UDK: 634.452:631.524.85(574)

Ospanova G.Zh., Orazbekov K.G.

Kazakh national agrarian university

BIOLOGICAL BASIS OF INTRODUCTION OF AN ASSORTMENT OF PERSIMMON FRUIT PLANTS IN KAZAKHSTAN

Summary

This paper presents preliminary results of the introduction in a south - east of Kazakhstan, the two types of persimmons: Japanese persimmon and virgin persimmon. From this it follows that if the conditions in the south-east of Kazakhstan will be fruiting persimmon, it is quite possible full ripening and quality of the fruit. The results of the introduction of species of persimmon in a south- east of Kazakhstan showed that the two types of persimmon Virginia and eastern most promising for further study is the persimmon virgin.

***Keywords**:* Introduction, Japanese persimmon, persimmon virgin, iodine.

Introduction

In nature there is a great variety of fruit trees, with unique food and medicinal properties. Search, introduction and development of their - practical continuation started NI Vavilovym [1] work on a planned and sustainable use of plant resources of the planet.

The global spread of the small number of the most cultivated plant species by using a small number of effective varieties grown in large areas intensively supports genetic erosion of agro-biodiversity in the world. The spread of monocultures reduces impact natural ecosystems and the availability of genetic resources of many plant species that could potentially be used in the future.

Genetic erosion of biodiversity has forced humanity to adopt an international treaty on its preservation, and subsequent declarations and programs designed to resolve a difficult situation.

One way to conserve biological diversity and introduction to the culture of new species. The relevance and practical significance of the work on the introduction of fruit plants is of high nutritional and medicinal value [3].

The successful introduction of any kind, under conditions ensuring its survival, it significantly increases the form diversity of relevance to practical selection [2]. It is important in this case - the creation introduction population [4] since individual instances only partially represents the form, and all of its genetic wealth contained in the population.

The Programme for the development of agro-industrial complex in the Republic of Kazakhstan for 2013-2020 gg "Agribusiness 2020" to ensure the country's population of fruit in accordance with the norms of consumption, processing and export of fruits envisages bringing the area of fruit crops in 2020 to 75-80 thousand hectare.

The main conditions for improving the competitiveness of the domestic fruit growing are highly adaptive selection variety rootstocks combinations for industrial gardens, improving cultivation techniques, fruits, science-based placement array of gardens and expansion of the existing assortment of fruit plants by attracting (introduction) of different species, varieties and hybrids of fruit crops from areas with similar climatic conditions of Kazakhstan.

Subtropical fruit - one of the largest sectors of agriculture, which is represented mainly citrus, persimmon, pomegranate, jujube, olives and Subtropical Crops Production other [5] one way of improving the welfare of the people, improve supplies of fruits high in vitamins.

Currently, the society is a topical problem of population environmentally friendly and biologically valuable agricultural products of own production.

The inevitable result of the development of civilization has been a steady decline in the consumption of natural foods, increasing the share of consumption of refined subjected cooked foods, increased use of food additives, food contamination is potentially hazardous compounds of chemical and biological origin. Reduced production of domestic agricultural production has led to a significant increase in food imports.

There quantitative under consumption of food, its low quality, low in vitamins, minerals and other vital substances. Unfortunately, in recent years there has been an increase in the importation of imported food in our country, the security of the population of domestic fruit and vegetable products does not exceed 40 to 50%, while food security is considered the threshold of 80-85 %. The excess of the critical level of imports of products jeopardizes food independence of the country. Furthermore, the problem is compounded by the importation of products of low quality it.

Consequently, it is necessary to increase the level of food security with high quality products of own production. Lack of power in the structure of fruits, vegetables and berries, uneven their arrival in the year leading to a deficiency of vitamins, minerals and other biologically active substances in the human body.

One of the sources of human needs for vitamins, macro - and microelements and other biologically valuable substances are fruits and berries. For Kazakhstan, the issues of population horticultural and berry products are very relevant, since most of the territory does not have favorable soil and climatic conditions for the cultivation of fruits, vegetables and berries. In this regard, considerable interest is the southernmost region of Kazakhstan - South Kazakhstan region, where there is a large range of fruit crops, including subtropical.

However, almost the entire range of subtropical fruits present in the domestic market is an imported from more southern states. After the collapse of the Soviet Union, almost all regions of subtropical fruit growing potential remained in other states - Georgia, Azerbaijan and the Central Asian republics. However, the resource capabilities of the South Kazakhstan region, which is the southernmost and one of the most heat-supply regions of Kazakhstan, is not fully utilized.

