

**BIO-ECOLOGICAL PECULIARITIES OF SOME NEW TAXA OF  
*BERBERIS THUNBERGII* DC.**

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The implementation of the Global Biodiversity Strategy aims at a series of high-priority goals, one of them being the enrichment and diversification of the gene pool in green spaces. The representatives of the genus *Berberis* L. are high-value honey and ornamental plants. The genus *Berberis* L. belongs to the family *Berberidaceae* Juss. The genus *Berberis* L. includes about 175 species and a very large diversity of taxa. They occur in the temperate zone of Europe, Asia and North America. Thirty-one species and several varieties occur in the Republic of Moldova. In the last 4-5 years, in the "Alexandru Ciubotaru" National Botanical Garden (Institute) (hereinafter NBGI), 24 new taxa of Japanese barberry, bred in Poland, have been introduced and need to be researched, assessed bioecologically under the new growth conditions for further use. The goal of this research included the identification of the bioecological peculiarities of 4 *Berberis de thunbergii* DC. taxa – ‘Maria’, ‘Green Cloud’, ‘Red Torch’,

‘Dart’s Red Lady’ under new *ex-situ* conditions and the appreciation of the prospects of their use in landscaping.

The research was conducted in 2019-2022 in the plant nursery of the Dendrology Laboratory, within the project 20.80009.7007.19 "The introduction and development of technologies for propagation and cultivation of new species of woody plants by conventional techniques and tissue culture". The respective taxa, which grow in the collection of NBGI, are currently in the third and fourth growing season. The morphological parameters were determined for 10 plants of each taxon, as well as for 100 flowers and shoots. The frequency of flowers and fruits per 20-cm-long shoot and the fruit yield were determined in the fourth growing season. The researched taxa are tolerant to drought, frost, noxious substances; they do not require special care, only regular trimming to keep their shape and compliance with standard technology throughout the growing season. The studied shrubs are particularly showy in early spring, due to the beautiful yellow colour of the flowers, the abundance of flowering, the density of flowers and shoots per 20-cm-long shoot, as well as in early summer – due to the shade of the foliage, the shape and size of the plant and fruits and the various colors of the fruits (red, orange-red, purple-red), the abundance of fruiting, the long period of flowering and fruiting.

The studied taxa differ significantly in plant height, which varied from 36 cm in *Berberis thunbergii* ‘Green Cloud’ to 114 cm in *Berberis thunbergii* ‘Red Torch’. They also differ in crown diameter, which ranged from 50-52 cm (in the taxa *B. th.* ‘Maria’, *B. th.* ‘Green Cloud’) to 70-72 cm (*B. th.* ‘Red Torch’, ‘Dart’s Red Lady’). The density of fruits per 20-cm-long shoot varied from 2 pcs. (*B. m.* ‘Dart’s Red Lady’) to 14 pcs. (*B. th.* ‘Red Torch’). The taxon *B. th.* ‘Red Torch’ is characterized by a high percentage of fruit bearing (80.1%), *B. th.* ‘Dart’s Red Lady’ – 30.6%, and the other taxa have intermediate values of this index. The fruit bearing percentage correlates with both the biotype and the climatic conditions during the process of ontomorphogenesis.

**Keywords:** *Berberis thunbergii*, morphological parameters, biotype, growing season.