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RANGE OF THE GRASSY ORNAMENTAL PLANTS COLLECTION IN THE PARTERRE PART OF BSTU BOTANICAL GARDENS

The results of the study of species diversity and condition of herbaceous decorative plants in the collection of parterre part of BSTU Botanical Gardens are given. Studies have shown that among the herbaceous ornamental plants in modular compositions and shady gardens and rockeries the largest group consists of perennial flower culture. It is noted that within the number of crop cultivars in compositions dominates daylily, while the least amount is represented by Heuchera cultivars. According to the observations conducted of perennial flowering plants, most species and cultivars of the studied collection are considered to belong to the decorative and flowering plants group. Less numerous in the number of species and cultivars in the compositions of the parterre part of the BSTU Botanical Gardens is a group of decorative foliage plants, which showed a variety of plants leaf color, shape of the leaf blade, the height of the plant. The results of the evaluation show that all perennial ornamental plants growing in the parterre part of BSTU Botanical Gardens have sufficiently high decorative quality.

Key words: botanical gardens, flower crops collection, assortment, introduction, species, cultivar, composition.

Introduction. Assortment widening of perennial flower cultures for cultivation in an open ground in the conditions of Belarus on the basis of utilization of new kinds and cultivars is one of the major applied problems of introduction researches. BSTU Botanical Garden is a scientific base for work in this field since 1991–1992 when a collection of decorative flowers was laid in its parterre part.

Now there are collection plantings of irises, peonies, day lilies, hostas, phloxes, Heucheras on the territory of the botanical garden and also other perennial flower cultures grow. Their most part is concentrated in compositions of the modular garden, shady garden and rockery and according to modern trends of landscape design is grouped with collection plantings of tree species presented by big enough diversity of kinds and cultivars of plants with beautiful flowers, decorative-deciduous and coniferous plants [1, 2].

Main part. To study the prospects of gene pool enrichment of herbaceous decorative plants and compositions perfection with their participation in the parterre part of BSTU Botanic Garden

the field observations of collections and separate cultivars of perennial flower cultures were conducted in the course of which their morphological characters (plant height, flower colour, inflorescences pattern, blooming period, leaves colour) were studied. So, for example, 7 cultivars were chosen for detailed monitoring from the collection of peonies, 5 cultivars from 3 groups – from the collection of irises. Besides the recount of kinds and cultivars of herbaceous decorative plants the assessment of their state in compositions (on a five-point scale) was also done.

Now the collection of decorative flowers in plantings of the parterre part of BSTU Botanical Garden numbers 236 perennial (astilbe, iris, day lily, narcissus, peony, rose, tulip, hosta, etc.) flower cultures (see the Table).

The most extensive group among herbaceous decorative plants consists of perennial flower cultures. Day lily kinds dominate in plantings according to the quantity of kinds, kinds of Heuchera and small bulbous plants are presented in the least quantity.

Collection composition of the basic perennial flower cultures in the parterre part of BSTU Botanical Garden

Culture	Cultivars number, pieces	Blooming period	Plants number in the collection, pieces
Tree peony	5	Beginning of July – August	7
Peony	30	May – June	92
Iris	23	May – August	131
Day lily	52	July – August	178
Phlox	13	May – August	35
Hosta	15	June – August	62
Heuchera	3	May – July	16
Bulbous plants	17	April – May	43
Small bulbous plants	5	April – May	27

The majority of species and kinds of the collection under study belong to decorative flowers. Less numerous according to the number of species and kinds is the group of decorative foliage plants in the parterre part of BSTU Botanical Garden, where there is big enough diversity of plants according to leaves colour, lamina form, above-ground part height.

The proportion of the plants specimens included into the collection approximately corresponds to the number of cultivars proportion (Fig. 1). Cultivars of day lily were planted in the greatest quantity in the compositions of BSTU Botanical Garden, heucheras – in the least.

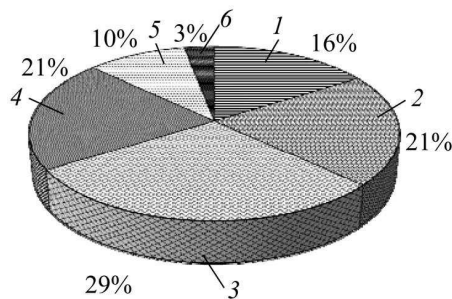


Fig. 1. Proportion of perennial flower cultures planted in the parterre part of BSTU Botanical Garden according to the number of specimens:
 1 – peony; 2 – phlox; 3 – day lily;
 4 – iris; 5 – hosta; 6 – heuchera

Distribution analysis of decorative foliage and decorative-blossoming perennial cultures in compositions of modular and shady gardens and rockery with different composite (regular and landscape) stylistics (Fig. 2) was also of interest.

