

LIFE FORMS, MORPHOLOGY AND DISTRIBUTION OF REPRESENTATIVES  
OF LAMIACEAE FAMILY

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ELSEVIER



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**Abstract:** In this article, the life forms, morphology and geographical distribution of the representatives of the Lamiaceae family are highlighted. The family of Lamiaceae includes 170 genera and 3400 species on earth, 68 genera and 950 species in the CIS, 40 genera and 206 species in the flora of Uzbekistan. According to their life forms, the family of Lamiaceae includes shrubs, semi-shrubs, perennials, biennials and annual herbs. The mountain region is the region in which representatives of the Lamiaceae family are most common. Among the members of the family of Lamiaceae, there are representatives that are full of essential oil, vitamins, and spices according to their economic importance.

**Keywords:** family of Lamiaceae, grass, shrub, bush, zygomorph, morphology, distribution, petal, flower formula.

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### Introduction.

This large family of Lamiaceae includes grasses, bushes, and shrubs. The stem is placed opposite in the form of a 4-sided shrub. There are no side leaves. The flowers are zygomorphic, bisexual inflorescences are formed by the growth of 2 corollas, and are cap-shaped or flat. The lower one is formed from 3 corollas, lying down or bent down, and in most plants, the middle of these corollas is divided into 2. The calyx is five-toothed, the leaves are joined together, sometimes they are double-lipped, and the upper lip is made of 3 petals, and the lower one is made of 2 petals. The stamens are attached to the 4 stamen tubes, and the first 2 attached to the next 2 will be longer. Sometimes there are only 2 stamens, the flower band is very short, and these small clusters of flowers are gathered in simple inflorescences in the axils of the upper leaves, and these small flowers form complex inflorescences, similar to a small head or a tubercle. Pollen ripens before the tip of the flower. Flowers are pollinated by insects. The fruits open into 4 nuts with one seed. The seed contains endosperm. Most species of oleanders are essential oil plants. There are 200 genera and 3500 species of the family of Lamiaceae. They are found almost everywhere on earth and grow in forests, steppes, deserts and mountains. Flower formula is the following:  $Sa_{(5)} So_{(2/3)} A_4 G_{(2)}$

### Results and discussions.

*Ajuga genevensis* L. Perennial, stem height 25 cm. The leaf is inverted longer lanceolate, with large teeth, hairless on the bottom, sparsely hairy on the top. The flowers form ring-shaped inflorescences. The calyx is bell-shaped, blue, 7 mm long. Petals are 15 mm long and hairy on the outside. It blooms and seeds in May. Scattered from the fields of Tashkent region.

*Dracocephalum Komarovii* Lipsky. Perennial, with many stems, the base is thickened, 10-20 cm high. The leaves are triangular, mostly heart-shaped, the edges are formed, with short bands. The flowers are smaller from the upper part, one is formed from the axil of the leaves, with a short handle. The calyx is 10-11 mm long, purple, double-lipped, slightly folded, and three-toothed. The appearance of corollas is covered with fluffy hairs on the outside, 20-22mm long. The nut is oblong, three-sided, and 3 mm long. It blooms in July-August, and seeds are produced in August-September. It grows in rocky places at the top of the mountains. It is distributed in Tashkent region (in the upper part of Okhangaron river).

*Eremostachys nuda* Regel. Perennial, thick-rooted shrub, sometimes branched. The stem is erect, simple, plump, hairless, and 50-60 cm high. The leaves are rhombic and small, cut, the lower leaves are short-banded, and the lower leaves are 1-2 pairs, sessile. The flowers are sessile, with few flowers, located in clusters. Coaculum is 12-15 mm long, tubular with short teeth, 1-1.5 mm long. The petals are 22-25 mm long, white, the lower lip is yellow, and the outside is fluffy. The nut is hairless, it blooms in May-June and ripens in June-July. It grows in the middle regions of mountain slopes. Distributed in Andijan region.

