Potentilla recta* L.	1	0.30	0.36	0.00
84	Rosaceae	*Sanguisorba minor* L. subsp. *minor*	7	0.60	0.72	0.05
85	Rosaceae	*Sibbaldia parviflora* Willd. var. *parviflora*	1	3.25	3.98	0.04
86	Rosaceae	*Sorbus aucuparia* L.	0	0.10	0.12	0.00
87	Rubiaceae	*Cruciata laevipes* Opiz	0	0.90	1.11	0.00
88	Rubiaceae	*Galium album* Mill. subsp. *prusense* (K. Koch.) Ehrend & Krendl	1	0.30	0.37	0.00
89	Salicaceae	*Salix caucasica* Andersson	4	0.25	0.31	0.01
90	Scrophulariaceae	*Scrophularia nodosa* L.	2	0.10	0.13	0.00
91	Solanaceae	*Hyoscyamus niger* L.	-1	0.10	0.12	0.00
92	Thymelaeaceae	*Daphne glomerata* Lam.	0	0.20	0.25	0.00
93	Urticaceae	*Urtica dioica* L. subsp. *dioica*	2	0.00	0.00	0.00
94	Violaceae	*Viola altaica* Ker.-Gawl subsp. *oreades* (M. Bieb.) W. Becker	3	0.20	0.24	0.01
		Total		**44.40**	**54.42**	**0.58**
		GENERAL TOTAL		**81.65**	**100.00**	**3.19**

*: Endemic, VN: Value Number, SCR: Soil Cover Ratio, BCR: Botanical Composition Ratio, PQD: Pasture Quality Degree.

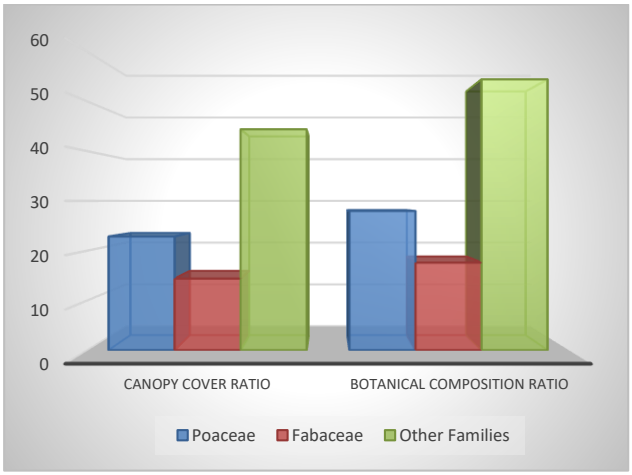

Figure 2. Soil Cover and Botanical Composition Rates (%) of Families.

Analysis of Table 1 reveals that the pasture under investigation exhibits an overall soil cover rate of 81.65%. Within this, Poaceae accounts for 22.85%, Fabaceae for 14.40%, and other families contribute 44.40%. When considering the botanical composition based on soil cover, the proportions are 27.96% for Poaceae, 17.61% for Fabaceae, and 54.42% for other families, respectively. The pasture quality degree was determined to be 3.19, classifying the pasture's condition as "Poor". Among the plant species found in the botanical composition of the studied pasture, *Poa pratensis* (5.68%) from Poaceae, *Trifolium canescens* (6.24%) from Fabaceae, and *Sibbaldia parviflora* var. *parviflora* (3.98%) from other families represent the most dominant taxa.

A comprehensive study of the pasture revealed a rich botanical diversity, identifying a total of 112 taxa. The most prominent families were Poaceae with 11 taxa and Fabaceae with 7 taxa. The remaining 94 taxa were distributed among various other families. Specifically, these included: Amaryllidaceae (1), Apiaceae (4), Asparagaceae (1), Asteraceae (17), Boraginaceae (3), Brassicaceae (6), Campanulaceae (2), Caprifoliaceae (2), Caryophyllaceae (4), Celastraceae (1), Colchicaceae (1), Cyperaceae (3), Ericaceae (2), Gentianaceae (3), Geraniaceae (1), Lamiaceae (6), Liliaceae (1), Orchidaceae (1), Orobanchaceae (3), Plantaginaceae (3), Polygalaceae (5), Primulaceae (3), Ranunculaceae (6), Resedaceae (1), Rosaceae (6), Rubiaceae (2), Salicaceae (1), Scrophulariaceae (1), Solanaceae (1), Thymelaeaceae (1), Urticaceae (1), and Violaceae (1). Furthermore, the investigated pastureland is home to several endemic taxa, namely *Festuca cyllenica* subsp. *uluana*, *Psephellus appendicigerus*, *Tragopogon aureus*, *Papaver lateritium* subsp. *lateritium*, and *Ranunculus dissectus* subsp. *huetii*.

Comparing these results with existing literature, this resarch overall soil cover rate of 81.65% is notably higher than that reported by Faretörbay (2007) for Erzurum Palandöken (39%) and Babalık and Ercan (2018) for Karaören village, Eskişehir (51.2%). However, it is comparable to findings by İspirli et al. (2016) in Kastamonu (average 83.34%) and Uzun et al. (2016) in Bartın (average 93.57%), suggesting regional variations in vegetation cover. The relatively high soil cover in this study may indicate favorable local conditions or management practices compared to some other areas.