Study, researchers found that the factors determining subtropical region is the sum of active temperatures during the growing season, the critical temperatures of the winter season, especially wetting area and other factors. Further industrial introduction of subtropical crops in areas of limited usefulness to them is limited by weather conditions in the region.

With the introduction of new subtropical cultures must pay particular attention to their high productivity, resistance to adverse environmental factors, nutritional value, suitability to different types of fruit processing, processing, and medical properties plodov6 . In the context of southern Kazakhstan are endless possibilities of use of many plants, including subtropical.

Assortment of fruit plants in Kazakhstan is mainly represented pome fruit and stone cultures of the temperate zone, subtropical breed practically not represented and understood. In this connection it is necessary to expand the range of fruit plants. Analysis of soil and climatic indicators give reason to introduce a variety of fruit trees such as persimmon, pomegranate, jujube, citrus (trench method), primarily in the southern regions of Kazakhstan (South Kazakhstan), where all the soil and climatic conditions for growing (persimmon pomegranate, jujube) on an industrial scale in the open field.

Introduction and an introduction to the culture of fruit growing plants such securities as persimmon, pomegranate, citrus, jujube fruit will bring industrial to a higher quality level to ensure the population is highly fortified fruit [6].

The research results

Persimmon virgin and Japanese Persimmon in a south - east of Kazakhstan has been introduced seeds brought from the Nikita Botanical Garden in 2009 in the territory of the Central Botanical Garden (Almaty).

Soil and climatic conditions of the Main Botanical Garden is a sharply continental climate with an average January temperature of - 6-8 ° C , in July is + 24-25 ° C, rainfall Almaty - the zone of unstable moistening with annual precipitation of about 500-700 mm. The vegetation period is 205-225 days, the sum of effective temperatures of 3300° C. Dark brown soil with humus -3.1 %.

Seeds persimmon persimmon eastern Virginia and laid on stratification for 4 months in 2009 (December-March 2010). April 14, 2010 was sowing seeds in a field nursery, in the open ground . May 15, 2010 were recorded shoots Japanese Persimmon, May 19, 2010 - the persimmon seedlings Virginia. Germination rate was 90%. A total of 79 seedlings persimmon Virginia (germination rate was 90%) and 64 of Japanese Persimmon seedlings (germination rate was 80%).

In May 2011, persimmon seedlings Virginia and east by the conventional planting 5x4 m. The shape of the experimental plot is rectangular. The method of placing the plant systematic, repeated 3 times the tree plot.

Table 1 - Status of plant species of persimmon in points.

Option	2011 year (-29 ^{0}C)*	2012 year (-31 ^{0}C)*	2013 year (-23 ^{0}C)*	2014 year (-27 ^{0}C)*
Japanese Persimmon (control)	5	5	5	5
persimmon virgin	2	2	1	2

Note: 1 point - very slight freezing of : wood yellowish, small areas of superficial burns bark on trunks and limbs, loss of not more than 10% of the spurs; the tree was good leafy, leaves the normal value;

2 points - slight freezing of: wood light brown, weak, superficial burns bark or some small area deep damage, withering one-year increase and partly small branches, the death of no more than 25% of the spurs, the leaves of the normal value, partly fine;

5 points - tree destroyed by frost or fully up to the line of snow.

*- Minimum winter temperature in ^{0}C.

Analyzing the above data should make the following conclusion : in a south- east of Kazakhstan view persimmon - Japanese Persimmon may not have the opportunity of growth and further study. Most appropriate for further study of the form - persimmon virgin. (Table number 1)

Table 2 - Indicators of drought resistance species of persimmon

Option	water content, %	Water-holding capacity of leaves , %				Water deffitsit , %
Japanese Persimmon (control)	66	2 h	4 h	6 h	average	7,6
		89,1	89,9	74,0	82,9	
persimmon virgin	68	90,3	87,3	79,0	85,5	2,7

Water content persimmon leaf tissue in Virginia was more than the Japanese Persimmon, it once again confirms that the persimmon virgin is more resistant to adverse environmental conditions. Water retention at persimmon virginiana (85.5 %) for the above three determination period (after two, four and six hours) than in Japanese Persimmon (82.9 %).

Water deffitsit usually associated with water retention, what it is, the lower the water-holding capacity. So Japanese Persimmon has a high water diffitsit 7.6% and in her low water-holding capacity.

Table 3 - Morphological characteristics of the annual increment of persimmon Virginia (four years)

Length of annual increment , centimeter	% - Ing the content of total
Before 10	17,1
11-20	33,7
21-30	27,4
31-40	11,5
41-50	2,4

In the context of the introduction of the south - east of Kazakhstan currently fruiting persimmon Virginia was not (according to the literature Nikita Botanical Gardens where the seeds were brought persimmon fruiting occurs by 7-8 years).

