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# ABOUT *LAMIACEAE* IN THE FERGANA VALLEY ON THE TAXONOMY OF ENDEM TYPES OF MARTINOV FAMILY

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**ANNOTATION**

*In this article scientific information on the taxonomy of endemic plant species belonging to the family Lamiaceae, distributed in the Fergana Valley are given. The rapid increase in human activity in the world is leading to changes in the diversity of biological species and ecosystems and a decrease in their number. The complete extinction of 654 plant species in the Earth's flora over the last 400 years under the influence of anthropogenic factors calls for greater attention to research in the inventory and assessment of the current state of local flora. In this regard, the identification of flora composition and changes in it, the development of measures for the conservation of rare and endemic species is one of the most pressing issues of nature protection today. On this basis, the article describes 2 species of Salvia tianschanica Makhm, belonging to the one category of endemics of the family Lamiaceae Martinov and Salvia margaritae Botsch in the flora of the Fergana Valley.*

**KEYWORDS:** *Lamiaceae, flora, inventory, endem, geofit, efimer, efemeroid, ruderal, antropogen, living forms, floristik, ekologic-morfologic, invaziv, botany-geografical landshaft, "The Red Book of Uzbekistan", local, texnogen, feature, recreation, Phenology, Ecology.*

The rapid increase in human activity in the world is leading to changes in the diversity of biological species and ecosystems and a decrease in their number. The complete extinction of 654 plant species in the Earth's flora over the last 400 years under the influence of anthropogenic factors calls for greater attention to research in the inventory and assessment of the current state of local flora. In this regard, the identification of flora composition and changes in it, the development of measures for the conservation of rare and endemic species is one of the urgent problems of nature protection.

So far, large-scale studies in the Fergana Valley, including vegetation cover (Arifkhanova 1967; Vernik, Rakhimova 1977, 1982; Tojibaev 2002), studies on ruderal species (Makhkamov, 2010), ephemerals and ephemeroids (Shonazarov, 1967), single-seeded onion geophytes (Karimov, 2016) and anthropogenic tranfonmatization of the region. The study did not provide accurate and complete information on the species composition of the *Lamiaceae* family in the Fergana Valley. The available information is also summarized. So far, no targeted floristic research has been conducted to study the flora of the Fergana Valley. Therefore, in this article we present endemic species belonging to the family Lamiaceae Martinov, formed in the flora of the Fergana Valley: *Salvia tianschanica* Makhm. and *Salvia margaritae* Botsch. the distribution of species in the Fergana Valley was studied and analyzed.

The following methods were used in conducting research. In determining the life forms of plant species, S. Raunkier (1934) and I.G. From the classifications of Serebrakov (1962), in which S. Raunkier classifies the location of the regenerative organs of the plant and their adaptation to adverse conditions, I.G. According to Serebrakov's classification, it was determined on the basis of ecological-morphological classification. Distribution of Uzbekistan by botanical and geographical regions K.Sh. Tojiboev, N.Yu. Beshko, V.A. Popov (2016), using Google Earth and ArcGis (2010) to create GAT maps.

Currently, the issue of preservation of natural landscapes in the Fergana Valley is one of the most pressing environmental issues. It is known that all ecosystems of the valley have been affected by strong anthropogenic factors for hundreds of years. Increased human impact on the environment has led to a reduction in local (natural) vegetation cover, landscape homogeneity, and loss of endemic and rare species populations (Makhkamov, 2010). Examples of this are the upper part of the Betagalik part of the Qurama mountain range, the middle basins of the Chodak and Chorkesar rivers (Makhkamov, 2010), and others. The fact that the number of wild, invasive species in the flora of the Fergana Valley is growing from year to year also indicates that the composition of the natural flora is changing (Karimov, 2016).

The main anthropogenic factors that cause the decline of flora in the Fergana Valley, changes in the floristic composition and cover - are agricultural factors, man-made factors, recreational factors (Makhmedov, 1984). In particular, the southern ridges of the Chatkal mountain system, which is under the influence of strong anthropogenic factors, ie the northern part of the Fergana Valley, have been occupied by the population for years for habitat, arable land and livestock.

Floristic, geobotanical research in the Fergana Valley was carried out in accordance with the current methodology

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(Anderson, 2003), which resulted in the selection of the following botanical areas of particular importance (Makhmedov, 1984):

1. Northern Hill Bedlands (Pop Hills, Steppes and Adjacent Territories).
2. Chodaksay river basin and Chorkesar territory of Qurama mountain range
3. Shohimardon river basin and Sokh region of Alay mountain range
4. Central Fergana sands
5. Tugai forests of the Syrdarya basin.