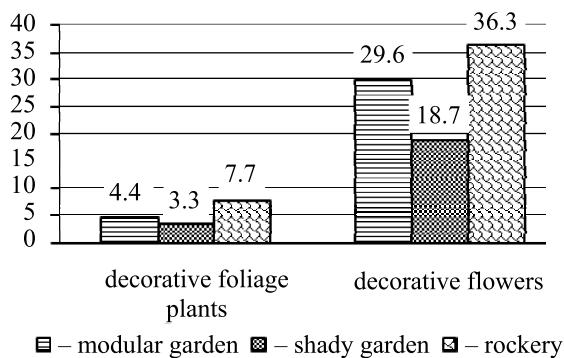


Fig. 2. Proportion of different groups of perennial flower cultures in compositions of the parterre part of BSTU Botanical Garden, %

It is noted that the majority of both decorative foliage and decorative-blossoming perennial flower cultures is present in the plantings of the rockery, and the least amount of kinds of perennial flower cultures – in the shady garden.

There are 52 cultivars in the collection of day lilies growing on the territory of BSTU Botanical Garden. It is the greatest collection of the perennial flower plants the representatives of which are highly decorative both during blooming and from the point of view of the expressed dimensions of the above-ground plant part, it is usually rather valuable quality at making compositions.

Iris sort collection includes 23 cultivars, among them there are 16 cultivars of hybrid iris, 2 cultivars of *Iris sibirica*, 2 cultivars of *Iris ensata*, 2 cultivars of *Iris pumila* and 1 cultivar of *Louisiana irises*. Among representatives of the Iris sort the plants blossoming in first half of summer (67%) prevail in the collection of BSTU Botanical Garden; further follow cultivars of May blooming period (24%) and the smallest is the plants group blossoming in August – September (9%).

The phloxes collection of 13 cultivars with different flowers colour and blooming period is also of interest.

Hostas – about 15 cultivars – is the biggest group of decorative-deciduous perennial plants, with leaves of different colour and type. The smallest collection of the perennial flower cultures growing on the territory of BSTU Botanical Garden – is the collection of heucheras, including 2 cultivars of *Heuchera* and 1 of *Heucherella*.

The collection of bulbous plants is presented by cultivars of tulips, hyacinths, narcissuses, and also by small bulbous plants. There are small amounts of lilies in the plantings (mixture of cultivars), planted in 2009–2011. Cultivars of hyacinth and narcissus are planted in the collection in 2014.

Besides the described above collections of the principal perennial flower cultures in the parterre part of BSTU Botanical Garden there is a considerable quantity (73 kinds and cultivars) of other decorative herbaceous perennial plants, with blooming period mainly in spring and summer.

Also the state assessment of herbaceous decorative plants in compositions of the modular garden, shady garden and rockery (Fig. 3, 4) was done.

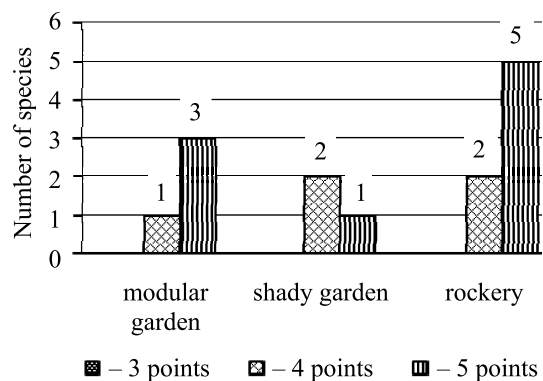


Fig. 3. State of decorative foliage perennial flower cultures in compositions of the parterre part of BSTU Botanical Garden

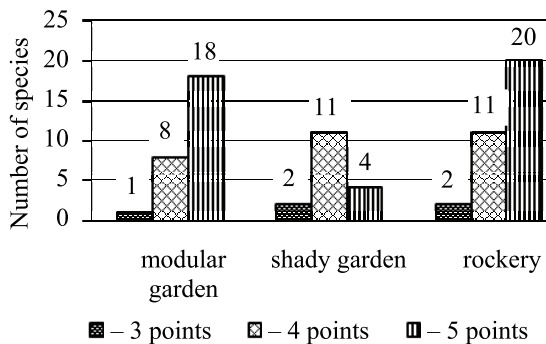


Fig. 4. State of decorative-blossoming perennial flower cultures in compositions of the parterre part of BSTU Botanical Garden

Assessment results show that practically all studied perennial decorative flowers have high ornamental qualities. According to the made data analysis the excellent state of decorative foliage and decorative-blossoming plants is observed on rockery territory. No decorative foliage plants in the satisfactory state were found in compositions on the territory of the parterre part of BSTU Botanical Garden.

Conclusion. The conducted researches showed that the collection plantings of perennial flower cultures in the parterre part of BSTU Botanical Garden have rather wide species and varietal diversity, at

the same time it is expedient to work out a long-term plan of introduction of perennial flower cultures, to upgrade the available ones and to create new flower-decorative compositions with participation of flower cultures of perspective assortment.

From our point of view, the following cultures should be included in the long-term plan of introduction of flower perennial cultures in the parterre part of BSTU Botanical Garden:

- decorative foliage perennial flower cultures, their kinds and cultivars;
- decorative graminoids, perspective for usage in landscape gardening and for creation of floristic compositions;
- flower cultures with the expressed odour for creation of aromatic flower beds;
- perennial flower cultures with summer-autumnal blooming periods, first of all cultivars of *Chrysanthemum koreanum*;
- perennial flowers for decoration of the ornamental pond which is in the parterre part of the Botanical Garden;
- species and cultivars of local flora herbaceous plants;
- plants for the pond landscape gardening;
- small berry bushes with the expressed decorative qualities.

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