

MORPHOLOGICAL FEATURES AND SOME CROP QUALITIES OF SIBERIAN IRIS SEEDS

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The study of the characteristics of the fruiting and sowing qualities of seeds of rare and protected plant species plays an important role in the practical methods of protecting species listed in the Red Book of the Republic of Belarus (introduction, reintroduction).

The purpose of this research is to study the morphological features and some sowing qualities of seeds of a protected species of the Republic of Belarus – Siberian iris (*Iris sibirica* L.).

Material and methods. The material of our study is the seeds of representatives of three natural populations of Siberian iris, which are contained in the introduction nursery of the botanical garden of the Vitebsk State University and representatives of one natural population located in the floodplain Shevinka, Vitebsk district, Vitebsk region. In the future we will call them a sample followed by the number:

Sample 1: taken in the vicinity of the village of Sloboda, Ushachsky district, on the island of Velezhie ozero. Cherstyatskoe and is contained in the botanical garden of the Vitebsk State University;

Sample 2: taken in the vicinity of the village of Kosovshchina in the Ushachsky district on the east coast of the lake Otolovo and contained in the botanical garden of Vitebsk State University;

Sample 3: taken on the south-eastern outskirts of the city of Vitebsk in the micro-district South 7 and contained in the culture in the botanical garden of the Vitebsk State University;

Sample 4: taken on the south-eastern outskirts of Vitebsk in the micro-district South 7 and is found in culture in the botanical garden of the Vitebsk State University;

Sample 5: grows in the vicinity of the village Shevino of the Vitebsk district in the floodplain of the r. Shevinka.

Siberian Iris is protected in the status of the IV category of national environmental value. It is included in the 1st – 3rd editions of the Red Book of the Republic of Belarus. Included in the Red Books of Latvia, Lithuania, Pskov and Bryansk regions of the Russian Federation, Ukraine [1, p. 242 – 243].

Studies were performed in 2017 – 2018. The peculiarities of fruit bearing and sowing qualities of seeds were studied using methodological guidelines for seed breeding of introduced plants [2]. The results are statistically processed using Microsoft Excel.

Findings and their discussion. In this paper, the description was carried out only on the external morphological features. Seed sizes are given in mm.

Length – the distance from the hem up, width – the greatest-neck distance perpendicular to the length. A binocular with a measuring scale was used to determine the linear dimensions. The form is characterized by similarity with geometric or other bodies, based on the ratio of length to width.

Data on the linear sizes of seeds of representatives of different populations of Siberian iris in culture and in nature are presented in Table 1.

Table 1

Linear dimensions and sowing qualities of seeds of Siberian Iris in culture and in nature

Sample	Length, mm	Maximum width, mm	Ratio of length to width, mm	Weight 1000 seeds, g
1	5,46 ± 0,1	3,92 ± 0,07	1,4 ± 0,03	11,66 ± 0,48
2	6,72 ± 0,07	4,48 ± 0,06	1,51 ± 0,02	15,88 ± 0,56
3	5,44 ± 0,08	4,12 ± 0,12	1,34 ± 0,04	17,35 ± 0,46
4	5,37 ± 0,07	3,76 ± 0,07	1,44 ± 0,02	12,75 ± 0,34
5	6,04 ± 0,12	4,07 ± 0,1	1,5 ± 0,04	12,01 ± 0,48

The length of the seed of Siberian iris ranges from 5.37 ± 0.07 mm to 6.72 ± 0.07 mm. Seed width from 3.76 ± 0.07 mm to 4.48 ± 0.06 mm. The longest seed length for sample 2 and 5, the width for samples 2 and 3. The ratio of length to width characterizes the shape of the seed. The smaller the ratio, the more rounded the seeds. More rounded seeds in sample 3.

The mass of 1000 seeds characterizes their size. The fuller the seeds, the better their quality. Full-grown and aligned seeds give friendly shoots, the plants develop evenly in the future. Fuller seeds in sample 2 and 3.

Seed germination of *I. sibirica* was determined in the laboratory and in the field. In laboratory conditions, the seeds were germinated in Petri dishes in a greenhouse. Watched for germination of seeds daily. The established observation period was 45 days, after which the germinated seeds were counted.

In determining the germination of seeds in the field, five samples of each sample, 100 seeds in open ground, were sown in the fall of 2017 in the botanical garden of the Vitebsk State University. The testimony was filmed in June 2018. The results of seed germination of *I. sibirica* in laboratory and field conditions can be seen in table 2. The highest germination rate was shown in sample 5 (natural population). Samples 3 and 4 showed a smaller left germination.

Table 2

Seed germination of *I. sibirica* in laboratory and field conditions

Sample	Laboratory germination,%	Field germination,%
1	16,4 ± 1,04	55 ± 5,25
2	12,35 ± 1,14	62,12 ± 6,48
3	13,7 ± 1,85	47,34 ± 4,64
4	10,1 ± 1,35	58,4 ± 3,47
5	17 ± 2,12	71 ± 2,35

Field germination surpassed laboratory in 2–5 times. This is due to the natural stratification in winter, which took place the seeds of Siberian Iris when sown in the ground in the fall.

Conclusion. Laboratory germination of seeds of Siberian Iris, obtained in culture, was 10.1 – 16.4%, and seeds collected in nature – 17%. The field germination of Siberian iris seeds obtained in culture was 47.34–62.12%, and the seeds collected in nature – 71%. Germination of seeds collected in nature, has a higher performance than the seeds collected in culture in the laboratory and in the field.

Reference list:

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THE IMPACT OF COMPUTER TECHNOLOGY ON THE HEALTH OF STUDENTS

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Currently the most important indicator of the level of scientific development, economic and defense power of the state is information. Today, according to its social significance, the informatization of society is comparable to its industrialization. Informatization provides not only the growth of economic indicators, the development of the national economy, but also reacting new scientific achievements in the basic and applied sciences aimed at the development of production, the creation of new jobs, improving living standards.