

## DISTRIBUTION PROPERTIES OF THE SPECIES OF *IRIS* L. GENUS (*IRIS* L., IRIDACEAE JUSS.) IN UZBEKISTAN

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**Introduction.** The genus *Iris* (Iridaceae Juss) includes 280 species common in temperate regions of the northern hemisphere. The representatives of this category are geophytic plants that can be found in different ecological conditions, in swamps, deserts, steppes, hills and mountainous areas (Wilson et al., 2016).

This species, like many other plants, is of economic importance due to its medicinal properties and the beauty of its flowers. The geophyte organs of the genus are systematized based on morphological features such as hairs on the outer petals. Currently, the *Iris* series is divided into 6 subcategories, 12 sections (Ikinci et al., 2011).

Central Asia is the center of a number of species of the *Iris* family. Currently, 47 species of this genus are found in the flora of Uzbekistan.

36 of the species found in the Western Tianshan and the Pamir-Alay mountain ranges in Uzbekistan are endemic (Khassanov et al., 2012).

As a result of scientific research, *I. austrotschatkalica* was found in the Chatkal ridge of the Fergana Valley, *I. khassanovi* in the Gissar ridge (Tadjibayev et al., 2014), *I. rudolphii* and *I. victoris* (Khassanov et al., 2013) in the Kelif-Sherabad ridge. Therefore, this study covers the distribution of *Iris* species on the territory of Uzbekistan, on the basis of 1,608 herbarium specimens stored in the National Herbarium of Uzbekistan (TASH) and the materials collected during field research.

**Materials and methods.** The distribution of the species in the botanical and geographical regions of Uzbekistan is studied based on the system of Sh. Tojibaev et al. (Tojibaev et al., 2016). The information was aggregated according to the data stored in the TASH fund, given in the herbarium labels. The accepted scientific names of the taxa are listed in accordance with POWO (<http://www.plantsoftheworldonline.org>). The International Plants Names Index, the Catalog of Life and other international electronic resources were also used. The main purpose of the research is to shed light on the distribution of the subgenus *Iris*, *Limniris* and *Scorpiris* in the botanical and geographical regions of Uzbekistan.

**Results.** In the flora of Uzbekistan, the representatives of the subfamily *Iris* comprise 11 %, *Hermodyctylodes* – 4 %, *Limniris* – 11 %, *Scorpiris* – 71 %. The distribution of species within the botanical and geographical regions of Uzbekistan depends on a number of abiotic factors, such as climate, relief, soil composition, length of the day.

The representatives of *Limniris* and *Iris* subgenus *I. loczyi* Kanitz are found in mountainous areas at altitudes of 1,000 to 3,000 m above the sea level in the Western Tien-Shan, Fergana-Alay, West-Gissar and Gissar-Darvaz districts.

*I. songarica* Schrenk species is found in the Western Tien Shan, Kuhiston, Western Gissar, Nurata, Bukhara, the Kyzylkum, the Southern Aral Sea and the Ustyurt regions at altitudes from 100 to 1,500 m above sea level, in the desert, hills and lower mountains. *I. longiscapa* Ledeb is distributed in Western Gissar, Nurata, Bukhara, the Kyzylkum, the South Aral Sea and the Middle Syrdarya regions at the height of 60 to 300 m below sea level compared to other species. *I. falcifolia* Bunge species is distributed in the Western Gissar, Bukhara and the Kyzylkum regions and can be seen in the range of 300–700 m above sea level. *I. alberti* Regel species is distributed in the foothills of the Western Tien Shan and Fergana regions at the altitude of 700–800 m, *I. korolkowii* Regel species can be found only at the altitude of 1,500 m in the botanical geographical areas of the Western Tien Shan region of Uzbekistan. *I. stolonifera* Maxim species is found at the altitudes of 900–2,500 m in the botanical geographical regions of

Kuhiston, Western Gissar, Gissar-Darvaz, the Pyanj region. *I. ruthenica* Kre Gawl. species is distributed in the northern part of the Mirzachul district, at the exit of the Syrdarya river from the territory of Uzbekistan, at the altitude of about 250 m. *I. sogdiana* Bunge occurs at the altitudes of 500–2,500 m in Bunge Chimgan, Qurama (Ahangaran), South Chatkal, Chorkesar, Urgut, Kashkadarya, Sangardak-Tupalang, Boysun regions. The representatives of *I. oxypetala* Bunge species are found in the Eastern Alay, Eastern Fergana and Kayrakkum-Yazyavon regions, in the foothills at the altitude of 800–1,500 m.

