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## ИЗВЕСТИЯ

НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК  
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## NEWS

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**INTRODUCTION AND STURDYING OF PROSPECTIVITY  
OF HYBRID IRIS VARIETY IN MANGYSTAU ARID CONDITIONS**

**Abstract.** The article describes the results of the introduction study of variety of Irises in the Mangyshlak experimental botanical garden (further MEBG) collection. The purpose of our research is targeted introduction researches, a comprehensive study of decorative qualities and the selection of varieties that are promising for the green building of Mangystau region.

The study of biological features and the definition of a comprehensive assessment of the decorative characteristics of variety of irises were carried out according to generally accepted methods of R.A. Karpisonova, V.N. Bylova, E.L. Tyshchenko and Yu.V. Timkina, Reshetnikova L.F. and using the MEBG Regional Integrated Scale.

The introduction of *Iris* L. in Mangyshlak Botanical Garden began in 1978. The modern collection of floral and ornamental plants of MEBG is represented by 98 varieties of hybrid iris. To assess the promising qualities of hybrid iris varieties, we have selected 20 varieties from the collection of flower and ornamental plants of the MEBG, introduced from 2009 to 2014.

During assessing the promising qualities of iris varieties, 11 diagnostic features were considered: drought resistance, phytophagy resistance, resistance of the flower to the effects of external environmental factors, color, size, flower shape, flowering time, height and strength of flower stalk, and reproductive ability.

According to the results of the research, 1 variety of iris (Add It Ap) of medium prospectivity (51-60 points) with low decorative qualities was revealed.

6 varieties are classified as promising (less than 70 points) for cultivation in Mangystau conditions: Michael Paul, White Queen, Cry Baby, Pumpkin Iron, Indian Pow Wow, Fires Form.

From the studied taxons, 9 varieties with high prospects (71 -80 points) were identified: Kiwi Capers, Swish, May Magic, Margarita, Marina Raskova, Bronze Bell, Butterfly Bower, Grace Sturtevant, Ilsan.

4 varieties were assigned as very high-potential (81-90 points) for Mangystau: Bazaar, Port Wine, Tomeco, Star Shine.

**Keywords:** introduction, Iris, varieties, complex scale, perspective, conditions of Mangystau.

**Introduction.** At the modern stage of green building it is required to pay especial attention not only to the resistance of plants against negative environmental factors and to decorative effect as well. One of the directions of scientific works of Mangyshlak experimental botanical garden is domestication of new promising introductive types and varieties of plants and development of planting assortment in Mangystau, which is characterized by especially harsh soil & climatic conditions: hot dry summer, dust storms, hot dry winds, constant water deficit, almost snowless winter with frequent cold winds [1].

The most popular plants in flower decoration of the cities and towns are irises. Along with the high decorative qualities they are winter-hardy, distinguished by abundant annual flowering and high coefficient of vegetative propagation [2, 3].

In the landscaping of towns and cities of Mangystau region the irises are mainly presented in old variety, which are well adapted to local conditions, but not differ in color and shape of flower. The purpose of our researches is targeted introductive researches, comprehensive studying of decorative qualities and selection of varieties promising for green building of Mangystau region.

**Object and methods of research.** The researchers are performed within the frame of granted project “Introduction of promising variety and form of ornamental plants in Mangystau conditions to save their biodiversity and widespread introduction into green building practice”

The targets for researches was served short-growing, medium-grown and tall-growing of *Iris hybrida* hort. varieties from collection of ornamental plants of Mangyshlak experimental botanical garden. To establish the features of seasonal growth and plant development and data collection, characterizing their resistance in new conditions when introduction, the phenological observations on methodology accepted by botanical garden session [4, 5] and agrotechnical care according to regional recommendations of botanical garden [6] were carried out to iris varieties.

Rootstalk were planted on checks in size 2 x 3m, with planting step from 0,1 to 0,2m. During the growing season the plants regularly watered in two or three times a week [7].

Studying of biological features and definition of the comprehensive assessment of decorative characteristics of iris varieties were carried out by generally accepted methodology: R.A.Karpisina [8, 9], V.N. Bylova [10], Y.L.Tyshchenko and Yu.V. Timkina [11], Reshetnikova L.F. [12] and using the regional comprehensive scale developed in Mangyshlak experimental botanical garden [13, 14].

