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A Review of the Traditional Plant use Culture in Elazığ (Turkey)

Nahit Yerebasan[1*] Engin Kırçıl[2], Melike Sultan Yıldırım[3], Aysun Çakılcıoğlu[4], Vildan Deniz[5], Deniz Demirkıran[6]

[1]*Elazig Directorate of National Education, Elazığ 23100, Turkey, orcid.org/0000-0002-6768-7738*
[2]*Elazig Directorate of National Education, Elazığ 23100, Turkey, orcid.org/0000-0002-9447-2804*
[3]*Elazig Directorate of National Education, Elazığ 23100, Turkey, orcid.org/0000-0002-4134-2571*
[4]*Elazig Directorate of National Education, Elazığ 23100, Turkey, orcid.org/0000-0002-0637-7533*
[5]*Elazig Directorate of National Education, Elazığ 23100, Turkey, orcid.org/0000-0002-6943-1373*
[6]*Aydın Directorate of National Education, Aydın 09100, Turkey, orcid.org/0000-0002-3011-6210*
**Corresponding author: nyerebasan@gmail.com*

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Abstract

The number of plants is quite high as different types of climate and rich geographical and geological features are seen in Turkey. Wild plant use culture has been enriched as Anatolia is the host of many civilizations. From past to present, people have used the plants grown around them for various purposes. The branch of science that examines this use is ethnobotany. Wild plants are used by people in fields such as medical, food, veterinary, equipment, musical instruments, handicrafts, dyes, fuel, ornaments and toys. In this study, ethnobotanical studies in Elazığ, which is located in the Eastern Anatolia Region, were examined. In the examination made within the scope of the study, it was determined that a total of 21 studies were made, including 17 articles with ethnobotanical content and 4 undergraduate and graduate theses. In the ethnobotanical studies conducted in Elazığ, the use for the treatment of various diseases was observed to be more common, however the use of plants for food purposes, use for the treatment of animal diseases and the use of plants for dye was recorded.

Key words: Wild plants, Ethnobotany, Elazığ, Turkey, Traditional use

1. Introduction

Plant diversity is quite high due to geomorphological structure, geographic location and different types of climate seen in Turkey. The number of plants in Turkey is around 12,000. Approximately 30% of these plants are endemic (Davis, 1965–1985; Davis et al., 1988; Güner et al., 2000; Özhatay et al., 2009; 2011). In terms of the number of endemic plant species, the Eastern Anatolia region takes the second rank after the Mediterranean region (Erik and Tarıkahya, 2004).

Ethnobotany, which is the combination of the words "ethnos" (means folk) and "botane" (means plant) in Greek, is a science that traditionally examines the relationship between humans and plants (Balick and Cox, 1999; Ertuğ, 2004).

Botanical studies have considerably increased in recent years (Polat et al., 2016; Vitek et al., 2017; Çakılcıoğlu et al., 2018; Selvi et al., 2019; Uruç Parlak and Çakılcıoğlu, 2019; Erecevit Sönmez and Çakılcıoğlu, 2020; Erecevit Sönmez et al., 2020; Zengin et al., 2021). People use plants mainly for medical and food purposes, as well as in fields such as musical instruments, household appliances, handicrafts, dyes, fuel, ornaments, toys and veterinary.

Most ethnobotanical studies in the Eastern Anatolia Region were conducted in Elazığ (Polat et al., 2012). Therefore, studies with ethnobotanical content conducted in Elazığ have been reviewed. In this study, the traditional plant uses in ethnobotanical studies conducted in Elazığ were tried to be evaluated numerically and the uses of some important plants were compiled.

2. Material and Methods

The study area was located on the east of Anatolian diagonal, in the skirts of South-Eastern Taurus Mountains (Çakılcıoğlu et al., 2008), in the upper Euphrates Region of the Eastern Anatolia Region (Şengün, 2007). Elazığ (Fig. 1) belongs to the Iran-Turan Plant Geography Region and falls within the B7 grid square according to the Grid classification system developed by Davis (Davis, 1965–1985). Elazığ's population is 591.098 as of the date of 2019 (http://www.tuik.gov.tr/UstMenu.do?metod=temelist).

This review was conducted by browsing the ethnobotanical studies conducted in Elazığ via various journal archives and the internet. In this context, various books, theses and articles were addressed. The presentations which were performed at the congresses but were not published in the form of a full text were not included in the study. The plant diversity in these studies was analyzed numerically and those with intensive use were investigated. Tables have been prepared in line with this data. Pictures of some plants are provided.