The geophyte organs of the subspecies *Scorpiris* differ from those of the remaining subspecies by the presence of bulbs and other morphological features. The species of the genus are mainly distributed in the foothills and high mountain regions. *I. austrotschatkalica* Tojibaev, F. Karimov & Turgunov species are found on the slopes of the Southern Chatkal region at the altitude of 1,200–1,300 m. The species *I. fedtschenkoi* F.O. Khass. & N. Rakhimova, *I. pseudocapnoides* Rukšāns, *I. orchioides* Carrière, *I. winkleri* Regel, *I. kolpakowskiana* Regel, *I. capnoides* (Vved.) T. Hall & Seisums are observed in Ugam-Pskom, Tashkent pre-districts. The species *I. tubergeniana* Foster, *I. wilmottiana* Foster are observed in Chimgan, Qurama, Ahangaran, North Turkestan and Tashkent prefectures. *I. hippolyti* is found in the Kokchatog mountains in the Kyzylkum region of western Uzbekistan. *I. rudolphii* F. O. Khass., Esankulov occur in Boysun Sangardak-Tupalang, Kuhitang, Bobotog region. & N. Rakhimova, *I. vvedenskiy* Nevski ex Popov, *I. petri* F. O. Khass., & N. Rakhimova, *I. victoris* F. O. Khass., Esankulov. & N. Rakhimova, *I. bucharica* Foster, *I. khassanovi* Tojibaev Komil & Turgunov Orzimat, *I. narbuti* O. Fedtsch, *I. vicaria* (Vved.) T. Hall & Seisums, *I. nicolai* Vved. species *I. maracandica* Vved, *I. warleyensis* Foster, *I. tadshikorum* Vved. species are distributed in North Turkestan, Urgut, Nurata regions.

**Conclusion.** Based on the above, it can be seen that the main distribution centers of the subspecies *Iris*, *Scorpiris* and *Limniris* of the genus actually belong to the Western Tien Shan and the Pamir Alay mountain ranges. Also *I. songarica* Schrenk, *I. narbuti* O. Fedtsch. and *I. longiscapa* Ledeb species differ from the remaining species in their prevalence compared to other species and in the breadth of their distribution area. The area of distribution of the species *I. winkleri* Regel, *I. magnifica* (Vved.) F.O. Khass. & Rakhimova, *I. orchioides* Carrière, *I. hippolyti* (Vved.) Kamelin, *I. svetlanae* (Vved.) F.O. Khass., *I. victoris* F.O. Khass. et al. is very narrow.

#### References

- Wilson C., Padiernos J. & Sapir Yu.** 2016. The royal irises (*Iris* subg. *Iris* sect. *Oncocyclus*): Plastid and low-copy nuclea data contribute to an understanding of their phylogenetic relationships. *Taxon*, **65** (1): 35–46.
- Ikinci N., Hall T., Lledó D., Clarkson J., Tillie N., Seisums A., Saito T., Harley M. & Chase M.** 2011. Molecular phylogenetics of the juno irises, *Iris* subgenus *Scorpiris* (*Iridaceae*), based on six plastid markers. *Botanical Journal of the Linnean Society*, **167** (3): 281–300.
- Khassanov F. & Rakhimova N.** 2013. Two new species of *Iris* L. (*Iridaceae* Juss.) from Uzbekistan. *Stapfia*, **99**: 1–3.
- Tojibayev K. & Turgunov O.** 2014. A new species and a new combination of *Iris* subgenus *Scorpiris* (*Iridaceae*) from Central Asia (Hissar Range, Pamir-Alai). *Phytotaxa*, **158** (3): 224–228.
- Tojibaev K.Sh., Beshko N.Yu. & Popov V.A.** 2016. Botanical-geographical regionalization of Uzbekistan. *Botanical Journal*, **101** (10): 1105–1132.