The publication of the Red Book of Uzbekistan is a theoretical basis for practical efforts to preserve endangered and endangered plant and animal species and enrich biodiversity.

In the Uzbek part of the Fergana Valley of the *Lamiaceae* Martinov family, 69 species belonging to 26 genera have medicinal properties, including *Lagochilus* Bunge ex Benth. 11 species, *Ziziphora* L. 8 species, Salvia L. 7 species, Dracoicephalum L. 7 species. *Perovskia* Kar., *Stachys* L. 4, *Mentha* L., *Nepeta* L. 3, *Lycopus* L, *Lamium* L, *Ssutellaria* L. 2, the remaining 14 genera have only 1 drug (Yusupov and Bazarov, 2021).

**The composition of medicinal species of the *Lamiaceae* Martinov family distributed in the Fergana Valley (Yusupov and Bazarov, 2021)**

| № | Categories | Number of types | Number and ratio of general type |
|---|---|---|---|
| 1 | Lagochilus Bung эх Benth. | 11 | 16% |
| 2 | Ziziphora L. | 8 | 11,6% |
| 3 | Salviya L. | 7 | 10,1% |
| 4 | Dracocephalum L. | 7 | 10,1% |
| 5 | Provskiya kar. | 4 | 5.8% |
| 6 | Stachys L. | 4 | 5.8% |
| 7 | The remaining 20 series | 28 | 40,6 % |
| | | 69 | 100% |

According to the results of the study, only 2 species of the *Lamiaceae* Martinov family are endemic in the Uzbek part of the Fergana Valley: *Salvia tianschanica* Makhm. and *Salvia margaritae* Botsch. However, these species are also found in Kyrgyzstan and Tajikistan. The degree of endemism is generally considered to be relative to the concept of endemic species. This is because the species may have growth points that were not observed during the study.

***Salvia tianschanica*** Makhm. Novit. Syst. PL Vase. 17:215 1980.

Tip. Uzbekistan, Western Tien Shan, Tashkent Alatau, Chatkal reserve, southern slopes in the Bashkyzilsay river basin, 8 VII 1976.

Perennial herb up to 25-40 cm hight (pic. 1). Stems 1-3, erect, straight to the ankle, oppositely branched, thickly fibrous and covered with long soft simple hairs. The leaves are oblong-lanceolate, 7-9 cm long, new 3-4 cm, with a sharp tip, the edges are sessile (Pic. 3). The leaves are elongated, the length of the leaf is equal to the band, the stems are smaller, without bands. Inflorescences consist of 4-6 (each with 2-3 flowers) fake rings. The length of the flower is 12-14 mm. The flowers are pink, 35-40 mm long. The nut is triangular, inverted ovoid, 6 mm long, smooth.

Phenology. It blooms in May-June and bears fruit in July.

Ecology. Distributed on rocky and small rocky slopes.

Areal. Western Tien Shan endemic plant.

***Salvia margaritae*** Botsch. Byull. Sredne-Aziatsk. Gosud. Univ. 22:324. 1937.

Type. Alai ridge. Neighborhood chickens. Shakhimardan. Kuruk-ak-sai. Wormwood-feather grass steppe with shrubs on the western slope near the lower border of juniper. 9.VII. 1935, tsv. Sovetkina, 19 (pic. 2).

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**Picture 1. *Salvia margaritae* Botsch. (Georgy Lazkov, 2012)**

**Picture 2. *Salvia margaritae* Botsch. (Georgy Lazkov, 2012)**

A semi-shrub up to 50 cm tall. The stems are many, branched at the base. The leaves are small, linear, glabrous. The leaves are 18 mm long, purple, glabrous. The petals are dark purple, glabrous, 30-40 mm long. The seed column is glandular.

Phenology. It blooms in July-August and bears fruit in August-September.

Ecology. Distributed on rocky and gravel slopes.