In terms of botanical composition, this study found Poaceae contributing 27.96% and Fabaceae 17.61% based on soil cover. While Poaceae remains a significant component, its proportion in this study is lower than the 56.28% reported by Fayetörbay (2007), 63.51% by Babalık and Sarıkaya (2015), 46.19% by Bilgin and Özalp (2016), and 63.51% by Babalık and Sarıkaya (2015). Similarly, Sürmen and Kara (2018) found Poaceae at 37.09% and Çınar et al. (2019) at 36.9%. This suggests that while

grasses are present, they are not as overwhelmingly dominant in this study area compared to some other Turkish pasturelands. Conversely, this Fabaceae contribution of 17.61% is higher than Fayetörbay (2007) (10.47%), Babalık and Sarıkaya (2015) (16.39%), Bilgin and Özalp (2016) (14.36%), and Sürmen and Kara (2018) (4.24%), but similar to Çınar et al. (2019) (22.0%). This higher proportion of legumes could be beneficial for nitrogen fixation and overall pasture quality, although further analysis is needed. The 'other families' group represents a substantial portion (54.42%) in this study, which is higher than most comparative studies, such as Fayetörbay (2007) (33.31%), Babalık and Sarıkaya (2015) (20.10%), and Bilgin and Özalp (2016) (39.45%). However, it is lower than Çaçan and Başbağ (2016) (61.52%) and Sürmen and Kara (2018) (58.67%). This indicates a diverse herbaceous flora beyond the dominant grass and legume families, which might contribute to ecosystem stability but could also suggest a higher presence of less palatable or desirable species depending on their specific composition.

Regarding pastureland quality, this determination of "Poor" with a quality degree of 3.19 aligns with several studies that also classified their pasturelands as "Poor", such as Çınar et al. (2019) with quality degrees ranging from 2.40 to 3.92, Baykal et al. (2024a) in Ulutaş neighborhood (3.59), Çatal et al. (2024) in Çayırözü neighborhood (2.98), and Baykal et al. (2024b) in Yedigöller region (2.17). This consistently low rating across various studies in Türkiye suggests a widespread issue regarding pastureland degradation. While some studies reported "Moderate" (Faretörbay, 2007; İspirli et al., 2016; Uzun et al., 2016) or even "Good" and "Very Good" conditions (İspirli et al., 2016; Uzun et al., 2016) for certain pastures, the prevalence of "Poor" classification highlights the urgent need for effective pastureland management and improvement strategies in the country. The dominant species identified in this study, *Poa pratensis*, *Trifolium canescens*, and *Sibbaldia parviflora* var. *parviflora*, represent species commonly found in pasturelands, with the presence of legumes like *Trifolium canescens* generally indicating some forage value, despite the overall poor quality rating. The relatively high proportion of *Sibbaldia parviflora* var. *parviflora* (an "other family" member) may contribute to the lower overall quality if its forage value is limited compared to preferred species.

In conclusion, the pastureland investigated in this study exhibits a relatively high overall soil cover but is characterized by a "Poor" quality rating, consistent with many other pasturelands across Türkiye. The botanical composition shows a notable contribution from other families alongside Poaceae and Fabaceae, highlighting the need for a nuanced understanding of their ecological roles and forage value. The prevalence of "Poor" pastureland conditions in multiple studies underscores the necessity for targeted interventions, such as improved grazing management, fertilization, and species introduction, to enhance the productivity and ecological health of Turkish pasturelands.

CONCLUSION

This study aimed to assess the botanical composition and pasture quality of Sıraköy pasture area through a comprehensive field study conducted in July 2023-2024 during the full flowering period of the vegetation. A robust data set was established using the loop method and detailed plant identification procedures.

The findings indicate that the investigated pasture exhibits a relatively high overall soil cover of 81.65%. While Poaceae and Fabaceae represent significant components of the botanical composition with soil cover contributions of 27.96% and 17.61% respectively, the "other families" group constitutes the largest proportion at 54.42%. This suggests a diverse, yet potentially unmanaged, herbaceous flora. Notably, *Poa pratensis* (5.68%), *Trifolium canescens* (6.24%), and *Sibbaldia parviflora* var. *parviflora* (3.98%) were identified as the most dominant taxa, providing insights into the key species shaping the pasture's current structure.

Despite the substantial soil cover, the pasture's quality degree was determined to be 3.19, classifying its condition as "Poor." This classification highlights a significant discrepancy between the physical cover of the vegetation and its ecological or economic value. The prevalence of "other families" and the specific dominant species, while contributing to cover, may not be optimally suited for high-quality forage or overall pasture health.

In conclusion, the pastureland examined in this study, despite having good physical coverage, is in a "Poor" state in terms of quality. These results underscore the urgent need for targeted management interventions to improve the botanical composition and overall health of this pasture. Future research should focus on identifying specific "other family" taxa and evaluating their palatability and nutritional value to develop effective rehabilitation strategies for similar degraded pasturelands.

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