**Results and discussions.** Introduction of *Iris* L. in Mangyshlak experimental botanical garden began in 1978. The rootstalks *Iris germanica hort. of varieties* ‘Aegir’, ‘Ai’, ‘Maori King’, ‘Oberon’, ‘Lime Light’ was firstly brought from Karagandy botanical garden (Karagandy), and in 1979-80 seeds of *Iris setosa*, *Iris pseudacorus*, *Iris spuria*, *Iris halophila* from the botanical garden of Institute of Botany of AS Lithuanian SSR (Kaunas). In 1984-88 rootstalks of 2 types (Siberian and leather like iris), 7 varieties (“Galina Ulanov”, ‘Pink Formal’, ‘Pride of Dover’, ‘Sabre’, ‘Solid mahogany’, ‘Unicorn’, ‘Wabash’) and 2 forms (dwarf blue iris and dwarf yellow iris) of iris were involved from Karagandy and botanical garden of Almaty [14, 15].

Most variety of iris were introduced from 2009 to 2016: 2 variety - ‘Bronze Bell’, ‘Bazaar’ from Zhezkazgan botanical garden (2009), 13 varieties - ‘White Queen’, ‘Lotario’ ‘Indian Pow Wow’, ‘Buttercup Bower’, ‘Grace Sturtevant’, ‘Ilsan’, ‘La Beaute’, ‘May Magic’, ‘Margarita’, ‘Port Wine’, ‘Tomeco’, ‘Marina Raskova’, ‘Royal Ruffles’ from Altay botanical garden (2009, 2014); in 2013 7 dwarf varieties- ‘Pumpin Iron’, ‘Add It Ap’, ‘Kiwi capers’, ‘Cry Baby’, ‘Michael Paul’, ‘Swish’, ‘Firestorm’ from main botanical garden of Moscow [17-20].

In recent years the collection of ornament plants are replenished by new varieties, not previously represented in collection. In 2018 within the frame of granted project at the territory MEBG the new section for monocultural hybrids is created. For first introduction testing in autumn 2017 the rootstalk of 33 varieties of hybrid iris was involved from Central botanical garden of Belarus (Minsk) and Botanical garden of Lomonosov MSU (Moscow). The new varieties of iris were involved into MEBG collection from Altay botanical garden – 20 varieties in October 2018, and 21 variety of iris from Main botanical garden named after V.Tsitsin (Moscow) in spring, 2019. Therefore, 74 new variety of irises involved into collection for 2017-2019. All new invasive plants are successfully growing. The modern collection of ornament plants of MEBG is represented by 98 varieties of hybrid iris.

To assess the promising qualities of variety of hybrid iris we have selected 20 varieties from the collection of ornament plants of MEBG, introduced from 2009 to 2014.

11 diagnostic features were considered during assessment of promising qualities of iris varieties: drought resistance, phytophagy resistance, resistance of the flower to the effects of external environmental factors, color, size, flower shape, flowering time, height and strength of flower stalk, reproductive ability and diagnostics based on success of renewal of plants in vegetative way culture.

Upon the result of obtained data, it is found that all varieties of irises in arid conditions of Mangystau are distinguished by high drought resistance. The plant weakly responds to dry hot period, has normal terminal shoots, characteristic for taxon of leaves color, turgor of leaf apparatus may decrease during the day at maximum temperature and solar radiation, but quickly recovers in evening & morning hours.

On the basis of "Phytophagy resistance", plant susceptibility of pathogens at the end of the growing season and damage to plants by pests was considered. During research in all varieties of irises there was no damage of vegetative and generative organs.

The variety of iris which not respond to environmental factors for morphological signs of flower structure obtains high score. They are Port Wine, Tomeco, Grace Sturtevant, Pumpin Iron, Indian Pow

Wow, Ilsan, Kiwi Capers, Bronze Bell, Bazaar. Other varieties during low air humidity and high temperature the petal color is fade in and the flowers are become deformed.