*Marrubium alternidens* Rech. Perennial, with many stems, sparsely branched coarse hairy, 30-80 cm high. The leaves are round, long-banded, toothed-forked. The calyx of many flowers is ring-shaped, 9-11 mm long, covered with star hairs. The leaves of the crown are white, the outside has star-like hairs, the length is 9-11 mm, and the leaf is cut into two parts. The nut is a three-sided ovate, 1.5 mm long. It blooms and seeds in May-September. It grows as a weed in gardens, on the edge of fields, and on abandoned land. It is distributed in Tashkent, Fergana, Samarkand, Bukhara and Surkhandarya regions.

*Melissa officinalis* L. Perennial herb with an erect stem, branching from the base, covered with thick coarse glands and hairs, smelling like lemon, 30-60 cm tall. The leaves are egg-shaped, the edges have large teeth, the lower side is hairless, and the upper side is sparsely hairy. The flowers are arranged in rings with long stalks. The calyx is 7-8 mm long and has long fibrous hair. The petals are white, slightly hairy on the outside, and 13-14 mm long. The nut is three-sided, dark brown, and 1.7 mm long. It blooms in June-August and seeds in July-September. It grows in the middle

regions of the mountains, on rocks, and in the shade. It is distributed in Tashkent, Kashkadarya, Fergana, Surkhandarya regions.

*Mentha piperita* L. Perennial, height is 30-40 cm, stems are simple sparsely branched. The leaves are long lanceolate, pointed at the tip, short banded, and saw-toothed. The flowers form spike-like inflorescences at the ends of stems and branches. The calyx is purple, glabrous, triangular, with pointed ciliated teeth. Petals are pink-blue, 3-4 mm long. Petals are shorter. It blooms in June-August. It rarely grows on the banks of streams. Distributed in Tashkent region.

*Mentha arvensis* L. Perennial, with an erect stem, branching from the base, four-sided stem, 25-50 cm high. The leaves are long lanceolate, covered with thick, short hair. The flowers form spike-like balls at the ends of the branches and stems. The calyx is 2.5 mm long and has a three-edged sharp tooth. Petals are pink-purple, 4-5 mm long. It blooms in July-August and seeds in August-September. It grows on the banks of streams and water bodies in the plains and sub-mountain districts, and on dry land. Distributed in Tashkent and Fergana regions.

*Mentha Asiatica* Boriss. (*M. longifolia*). Perennial, the stem grows upright, the branches are thickly hairy, the height is 60-100 cm. The leaves are lanceolate, sessile, hairy on both sides. The flowers are short-stalked and form a spike-like ball of flowers at the end of the stem. Calyx thickly pubescent 2-2.5-(3) mm long, narrowly triangular, tip toothed. Petals are light purple in color and 3-4 mm long. It blooms in June-August and seeds in July-September. It grows in the mountains to the middle region, around wet lands, streams, and springs. It is distributed in Tashkent, Andijan, Fergana, Samarkand, Bukhara and Surkhandarya regions.

*Nepeta cataria* L. Perennial, stems are thick, branchy, height is 60-80 cm. The leaves are triangular, inverted egg-shaped, heart-shaped at the base, with large teeth, the surface is hairless, and the underside is sparsely hairy. The flowers are sparse, numerous, semi-umbrella-like, and form inflorescences. Petals are 5-10 mm long, flower side petals are very small, needle-like hairy. The calyx is 5-6 mm long, gray fluffy. Petals are pale yellow or blue, in some cases white, 7-8 mm long. The nut is ellipsoidal, brown in color, 1.5 mm long, blooms in June-July, seeds in July-August. It grows as a weed in the mountains up to the middle region. It is distributed in Tashkent, Fergana, Surkhandarya regions and Karakalpakstan.

