Ajuga turkestanica (Regel) Briq. - LAMIACEAE

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***Ajuga turkestanica* (Regel) Briq.**
Synonyms: *Rosenbachia turkestanica* Regel

Local Names

Ajuga turkestanica (Regel) Briq. - LAMIACEAE.

Botany and Ecology

Ajuga turkestanica: Subshrub with a robust root; stems 40–50 (60) cm long, stout, 3–5 mm in diameter, pale brown, sometimes reddish, rarely more or less whitish below, glabrous, grayish, in upper part finely and softly appressed-hairy like the leaves; leafless, woody and spinous.

branches usually absent; sterile shoots leafy above; leaves larger than in the preceding.

species, (30) 45–60 mm long, (12) 14–18 mm wide, oblong-elliptic or obovate, sometimes rhombic, only on short sterile branches occasionally oblong-lanceolate,

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entire or rarely with 2–4 apical teeth, tapering at base; lower leaves short-petioled, the upper sessile, amplexicaul; pubescence of leaves and other parts sparser than in the preceding species; flowers 25–40 mm long, purple; pedicels 3–4 mm long at flowering, later 6 mm; calyx campanulate or narrowly so, (8) 10–12 mm long at flowering, 13–16 mm in fruit, covered all over with fine short appressed hairs, glaucous, the teeth narrowly lanceolate, nearly as long as calyx-tube, accrescent in fruit to nearly twice their length and becoming broadly lanceolate, foliaceous; corolla-tube long, broadly infundibular, finely appressed-hairy, 2–2^1/$_2$ times as long as calyx; upper lip slightly developed, with 2 obtuse, hardly discernible lobes; lower lip very large, slightly glandular, the lateral lobes broadly lanceolate or ovate, diverging at an acute angle, deeply bipartite, 12–15 mm wide, the middle lobe longunguiculate, the lobules rounded, faintly undulate-dentate; filaments ribbon-shaped in lower part, glabrous like the style; nutlets oblong-ovoid, 7–9 mm long, 3 mm wide, thinly 29 longitudinally reticulate-rugose, with very large areola. April – July. Stony and gravelly mountain slopes, rocks and taluses, to 2500 m. – Central Asia: Pamir – Alai (west and southwest). Endemic. (Shishkin and Yuzepchuk 1954) (Figs. 1, 2, 3, and 4).

Fig. 1 *Ajuga turkestanica* (Lamiaceae) Kashkadariya region, Uzbekistan. (Photo O.K. Khojimatov)

Fig. 2 *Ajuga turkestanica* (Lamiaceae) Kashkadariya region, Uzbekistan. (Photo O.K. Khojimatov)

Fig. 3 *Ajuga turkestanica* (Lamiaceae) Kashkadariya region, Uzbekistan. (A.N. Khujanov)

Fig. 4 *Ajuga turkestanica* (Lamiaceae) Kashkadariya region, Uzbekistan. (A.N. Khujanov)

Phytochemistry

Ajuga turkestanica: The underground part contains phytoecdysons: ayugalactone, ecdisterone, ciasterone, turkesterone, ayugosterone B 0.003%. In the aboveground part of phytoecdysons: ecdisterone, ciasterone. Leaves also contain phytoecdysons: ecdisterone, ayugalactone, ayugosterone B, 22-acetylciasterone, ciasterone. (Khidoyatova et al. 2012; Khojimatov 2021; Sokolov 1991).

Local Medicinal Uses

Ajuga turkestanica: A leaf decoction is used as anti-inflammatory, for wounds, burns, tonsilitis, diseases of the stomach, rheumatism. (Sokolov 1991). The aerial part is used as an ingredient in tonic beverages (teas). Dried green leaves and tops

of flowering stems are used in the manufacture of astringent infusions, which are used for diarrhea. They are also used for mouthwash in various inflammatory diseases such as angina and gingivitis (Khalmatov et al. 1984). Extracts from the shoots of the *Ajuga turkestanica* are used in sports medicine (Arthur et al. 2014).

Medicinal Uses of Other Species

The leaves of ***Ajuga brachystemon*** are used in India to treat fevers (Kumar et al. 2011), and ***Ajuga integrifolia*** leaves are masticated in Pakistan against thhroat ache and a decoction is given to women to ease labour (Sher et al. 2016). ***Ajuga remota*** is used in Kenya as antimalarial, anthelminthic, for colds and flu, and stomach problems (Njoroge et al. 2004; Njoroge and Bussmann 2006a, b).

Local Food Uses

Ajuga turkestanica: The leaves are eaten in soups and as a salad. (Sokolov 1991).

Local Handicraft and Other Uses

Ajuga turkestanica: Fodder for cattle. (Sokolov 1991). Patented extracts of *A. turkestanica* have been shown to contain sufficient ecdysteroids and other active ingredients to improve the differentiation of keratinocytes, thus facilitating skin hydration and yielding antiaging effects (U.S. Patent 7,060,693 B1, June 13, 2006). The patent inventors Dumas et al. observed that the extracts are especially effective in regulating epidermal water transport, achieving improved hydration of the basal layer by working in concert with or enhancing AQP-3 (Cosmet. Toil. 2008;123:22–7) (https://www.mdedgecom/dermatology/article/54813/aesthetic-dermatology/ajuga-turkestanica).

Local Handicraft and Other Uses Other Species

Ajuga remota is used in Kenya in veterinary medicine for cattle (Njoroge et al. 2004; Njoroge and Bussmann 2006c).

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