The collection includes variety of different colors: single-colored, bicolored, duplex ink, broken. Bicolored varieties have the different colors of outer and internal particles of perianth, and duplex ink varieties are distinguished by strength of colors of outer and internal particles of perianth. The variety with “broken” color of perianth particle is random dyeing in strokes, splashes or stripes : In iridescent varieties the one tonality shade into a nother.

The highest mark is given to the varieties which have the clear bright color, from 2 and more colors: Margarita, Kiwi Capers, Tomeco, Marina Raskova, Pumpkin Iron, Cry Baby.

Most large-sized flowers (till 16 cm in dia) are detected in tall-growing irises: May Magic, Margarita, PortWine, Tomeco, BronzeBell, Bazaar.

During assessment of flower shapes the availability of waviness, corrugation of perianth segments was observed. 4 varieties of low growing irises group obtained high mark: PrettyShish, Indian Pow Wow, Kiwicapers, Fires Form, from high irises the following varieties mentioned: May Magic, Star Shine, Port Wine.

The height of flower stalk of irises varieties depends on variety features and soil and climatic conditions. The following varieties are designated on the height of flower stalk in the collection: low growing (25-35 cm) – Indian Pow Wow, Pumpkin Iron, Add It Ap, Kiwi Capers and etc., medium growing (35-70 cm) – Marina Raskova, White Queen, Grace Sturtevant; high growing (70-100 cm) May Magic, Margarita, Port Wine, Tomeco, Buttercup Bower and others. According to the results of flower stalk strength assessment the highest point was given to the following varieties: Marina Raskova, May Magic, Margarita, Port Wine, Buttercup Bower.

In Mangystau conditions 85 % of studied varieties, the flowering duration is 10-13 days. Only in varieties White Queen, Indian Pow Wow, Pumpkin Iron, Add It Ap the flowering continues to 9 days.

In Mangystau conditions the number of simultaneously open flowers in flower shooting reaches up to 5 flowers. The high mark from low growing irises is given to IndianPowWow (3 flowers simultaneously open flowers); from medium growing group: GraceSturtevant (3 flowers) and 4 varieties from high growing irises group: MayMagic, Margarita, Star Shine, Bazaar, that having from 4 to 7 simultaneously open flowers in flower stalk.

During assessing the ability to vegetative propagation, the natural productivity of varieties is taken into consideration, considering their net reproduction for 3 years annually formed innovations [21]. The variety of low growing irises has more intensive root stalks formation (above 15 sections for 3 year) in compare with medium growing and high growing irises (8-11 particles). The highest score in intensity of vegetative propagation was obtained by 3 low growing variety of irises, that formed more than 15 particles for 3rd year of planting Indian Pow Wow, Kiwicapers, Add It Ap. From the medium growing irises group 1 variety (White Queen), and from high growing irises 6 varieties (Bazaar, Buttercup Bower, Star Shine, Port Wine, May Magic, Margarita) formed 8000-10 particles for 3<sup>rd</sup> year of planting.

As a result of our evaluation of introduced variety of irises, the studied assortment on use prospectivity in ornamental flower gardening was divided into 4 groups: medium, increased, high and sky high.

Under the results of researches 1 variety of iris was detected – Add It Ap of the medium prospectivity ( 51-60 points), has low decorative qualities.

6 varieties having medium decorative qualities in flower stability to external factors, in size and forms of flowers is defined as increased prospectivity ( less than 70 points) for cultivation in Mangystau conditions. They are Michael Paul, White Queen, Cry Baby, Pumpkin Iron, Indian Pow Wow, Fires Form.

9 varieties of studied taxons are defined as high promising (71-80 points), which have decorative qualities such as bright, two-color paint, original form and large size of flower, resistance of flower stalk, ability to vegetative propagation. This group of perspective includes 9 variety from 3 groups of irises: Kiwi Capers, Swish, May Magic, Margarita, Marina Raskova, BronzeBell, ButterflyBower, Grace Sturtevant, Ilsan.

4 varieties which have complex of value character on flower resistance to external factors, bright color, original flower form, abundant and long-term floescence are assigned as very high perspective ( 81-90 points) for Mangystau. They are Bazaar, Port Wine, Tomeco, Star Shine.

These varieties of irises on prospectivity level are described below.