*Origanum tythanthum* Jontseh. Perennial, with erect stem, numerous, branching from the top, height is 30-60 cm. The leaf is ovate or longer, with a blunt base and pointed edges, and the surface is hairless. The flowers are collected in sessile spike-like, semi-umbrella-like inflorescences. The calyx is 3 mm long with short hair. Corolla is pale bluish-pink, 5 mm long. Nuts are dark brown, 0.75 mm long, blooms in July-August, and produce seeds in July-September. It grows in rocky and

gravelly places in the middle and lower regions of the mountains. It is distributed in Tashkent, Andijan, Fergana, Samarkand and Surkhondarya regions.

*Perovskia serophulariifolia* Bunge. Perennial shrub with a thick stem and brown bark, height is 60-120 cm. The leaves are oblong or ovate, bluntly toothed, the flowers are few-flowered with short stalks, forming a ring-like shingle inflorescence. The length of the calyx is 5-6 mm, purple, all parts are covered with long hair. Petals are purple, 11-12 mm long, and sparsely fluffy. It blooms in June-July and seeds in July-August. It grows in rocky and gravelly areas of the lower mountains. It is distributed in Fergana, Samarkand and Surkhondarya regions.

*Phlomis thapsoides* Bunge. Perennial, with numerous stems, erect, branched, covered with star-like downy hair, height is 30-50 cm. The leaves are broadly ovate, the lower leaves are banded, the upper ones are short banded, and the surface and lower parts are covered with star hairs. There are 2-6 flowers in the axils of the upper petals. The calyx is 12-14 mm long, covered with thick stellate hair, ribbed, with short spiny teeth, 0.5-2 mm long, petals are pink-blue. It blooms in June-July and seeds in July-August. It grows as a main landscape plant in mountain meadows. It is distributed in the western parts of Samarkand, Surkhondarya regions.

*Prunella vulgaris* L. Perennial herb, 10-40 cm tall, branching from the upper part of the stem. The leaves are oblong-ovate, with serrated edges, dark green, hairless. The flowers are short-stemmed and have a dense spike-like flower cluster. Calyx is 5-6 mm, seeds, the color is purple. The petals are leaking and have purple spots. Hairless, 9-10 mm long. The nut is elliptic, three-sided, glabrous, light-brown, 2 mm long. It blooms in July-August and seeds in August-September. It grows in wet places in foothills and high mountain regions. It is distributed in Tashkent, Fergana, Samarkand and Surkhondarya regions.

*Lagochilus gypsaceus* Vved. Perennial, the height of the stem is 30-40 cm, with many stems, the stem is white-gray, covered with hair. The leaves are blade-shaped, the edges are toothed or divided into pieces. Flowers are sessile, 4-6 are located in the leaf axils. The calyx is thin bell-shaped, 12-18 mm long, with thorn-like teeth at the ends. Petals are white or pink, 20-25 mm long. The nut is hairless, 4-5 mm long. It blooms in May-August, and seeds are produced in June-August. It grows in the foothills, in places with brown soil. It is distributed in Surkhondarya region (between Guzar and Sherabad).

*Lagochilus hirsutissimus* Vved. Perennial, woody stems, erect, rarely branching, height is 15-30 cm. The leaves are rhombic-ovate, deeply carved, hairy at the tip. 4-8 flowers are located in leaf axils. The calyx is bell-shaped, the tips are pointed, the lower calyx is 20-25 mm long. The petals are white with brown rays, 25-27 mm



long. It blooms in June-July. It grows in areas with gravelly and fine soil in the foothills. Spread in front of the mountain(Kurama ridge) of Fergana region.

*Lagochilus inebrians* Bunge. Perennial, woody stem, branched, covered with horizontal hair, shiny white bark, height is (20)-30-40-(60) cm. The leaves are oval-rhombic, divided into pieces, covered with hair. Flowers are sessile, located in the axils of 4-6 upper leaves. The calyx is thin bell-shaped, 15-23 mm long. Petals are white or pink with brown spots, 20-28 mm long. The nut is hairless, 4-5 mm long. It blooms in June-August and seeds in July-September. It grows in stony and gravelly soils in the foothills. It is distributed in Samarkand, Bukhara, Kashkadarya, and Surkhandarya regions.