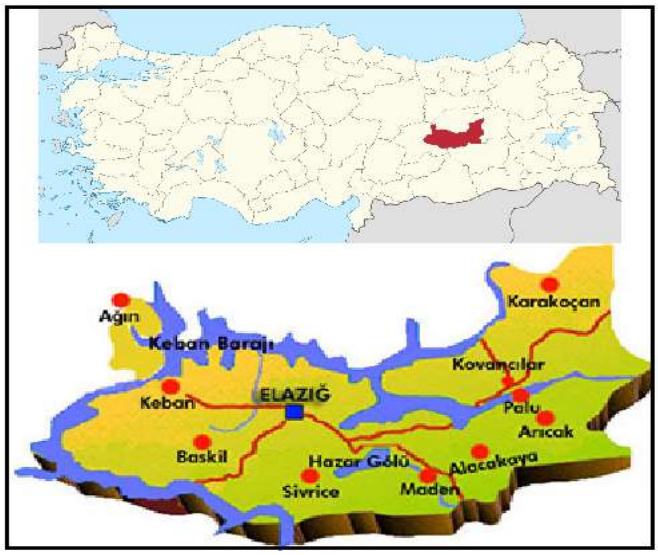

Figure 1. Research area.

3. Results and Discussion

Interest in ethnobotanical studies has increased in recent years. 21 ethnobotanical studies conducted in Elazığ were identified (Table 1, 2).

Table 1. Ethnobotanical studies in the region.

No	Researcher	Field of study	Type of study	Results
1	Civelek and Türkoğlu, 2000	Elazığ	Medicinal plant	65 medicinal plants have been recorded.
2	Cakilcioglu and Turkoglu, 2010	Sivrice (Elazığ)	Medicinal plant	A total of 81 medical plants belonging to 32 families.
3	Çakılcıoğlu et al., 2010	Yurtbaşı-Yazıkonak (Elazığ)	Medicinal plant	A total of 41 medical plants belonging to 17 families were identified
4	Cakilcioglu et al., 2011	Maden (Elazığ)	Medicinal plant	A total of 88 medical plants belonging to 41 families were identified
5	Çakılcıoğlu and Türkoğlu, 2009	Çitli Lowland (Elazığ)	General Ethnobotanical	19 medicinal plants, 17 plants for food purposes, 1 plant for other uses have been recorded.
6	Çakılcıoğlu and Türkoğlu, 2007	Elazığ	Medicinal plant	34 medicinal plants used to reduce high levels of cholesterol in the blood have been recorded.
7	Çakılcıoğlu and Türkoğlu, 2008	Elazığ	Medicinal plant	26 medicinal plants belonging to 16 families used for passing a kidney stone have been recorded.
8	Çakılcıoğlu et al., 2007	Harput (Elazığ)	Medicinal plant	98 medicinal plants have been recorded.
10	Tonbul and Altan, 1991	Elazığ	General Ethnobotanical	17 plants used for ethnobotanical purposes have been recorded.
11	Polat et al., 2015	Elazığ	Food plans	62 plants for food purposes have been recorded.
12	Hayta et al., 2014	Elazığ	Medicinal plant	74 medicinal plants have been recorded.
14	Doğan and Bağcı, 2011	Elazığ	General Ethnobotanical	51 uses for medicinal products, 22 for nutrients, 27 for animal feeds, 2 dyes and 7 for various purposes have been recorded.
15	Civelek et al., 2000	Elazığ	General Ethnobotanical	36 plants used for ethnobotanical purposes have been recorded.

16	Yerlikaya, 2002	Elazığ	Ethnoveterinary	Various plants used in animal diseases have been recorded.
17	Özen and Doğan, 2017	Elazığ	Ethnoveterinary	59 plants used in animal diseases have been recorded.

Most of the medicinal plant studies in the Eastern Anatolia Region were carried out in Elazığ (Polat et al., 2012). A total of 187 medicinal plants were recorded in ethnobotanical studies conducted around Maden and Sivrice districts, Harput, Yurtbaşı and Yazıkonak towns and Çitli Lowland (Çakılcıoğlu et al., 2007; Civelek et al., 2000; Civelek and Türkoğlu, 2000; 2001; Çakılcıoğlu and Türkoğlu, 2009; Çakılcıoğlu and Türkoğlu, 2010; Çakılcıoğlu et al., 2010; 2011; Türkoğlu, İ., Civelek, Ş. 2001).

There are records of traditional plants used for some diseases in Elazığ. There are 36 plants for lowering high levels of cholesterol, 18 plants for hemorrhoids, 26 plants for kidney diseases, 39 plants for diabetes mellitus (Çakılcıoğlu and Türkoğlu, 2007; Çakılcıoğlu and Türkoğlu, 2007a; Çakılcıoğlu and Türkoğlu, 2007b; Çakılcıoğlu and Türkoğlu, 2008).

Endemic plants called *Scorzonera semicana* DC., *Thymus haussknechtii* Velen; *Anthemis wiedemanniana* Fisch. and Mey., *Bunium paucifolium* DC. var. *brevipes* (Freyn & Sint.) Hedge & Lam., *Tchihatchewia isatidea* Boiss., are used for medicinal purposes in the studies carried out in Sivrice and Maden (Elazığ) (Çakılcıoğlu and Türkoğlu, 2010; Çakılcıoğlu et al., 2011).