From “medium prospectivity” group:

'Add It Ap' is drought resistant. Damaging by disease and pests is average. In the sun the edges of petal are faded and paled.

Color type of flower is one-color, iridescent. The color of the perianth segments are following: internal - yellow, the edges are brighter, the external ones are yellow, with wine-purple specks, orange beard, blue at the tips. The flowers are average, 7-8 cm in height; the perianth segments are slightly corrugated. The height of the flower stalk is 23-25 cm. There are 4 flowers in the inflorescence. Duration of flowering is 8 days. Overgrowth ability is average.

From "increased prospectivity" group:

Michael Paul. Drought resistant and phytophagous resistant. In hot sun, petal edges do not fade away and do not lose color.

The type of flower color is monochrome. The color of the flower is rich purple, velvety, the beard is dark blue. The flowers are medium, 6-7 cm in height, the edges of the perianth segments slightly wavy. The height of the flower stalk is 20-25 cm. There are 3-4 flowers in the inflorescence. Flowering is abundant, the duration is 12 days. Overgrowth ability is medium.

White Queen. Drought resistant. Damaging by diseases and pests is medium. In hot sun, petal edges fade away and turn yellow.

Color type is monochrome. Perianth segment color is white, beard is yellow. The flowers are large, 9-10 cm in height, the edges of the perianth segments are even. Flower stalk is 65-75 cm in height, durable. The inflorescence contains 3 flowers. Flowering is abundant, duration is 13 days. Overgrowth ability is high.

Cry Baby. Drought-resistant. Damaging by disease and pests is low. In the sun, the edges of the petals fade slightly.

The type of flower color is monochrome. Coloring of perianth segments pale blue, almost white, there are large olive-yellow spots at the base of the outer segment, beard is blue. The flowers are medium, 7-8 cm in height, the edges of perianth segments slightly corrugated. The flower stalk is in height 23-27 cm. The inflorescence consists of 4 flowers. Flowering is abundant, duration is 14 days. Outgrowth ability is average.

Pumpin Iron. Drought and phytophagous resistant. In hot sun, petal edges do not fade and do not lose color.

The color of the flower is two-color, the inner segments are red-violet, the outer ones are dark cherry with a red-violet border, and the beard is purple. The edges of the perianth segments are slightly corrugated. The flower stalk 25-28 cm in height. There are 3 flowers in the inflorescence. The flowers are average, 7-8 cm in height. Flowering is abundant, duration is 12 days. Outgrowth ability is average.

Indian Pow Wow. Drought resistant, phytophagous resistant. In hot sun, petal edges fade away slightly and turn pale.

Color type of flower with "broken" color. Inner perianth segments are creamy with brown splashes, outer are dark brown, with yellow stripes and brown splashes, beard is blue. The edges of the perianth segments are corrugated. Flower stalk height is 31-35 cm. There are 3 flowers in the inflorescence. The flowers are average, 6-7 cm in height. Flowering is abundant, duration is 12 days. The outgrowth ability is high.

'Firestorm'. Drought resistant, phytophagous resistant. In hot sun, petal edges fade away slightly and turn pale.

Color type of flower with "broken" color. Inner perianth lobes are purple-wine with a dull yellow lumen in the center, outer ones are yellow with a wine-purple speck and border. Perianth segments edges are weakly crinkled. Flower stalk is 23-25 cm in height. There are 3 flowers in the inflorescence. The flowers are average, 6-7 cm in height. Duration of flowering is 11 days. Growth ability is average.

From "high prospectivity" group:

'Kiwi Capers' is drought resistant, phytophagous resistant. In hot sun, petal edges turn slightly pale.

The type of flower color is monochrome. Color of perianth segments is pink, beard is bright orange. Perianth segment edges are weakly crinkled. Flower stalk height is 23-25 cm. There are 3-4 flowers in the inflorescence. The flowers are average, 7-8 cm in height. Flowering is abundant, duration is 14 days. Growth ability is average.

Swish is drought-resistant. Damaging by diseases and pests is low. In hot sun, petal edges do not fade and do not lose color.



