



SPECIES OF THE BRASSICACEAE FAMILY INCLUDED IN THE RED BOOK AND MEASURES TO PROTECT THEM

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Abstract: *This article provides information on the specific structure of representatives of the Brassicaceae family, species in need of protection, and measures to preserve them, which are included in the Red Book of Uzbekistan.*

Keywords: *Red Book, Brassicaceae family, species, medicinal, rare, endemic, protection.*

Plants are very important in human life, and plant resources have been used for various purposes since ancient times. Plants have been used for building materials, food, medicine, cosmetology, fodder, and other purposes.

In recent times, the unplanned and unscrupulous use of plant resources has led to a decrease in their number. This has a serious impact on the loss of biodiversity on our planet, and as a result, some plants are under threat of complete extinction. Such plants are included in the category of endangered species of the Red Book.

Several species of the Brassicaceae family are included in various categories of the Red Book according to their number in nature, including many rare and endemic species that require serious protection. 9 species of the family are included in the Red Book of Uzbekistan, published in 2019.

As a result of the small size of the Brassica family, the degradation of natural land, their poor adaptation to conditions, the digging up of their rhizomes by local residents and their use as medicinal products, the extensive grazing of livestock, their harvesting for fodder, and their adaptation to growing on specific soils, their numbers are gradually decreasing and their range is changing.

Representatives of the Brassicaceae family grow in the upper part of the mountain, in the cracks of the shadows, among ephemerals, ephemeroïds, on gravelly and gypsum red soils, on gravelly slopes in the mountains at an altitude of 2600 - 2900 m, at an altitude of 2200 - 2300 m above sea level, among sparse junipers, on steep slopes.

In addition, it grows on the northern and western slopes of the middle part of the mountains with stony limestone, stony small limestone.

Cabbage in nature is preserved singly or in small groups, in places where it is difficult to climb.

The plants are gradually decreasing in number due to their small size, poor adaptation to conditions, excessive livestock grazing, poor seed germination, construction of holiday homes, man-made factors, and the digging up of their rhizomes by local residents and their use as medicinal products.

As a result of heavy livestock grazing, several species of the Brassicaceae family (*Parrya kuramensis* Botsch.), *Pseudoclausia zerauschanica* (Regel et Schmalh.) Botsch.), *Lepidium subcordatum* Botsch. et Vved.), *Crambe gordjaginskii* Sprygin et Popov, and *Spryginia winklerii* (Regel) Popov) are now very rare. Plants of the Brassicaceae family include herbs, ephemerals and ephemeroïds, and rarely, semi-shrubs.

Leaves simple, without leaflets, entire or cut, arranged in a row. Sparse shingle with balls. Flowers usually straight (actinomorphic), sometimes zygomorphic, bisexual and with double corolla. Calyx petals are 4, not connected, sepals are 4, opposite. Pollen often 6, 2 of which have short, 4 with long stamens. Seed 1, 2. Flower formula: $C_{2+2} \quad Co_{2+2} \quad A_{2+4} \quad G_{(2)}$. Pollination mainly by insects, sometimes self-pollination. The flowers of representatives of the Brassicaceae family are distinguished by their surprisingly uniform appearance. Their flowers vary in size and color (white, yellow, pink, purple), but their structure remains almost unchanged

and, as a result of uneven growth of the petals, they take on a zygomorphic shape.

The fruits are in the form of acorns, acorns, sometimes nuts.

Of the plants of the Brassicaceae family, *Pseudoclausia zerauschanica* (Regel et Schmalh.), *Olga lepidium* (*Lepidium olgae* (R.M. Vinogr.) Al-Shehbaz et Mumm.) are protected in the Nurota State Reserve, while special protection measures have not been developed for species such as *Kurama parrya* (*Parrya kuramensis* Botsch.), Botsch., heart-shaped torol (*Lepidium subcordatum* Botsch. et Vved.), Gordyagin resin (*Crambe gordjaginii* Sprygin et Popov) and Winkler spryginia (*Spryginia winklerii* (Regel) Popov).

To protect these representatives of the Brassicaceae family:

- Scientifically study the bioecological characteristics of the representatives of the Brassicaceae family;
- Develop special measures to increase the number of representatives of the Brassicaceae family and restore their numbers in nature;
- Introduce the population to species in need of protection and endangered species and explain to them to be careful when using them;
- It is necessary to strictly limit livestock grazing and the use of pastures in areas where representatives of the Brassicaceae family grow;
- Identify rare and declining species of the Brassicaceae family, find their growing areas and protect them;

One of the important tasks is to restore their numbers in specially protected areas;

In order to preserve the bioecological diversity of our planet and maintain the stability of the environmental situation, it is important to preserve and scientifically study plant species. Therefore, the study of plants of the Brassicaceae family, the preservation and restoration of existing species, the study and care of species included in the Red Book but for which protection measures have not been developed, are of great practical importance not only for humans but also for nature.

To protect these representatives of the Brassicaceae family:

- In-depth scientific study of the bioecological characteristics of representatives of the Brassicaceae family;
- Development of special measures to increase the number of representatives of the Brassicaceae family and restore their existing numbers in nature;
- Introducing the population to species in need of protection and endangered species and explaining to them to be careful when using them;
- It is necessary to strictly limit livestock grazing and the use of pastures in areas where representatives of the Brassicaceae family grow;
- Identifying rare and declining species of the Brassicaceae family, finding and protecting their growing areas;

One of the important tasks is to restore their numbers in specially protected areas;

In order to preserve the bioecological diversity of our planet and maintain the stability of the environmental situation, it is important to preserve and scientifically study plant species. Therefore, studying plants of the Brassicaceae family, preserving and restoring existing species, studying and caring for species that are included in the Red Book but for which protection measures have not been developed, is of great practical importance not only for humans but also for nature.

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