The most used plants are *Urtica dioica* L., *Thymus haussknechtii* Velen, *Mentha spicata* L. subsp. *spicata, Malva neglecta* Wallr., *Rosa canina* L., *Hypericum perforatum* L., *Rheum ribes* L., *Rubus discolor* Weihe & Nees, *Portulaca oleracea* L. in the study conducted in Sivrice (Çakılcıoğlu et al., 2010) and *Mentha spicata* L. subsp. *spicata, Rosa canina* L., *Urtica dioica* L., *Bellis perennis* L., *Fragaria vesca* L., *Malva neglecta* Wallr., *Rheum ribes* L. and *Thymus haussknechtii* Velen. in the study conducted in Maden (Çakılcıoğlu et al., 2011).

The number of studies on plants used for food purposes in Elazığ is less than the number of studies on medicinal plants. Some studies are only those in which wild plants for food purposes have been recorded.

Some plant species traditionally used by the people during the spring and summer seasons are sold in the district bazaars in Elazığ. The most sold plants were Pirpirim (*Portulaca oleracea* L.), Işkın (*Rheum ribes* L.), Kenger (*Gundelia* sp.), Gullik (*Eremurus spectabilis* Bieb.), Alıç (*Crataegus* sp.), Nane (*Mentha* sp.), Kekik (*Thymus kotschyanus* Boiss. & Hohen. and *Thymus haussknechtii* Velen.), Badem (*Prunus dulcis* Mill.), Madımak (*Polygonum cognatum* Meissn.). These plants may be bought from the bazaars but may be collected from nature by the people.

Pirpirim (*Portulaca oleracea* L.) is collected from the sides of the field during summer. It is consumed as a soup, a meal with rice or a meal with yoghurt.

Işkın (*Rheum ribes* L.), is collected from the slopes of the mountains during the spring and sold in the bazaars (Figure 2). The stem of the plant is peeled and eaten fresh and is consumed as a meal with eggs. R. ribes is used to lower the cholesterol (Çakılcıoğlu et al., 2011; Güneş and Özhatay, 2011).

The plant *Gundelia* L. is called Kenger (Figure 3). The Kenger is collected in that region during the spring and consumed fresh, the above-ground parts are cooked and eaten, and its latex is chewed like chewing gum. Kenger has been used extensively for food and medicinal purposes around the World and in Turkey (Polat et al., 2017; Nadiroğlu et al., 2019; Cádiz-Gurrea et al., 2020; Kawarty et al., 2020; Çakılcıoğlu, 2020).

Gullik (*Eremurus spectabilis* Bieb.), is a plant sold in local bazaars during the spring. The plant is cooked and consumed as a meal (Figure 4).

Alıç (*Crataegus* sp.) is collected during autumn and consumed as a fruit (Figure 5). There is also a food company that makes yellow hawthorn vinegar in Elazığ (Çakılcıoğlu and Taşkan, 2020). Undergraduate and graduate studies with ethnobotanical content have been carried out in Elazığ (Table 2).

Figure 2. *Rheum ribes* L. (Işgın) (Polat et al., 2012).

Figure 3. *Gundelia tournefortii* L. (Kenger) (Polat et al., 2012).

Figure 4. *Eremurus spectabilis* Bieb. (Gullik) (Polat et al., 2012).

Figure 5. *Crataegus* sp. (Alıç).

Table 2. Thesis made in the region which contains ethnobotany.

Researchers	Research area	Type of thesis	Results
Karlıdağ, 2009	Elazığ - Tunceli	Undergraduate	Information on local names of 53 plants and their uses were provided.
Türkoğlu, 2000	Elazığ	Master thesis	251 plants of ethnobotanical value were identified.
Olgun, 2019	Arıcak	Master thesis	Information on local names of 138 plants and their uses are provided.
Özkan, 1983	Elazığ	Undergraduate	Folk remedies in and around Elazığ have been researched.

When the ethnobotanical studies conducted in Elazığ were examined, a questionnaire generally was applied to the interviewees (Cakilcioglu and Turkoglu, 2010; Cakilcioglu et al., 2010). In this questionnaire, the local names of the plants, the parts of the plants, the methods of preparing the same and their medical uses were recorded.

In recent studies, it is seen that the information is statistically calculated using FIC (informant consensus factor) and UV (use value) calculations (Cakilcioglu and Turkoglu, 2010; Cakilcıoglu et al., 2011). Publications containing the statistical calculations were performed for the first time in Turkey.

4. Conclusion

In this study, Elazığ, where the most ethnobotanical studies were conducted in the Eastern Anatolia Region, was examined. When the ethnobotanical studies conducted in Elazığ were examined, it was determined that 21 article and thesis studies were carried out. Studies on medicinal plants are intense. Other studies include traditional uses for food purposes, wild plants used in veterinary, plants used to obtain dyes and uses for various purposes.

We think that there is a decrease in plant use culture due to the easy accessibility of health services throughout Anatolia, migration from rural areas to large settlements, and the decrease in natural areas. We have the opinion that the field studies should be done and recorded in places where ethnobotanical field studies are not conducted.

Conflicts of Interests

Authors declare that there is no conflict of interests

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