The type of flower color is monochrome with “broken” color. The color of perianth segments is brown-yellow, copper-brown along the edge and brown with specks in the center, beard is orange. Perianth segment edges are weakly crinkled. Flower stalk is 25-28 cm in height. The inflorescence contains 3-4 flowers. The flowers are average, 6-7 cm in height. Duration of flowering is 12 days. Growth ability is average.

May Magic is drought-resistant. Damaging by diseases and pests is low. In hot sun, petal edges do not fade and do not lose color.

Color type flower is double-tone ink. Coloring of perianth segments is pale pink-lilac, beard is yellow. The edges of the perianth segments are corrugated. Flower stalk height is 80-90 cm. There are 6-7 flowers in the inflorescence. The flowers are very large, 10-12 cm in height. Duration of flowering is 11 days. The outgrowth ability is high.

‘Margarita’ is drought resistant. Damaging by diseases and pests is average. In hot sun, petal edges do not fade and do not lose color.

The type of flower coloring is two-color. The color of the inner petals is white, the outer is purple, and the beard is blue. The edges of the perianth segments are corrugated. Flower stalk is 80-90 cm in height. There are 7-9 flowers in the inflorescence. The flowers are large, 9-11 cm in height. Duration of flowering is 12 days. The outgrowth ability is high.

Marina Raskova is drought resistant. Damaging by diseases and pests is average. In hot sun, petal edges do not fade and perianth edges is pale.

The flower color type is monochrome with “broken” color. The internal petals are pink, outer is dark-pink, mottled with lilac strokes, the beard is red. Perianth segment edges are weakly crinkled. The flower stalk height is 65-75 cm. There are 5-7 flowers in the inflorescence. The flowers are large, 8-10 cm in height. Duration of flowering is 13 days. Outgrowth ability is average.

‘Bronze Bell’ is drought resistant. Damaging by diseases and pests is low. In hot sun, petal edges do not fade and do not pale.

The flower color type is monochrome. Coloring of perianth segments is copper-brown, beard is dull orange. The edges of the perianth segments are smooth. The flower stalk is 75-80 cm in height. It has 6 flowers in inflorescence. The flowers are very large, 10-12 cm in height. Duration of flowering is 12 days. Outgrowth ability is high.

‘Buttercup Bower’ is drought resistant. Damage by diseases and pests is average. In the sun, they do not fade; the edges of the petals slightly lose their color.

Color type flower is double tone ink. The inner segments are yellow, the outer ones are white with a broad bright yellow border, and the beard is yellow. The edges of the perianth segments are corrugated. The flower stalk is 85-90 cm in height. There are 5-7 flowers in the inflorescence. The flowers are very large, 10-14 cm in height. Duration of flowering is 15 days. Outgrowth ability is high.

‘Grace Sturtevant’ is drought resistant. Damaging by diseases and pests is low. In the sun they do not fade and do not lose color.

The type of flower color is monochrome with “broken” color. The inner segments are brown, the outer ones are maroon-brown, yellow with wine-purple specks in the center. Perianth segments edges are even. Flower stalk height is 60-65 cm. There are 5 flowers in the inflorescence. The flowers are large, 8-9 cm in height. Flowering is abundant, duration is 12 days. Outgrowth ability is high.

Ilсан’ is drought resistant and phytophagous resistant. The petals are resistant in the sun.

The type of flower color is monochrome with “broken” color. The inner segments are mauve, the outer ones are dark maroon-red with a dark grid on a light background at the base, the beard is yellow. The edges of the perianth segments are weakly corrugated. The flower stalk is 80-85 cm in height. The inflorescence has 4-5 flowers. The flowers are large, 8-10 cm in height. Flowering is abundant, duration is 13 days. Outgrowth ability is high

From “Sky High prospectivity” group :

‘Bazaar’ is drought resistant. Damaging by diseases and pests is low. In hot sun, they do not fade and do not lose color.

The flower color type is double tone ink. The internal segments are light blue, the outer ones are dark purple, with purple veins in the center. The edges of the perianth segments are weakly corrugated. The flower stalk height is 60-65 cm. The inflorescence has 5 flowers. The flowers are large, 8-9 cm in height. Flowering is abundant, duration is 13 days. Outgrowth ability is high.

