



COMPARATIVE ANALYSIS OF AUTOCHTHONOUS AND ADVENTIVE
FRACTIONS OF URBAN FLORA (BUKHARA CITY)

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Abstract: *This article presents a comparative analysis of the autochthonous and adventive fractions of the urban flora in Bukhara city. The study revealed that 62.35% of the flora is composed of native species, while 37.65% are adventive. Leading families and genera, geographical distribution ranges, and biomorphological characteristics were analyzed. The results demonstrate a high proportion of adventive species in the urban flora, highlighting the impact of urbanization processes.*

Keywords: *urban flora, autochthonous, adventive, flora, Bukhara, anthropogenic transformation.*

The composition of urban flora is formed under anthropogenic pressure and is characterized by the balance between autochthonous and adventive fractions. While the flora of deserts and mountain regions of Uzbekistan has been thoroughly investigated [1; 2; 3; 4; 5], urban flora has received relatively little attention. Research by H.Q. Esanov [6; 7], T.X. Mahkamov, and others has provided initial insights into the development of urban flora, but the principles of its modern formation remain insufficiently explored. In contrast, the autochthonous and adventive composition of urban flora has been widely studied in many foreign countries [8; 9]. In Uzbekistan, research on this topic is only beginning to emerge. Therefore, the comparative analysis of Bukhara city's urban flora holds significant scientific and practical importance.

The study was conducted in 2022–2023 within the territory of Bukhara city. Plant species were identified through floristic surveys and geobotanical observations. Their systematic composition, geographical distribution, and biomorphological traits were analyzed. Species were divided into autochthonous and adventive fractions, and comparative analyses were made across dominant families, genera, distribution ranges, and life forms. The findings were also compared with data from other urban floras.

The urban flora of Bukhara consists of 255 species, of which 159 species (62.35%) are autochthonous, and 96 species (37.65%) are adventive.

Leading families:

- Autochthonous fraction — Amaranthaceae (25 species, 9.80%), Asteraceae (22 species, 8.63%), Poaceae (19 species, 7.45%).

- Adventive fraction — Asteraceae (15 species, 5.88%), Poaceae (15 species, 5.88%), Brassicaceae (15 species, 5.88%).

Leading genera:

- Autochthonous fraction — Astragalus, Atriplex, Artemisia, Polypogon, Climacoptera, Bromus.

- Adventive fraction — Amaranthus (6 species), Lepidium, Veronica, Sonchus, Ranunculus, Vicia.



Geographical distribution: In the autochthonous fraction, widely distributed species account for 57.23%, while in the adventive fraction this share rises to 86.46%.

Biomorphological structure: In the autochthonous flora, annual and biennial species make up 61.63%, while in the adventive flora they account for 75%, showing the dominance of short-lived herbaceous plants.

The results show that the proportion of adventive species in the urban flora of Bukhara is higher compared to natural habitats. This is explained by the strong anthropogenic transformation of the urban environment, local climatic conditions, and continuous introduction of plant species from other regions. While the autochthonous fraction is dominated by desert flora elements (*Astragalus*, *Atriplex*, *Artemisia*), the adventive fraction is enriched with cosmopolitan and pluriregional species (*Amaranthus*, *Lepidium*, *Erigeron*, *Digitaria*). Biomorphological analysis demonstrates the prevalence of annual and biennial herbs in the adventive fraction, which reflects their high adaptive potential. These findings are consistent with observations from other urban floras.

The urban flora of Bukhara city consists of 255 species, of which 62.35% are autochthonous and 37.65% are adventive.

In terms of leading families, *Amaranthaceae* dominate in the autochthonous fraction, while *Asteraceae* dominate in the adventive fraction.

Widely distributed species account for 86.46% of the adventive flora, demonstrating their rapid expansion under urban conditions.

Biomorphological analysis shows that the autochthonous flora is rich in desert elements, while the adventive flora is mainly composed of short-lived annual and biennial herbs.

Comparative analysis highlights the significant role of adventive species in shaping Bukhara's urban flora and suggests that their share is likely to increase further in the future.

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