From the analysis of Table number 4 that the length of the growing season in the four years of research by an average of 173 days. For a complete fruit ripening persimmon Virginia requires an average of 180 days.

Conclusion

From this it follows that if the conditions in the south-east of Kazakhstan will be fruiting persimmon, it is quite possible full ripening and quality of the fruit.

The results of the introduction of species of persimmon in a south- east of Kazakhstan showed that the two types of persimmon Virginia and eastern most promising for further study is the persimmon virgin.

References

1. N.I. Vavilov Theoretical Foundations selektsii.- M .: Nauka, 1987. -512 p.

2. N.I. Vavilov Breeding and Genetics // science and agriculture. M : Knowledge, 1967. - p. 5-19.

3. Vigorov L.I. Garden medicinal kultur.- Sverdlovsk, 1979. - 175 p.

4. Kamelin R.F. Biological diversity and the introduction of plants // Plant resursy.- 1997. - Vol. 33 , no. 3 - p. 1-10.

5. K.G. Orazbekov Prospects of cultivation of fruit crops in southern Kazakhstan, Proceedings of the Institute of Botany, 2011.

6. K.G. Orazbekov, G.Zh.Ospanova Prospects introduction of new fruit crops in southern Kazakhstan. I International Farabievskie reading, Proceedings of the International Scientific Conference "Biodiversity and sustainable development of nature and society," Almaty on 9-11 April 2014. Treasury Bulletin Ser. Environment, p. 360-367.

Оспанова Г.Ж., Оразбеков К.Ғ.

ҚАЗАҚСТАНДА ЖЕМІСТІ ӨСІМДІКТЕРДІҢ ҚҰРАМЫНА ВИРГИН ҚҰРМАСЫН ЕНГІЗУДІҢ БИОЛОГИЯЛЫҚ НЕГІЗДЕРІ

Берілген мақалада Қазақстанның оңтүстік-шығыс жағдайында құрманың 2 түрі: шығыс құрмасы және виргин құрмасын жерсіндірудің шамамен алынған қорытындысы берілген. Қазақстанның оңтүстік-шығыс жағдайында құрманың түрлерін жерсіндіру нәтижесінде, құрманың екі түрі: виргиндік және шығыс келешекте зерттеуде болашағы бар виргиндік құрмасы болып отыр.

Кілт сөздер: Жерсіндіру, шығыс құрмасы, виргин құрмасы, йод.

Оспанова Г.Ж., Оразбеков К.Г.

БИОЛОГИЧЕСКИЕ ОСНОВЫ ВВЕДЕНИЯ В СОРТИМЕНТ ПЛОДОВЫХ РАСТЕНИЙ ХУРМЫ ВИРГИНСКОЙ В КАЗАХСТАНЕ

В данной статье приводятся предварительные итоги интродукции в условиях юго-востока Казахстана, двух видов хурмы: хурма восточная и хурма виргинская. Результаты интродукции видов хурмы в условиях юго-востока Казахстана показали, что из двух видов хурмы: виргинской и восточной наиболее перспективной для дальнейшего изучения является хурма виргинская.

Ключевые слова: Интродукция, хурма восточная, хурма виргинская, йод

УДК 631.4:631.8

Раисов Б.О., Тастанбекова Г.Р., Мурзабаев Б.А.

Южно-Казахстанский государственный университет им. М.Ауэзова (Шымкент)
Юго-Западный научно-исследовательский институт животноводства и растениеводства (Шымкент)
Южно-Казахстанская областная инспектура по сортоиспытанию сельскохозяйственных культур (Шымкент)

СОДЕРЖАНИЕ И ОБЕСПЕЧЕННОСТЬ ПОДВИЖНЫМИ ФОРМАМИ ПИТАТЕЛЬНЫХ ЭЛЕМЕНТОВ ОРОШАЕМЫХ ПОЧВ ЮЖНО-КАЗАХСТАНСКОЙ ОБЛАСТИ

Аннотация

В статье приводятся результаты многолетних исследований годовых норм внесения минеральных удобрений на планируемый урожай хлопчатника (кг/га действующего вещества) в зависимости от степени обеспеченности почв питательными элементами.

Ключевые слова: урожайность, питание растений, коэффициент водопотребления, реконструкция, плодородие почвы.

Введение

Интенсификация земледелия неразрывно связана с использованием удобрений. Широкое применение удобрений - надежное и наиболее действенное средство повышения плодородия почвы и урожайности зерновых, кормовых и технических культур. Удобрения - вещества, предназначенные для улучшения питания растений и