'Port Wine' is drought resistant. Damaging by diseases and pests is low. In the sun, the petals do not fade and do not lose color.

Type of flower color is monochrome. Perianth segments edges are purple-black, beard is dark-blue. Perianth segment edges are even. The flower stalk is 70-75 cm in height. The inflorescence has 6-7 flowers. The flowers are large, 8-9 cm in height. Flowering is abundant, duration is 12 days. Outgrowth ability is high.

'Tomeco' is drought resistant. Damaging by diseases and pests is low. In the sun, the petals do not fade and do not lose color.

The type of flower color is monochrome. Coloring of perianth segments are dark brown, beard is yellow. Perianth segments edges are corrugated. The flower stalk is 80-85 cm in height. There are 6-8 flowers in inflorescence. The flowers are large, 10-11 cm in height. Flowering is abundant, the duration is 15 days. Outgrowth ability is high.

'StarShine' is drought resistant, phytophagous resistant. In hot sun, petal edges do not fade and do not lose color.

The type of flower color is monochrome. Coloring of perianth segments is white, the base is yellow, beard is yellow. The edges of the perianth segment are finely corrugated. Flower stalk height is 77-83 cm. There are 5-7 flowers in the inflorescence. The flowers are very large, 9-11 cm in height. Flowering is abundant, duration is 14 days. Outgrowth ability is high.

**Conclusion.** Based on many years tests conducted at Mangyshlak Experimental Botanical Garden for the cultivation and reproduction of irises, both cultivated varieties and wild species, we can conclude that Mangyshlak has favorable climatic conditions that allow to grow irises without shelter for the winter. Irises can adapt to the most difficult soil and climatic conditions, which indicates of their unusual plasticity. The use of irises in the landscaping of the peninsula presents no problems and contributes to the enrichment of the floral and decorative range. By applying them for landscaping, you can create colorful flower spots where other more demanding plants feel oppressed.

Thus, the developed regional scale allows for a more objective and directed selection of the best varieties of irises for use in ornamental gardening, depending not only on their group membership, but also on indicators of biological stability, decorative qualities and reproductive performance. As a result of a comprehensive assessment, 9 highly promising and 4 very high promising iris varieties were identified that allow to create decorative floral compositions of various types in the Mangystau arid, and thereby replenish the range of ornamental perennial plants with new varieties.

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#### **АРИДТІ МАҢҒЫСТАУ ЖАҒДАЙЫНДА ГИБРИДТІ ҚҰРТҚАШАШТАР СҰРЫПТАРЫН ИНТРОДУКЦИЯЛАУ ЖӘНЕ ПЕРСПЕКТИВТІЛІГІН ЗЕРТТЕУ**

**Аннотация.** Мақалада Маңғыстау эксперименталдық ботаникалық бағы (әрі қарай МЭББ) коллекциясындағы құртқашаштар сұрыптарының интродукциясын зерттеу нәтижелері сипатталған. Жұмыстың зерттеу мақсаты гибридті құртқашаштар сұрыптарын мақсатты интродукциялау, ол сұрыптардың сәндік сапасына кешенді зерттеу жүргізіп, Маңғыстау облысының жасыл құрылыс саласына қолданылу үшін перспективті сұрыптарын бөлу.

Құртқашаштар сұрыптарының биологиялық ерекшеліктері мен сәндік белгілерін кешенді бағалау үшін жалпы мақұлданған әдістер: Р.А. Карпионова, В.Н. Былов, Е.Л. Тыщенко және Ю.В. Тимкина, Решетникова Л.Ф. және МЭББ аймақтық кешенді шкаласы қолданылды.

МЭББ *Iris* L. интродукциялау жұмыстары 1978 жылдан бастау алады. Қазіргі таңда МЭББ гүлді-сәндік өсімдіктер коллекциясында гибридті құртқашаштардың 98 сұрыпы бар. Құртқашаштар сұрыптарының перспективтілігін анықтау үшін коллекциядағы 2009-2014 жылдар аралығына жерсіндірілген 20 сұрыпы таңдап алынды.