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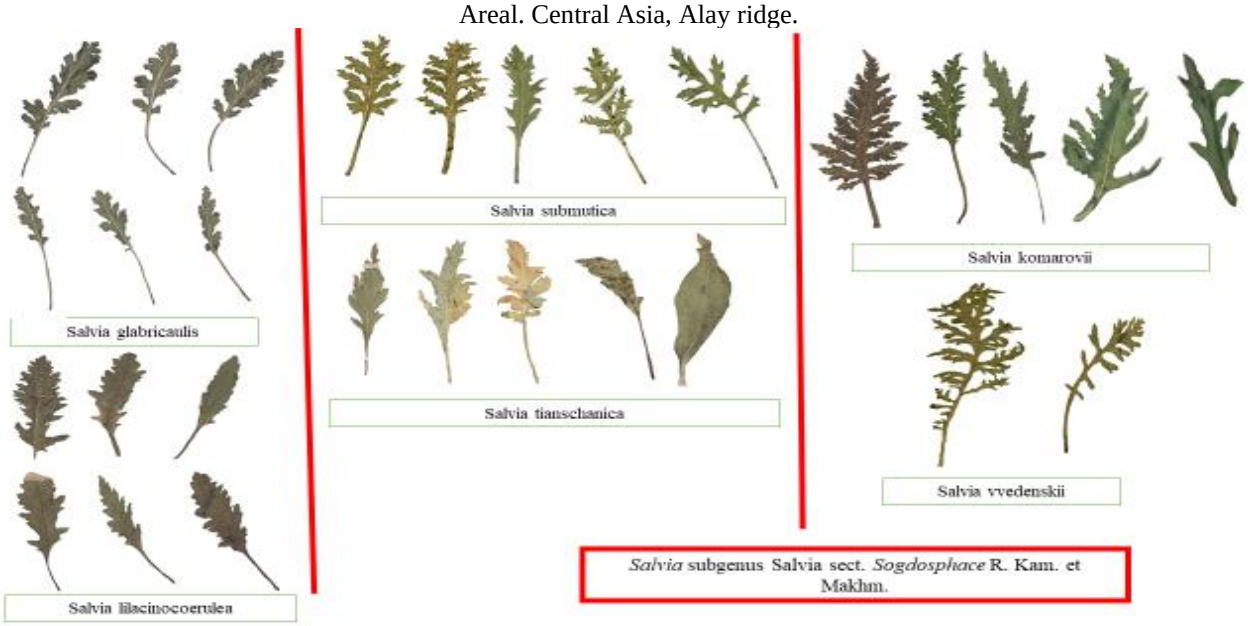
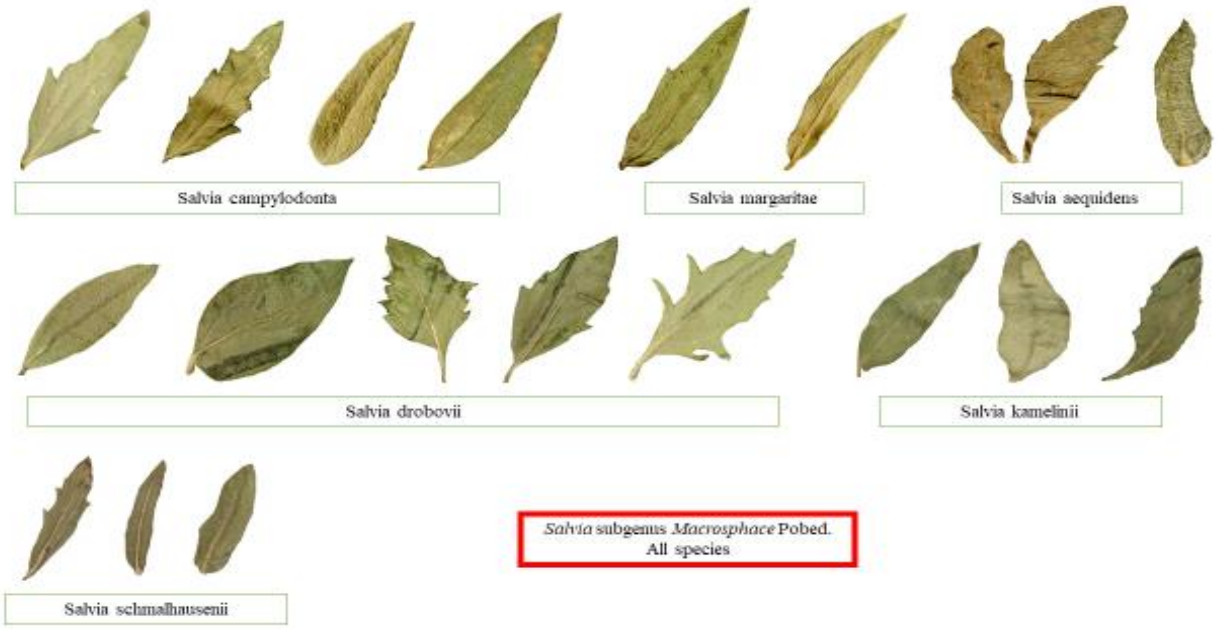
Areal. Central Asia, Alay ridge.




**Picture 3. Leaf forms in the species *Salvia*.**




**Picture 4. Leaf forms in the species *Salvia***

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