*Lagochilus Knorringianus* Pavl. Perennial, upright growing stems, branched, hairy, height is 20-30 cm. The leaves are rhombic and cut twice. There are 4 flowers in the axils of the upper leaves. The calyx is thin bell-shaped, the lower crowns are 11-12, the upper one is 16-17 mm long, the tip of the calyx is thorn-like, 27-28 mm long. The nut is twisted, 6 mm long. It blooms in May and seeds in June. It grows on the lower slopes of the mountain. It is distributed in Fergana region (in the Chotkal range).

*Lagochilus paulsenii* Brig. Perennial, with few branched stems, thin, shiny white bark, height is 25-50 cm. The leaves are rhombic, cut 1-2 times, with thin spines. There are 2 flowers in the axils of the leaves in both parts of the stem. The calyx is thin bell-shaped, hairy, with 4 spines, the lower calyx is 25-35 mm long. Petals are pale pink, 30-40 mm long. It blooms in June-August, and seeds are produced in July-September. It grows in rocky places in the middle regions of the mountains. It is distributed in the Fergana region (in the Oloy range).

*Lagochilus platycalyx* Schrenk. ex Fisch. Perennial herbaceous plant with a white bark on the joints, height is 30-60 cm. The leaves are rhombic, broad-oblong, cut, and the tips are prickly. The flowers are sessile, located in the axils of the leaves above the stem. The calyx is thin bell-shaped, 25-35 mm wide, the lower calyx is 20-30 mm long. The petals have pink and brown light spots, 25-30 mm long, and have a long upper lip. It blooms in May-July and seeds in July-August. It grows in stony, fine soil, and gravelly areas from the front to the middle of the mountains. It is distributed in the Tashkent region, western Tien-Shan ranges.

*Lagochilus pubescens* Vved. Perennial, multi-stemmed, stems are rarely branched, with white bark, height is 15-50 cm. The leaves are rhombic, long-banded, hairy. The flowers are sessile, located in the axils of the leaves at the top of the stem. Calyx is thin bell-shaped, covered with hair, ending in a long spine, (14)-18-24 mm long. Petals are white or pink. It has brownish light spots, 22-28 mm long. The nut is glabrous, 4 mm long. It blooms in June-August and seeds in July-

September. It grows in the foothills with brown soil. It is distributed in Fergana region (in the Oloy range).

*Lallemantia Rogleana* (Wall.) Benth. Annual, simple, branched from the stem base, height is (5)-10 -25-60 cm. The leaves are elliptic, the base is broad, the bands are twice as long as the leaf. The flowers are spike-shaped with thick bands. The calyx is 7-8 mm long, downy hairy, shield-shaped with sharp teeth. Petals are purple, the outside is downy hairy, a little longer than the calyx, the nut is three-sided, hairless, dark brown, 2.75 mm long. It blooms in April-July and seeds in May-July. It grows in places from desert regions to mountains to the middle regions. It is distributed in Tashkent, Samarkand, Andijan, Fergana, Surkhandarya regions and Karakalpakstan.

**Conclusion.** The family of Lamiaceae includes 170 genera and 3400 species on earth, 68 genera and 950 species in the CIS, 40 genera and 206 species in the flora of Uzbekistan. The leaves of the representatives of the family of Lamiaceae are simple leaves, which are mostly opposite on the stem. The shape of the stem is square-edged in many representatives. The body of representatives of this family is located in both orthotropic and plagiotropic positions to the earth's surface. The flowers consist of clusters arranged in a circle on the stem. The fruits are mostly nuts. According to their life forms, the family of Lamiaceae includes shrubs, semi-shrubs, perennials, biennials and annual herbs. The mountain region is the region in which representatives of the Lamiaceae family are most common. Among the members of the family of Lamiaceae, there are representatives that are full of essential oil, vitamins, and spices according to their economic importance. The most common representatives are with essential oil. This is why the stems and leaves of plants are covered with glandular hairs.

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