Құртқашаштар сұрыпының перспективтілік сапасын бағалау кезінде 11 диагностикалық белгілер қарастырылды: құрғақшылыққа төзімділігі, фитофаготөзімділігі, гүлдерінің сыртқы ортаның қолайсыз жағдайларына төзімділігі, гүлдерінің реңі, өлшемі, пішіні, гүлдеу ұзақтығы, гүлсағағының ұзындығы және мықтылығы, гүлдеу қабілеті және көбею дәрежесі.

Зерттеу нәтижесі бойынша құртқашаштың 1 сұрыпына (Add It Ap) «орташа перспективтілік» тән болды, яғни сәндік сапасы төмен.

«Көтеріңкі перспективтілік» (70 балдан төмен) дәрежесі Маңғыстау жағдайында 6 сұрыпқа тән: Micheal Paul, White Queen, Cry Baby, Pumpkin Iron, Indian Pow Wow, Fires Form.

Зерттелінген таксондардың ішінен 9 сұрып – Kiwi Capers, Swish, May Magic, Margarita, Марина Раскова, Bronze Bell, Butterfly Bower, Grace Sturtevant, Ilsan «жоғары перспективтілік» (71-80 балл аралығы) сипатқа ие болды

Маңғыстау жағдайында «өте жоғары перспективтілік» (81-90 балл) дәрежесі 4 сұрыпқа – Bazaar, Port Wine, Tomeso, Star Shine тиісті болды.

**Түйін сөздер:** интродукция, құртқашаш, сұрып, кешенді шкала, перспективтілік, Маңғыстау жағдайы.

**Н. И. Дуйсенова, А. А. Иманбаева**

РГП «Мангышлакский экспериментальный ботанический сад» КН МОН РК, Актау, Казахстан

### **ИНТРОДУКЦИЯ И ИЗУЧЕНИЕ ПЕРСПЕКТИВНОСТИ СОРТА ИРИСА ГИБРИДНОГО В АРИДНЫХ УСЛОВИЯХ МАНГИСТАУ**

**Аннотация.** В статье представлены результаты интродукционного изучения сортов ирисов в коллекции Мангышлакского экспериментального ботанического сада (далее МЭБС). Целью наших исследований является целенаправленные интродукционные исследования сорта ириса гибридного, комплексное изучение декоративных качеств и выделение сортов, перспективных для зеленого строительства Мангыстауской области.

Изучение биологических особенностей и определение комплексной оценки декоративных признаков сортов ирисов проводили по общепринятым методикам: Р.А. Карписоновой, В.Н. Былова, Е.Л. Тыщенко и Ю.В. Тимкиной, Решетниковой Л.Ф. и с помощью региональной комплексной шкалы МЭБС.

Интродукция *Iris* L. в МЭБС началась с 1978 года. Современная коллекция цветочно-декоративных растений МЭБС представлена 98 сортами ириса гибридного. Для оценки перспективных качеств сортов ириса нами были выбраны 20 сортов из коллекции, интродуцированных с 2009 по 2014 года.

При оценке перспективных качеств сортов ириса учитывали 11 диагностических признака: засухоустойчивость, фитофагоустойчивость, устойчивость цветка к воздействию внешних факторов среды обитания, окраска, размер, форма цветка, продолжительность цветения, высота и прочность цветоноса, репродуктивная способность и успешности возобновления растений.

По результатам исследований выявлен 1 сорт ириса (Add It Ap) «средней перспективности» (51-60 баллов), имеющий низкие декоративные качества.

К «повышенным перспективным» (менее 70 баллов) для культивирования в условиях Мангыстау отнесено 6 сортов: Micheal Paul, White Queen, Cry Baby, Pumpkin Iron, Indian Pow Wow, Fires Form.

Из изученных таксонов выявлено 9 сортов с «высокой перспективностью» (71 -80 баллов): Kiwi Capers, Swish, May Magic, Margarita, Марина Раскова, Bronze Bell, Butterfly Bower, Grace Sturtevant, Ilsan.

К «очень высокоперспективным» (81-90 баллов) для Мангыстау отнесено 4 сорта: Bazaar, Port Wine, Tomeso, Star Shine.

**Ключевые слова:** интродукция, ирис, сорта, комплексная шкала, перспективность, условия Мангыстау.

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