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SELECTION OF "AMARANTH" PLANT ON THE BASIS OF PRODUCTIVITY CHARACTERS

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ABSTRACT

This article discusses favorable conditions for the cultivation of amaranth plant genotypes as the main and duplicate crop, based on the data obtained during the experiment, varietal samples of amaranth plants are recommended to peasant homesteads and farms as a traditional crop to obtain a high and high-quality harvest of these plants.

Key words: Amaranth, nursery, introduction, variety, tier, plot, feature.

“AMARANT” O‘SIMLIGINI HOSILDORLIK BELGILARI ASOSIDA TANLASH

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ANNOTATSIYA

Ushbu maqolada O‘zbekiston Respublikasining Toshkent viloyati tuproq-iqlim sharoitida amarant o‘simlik namunalarini asosiy va takroriy ekin sifatida yetishtirishda qulay sharoitlar mavjudligi hamda tajribada aniqlangan ma’lumotlarga asoslanib, Amarant o‘simliklari nav va namunalari to‘g‘ri tanlansa ushbu o‘simliklardan yuqori va sifatli hosil olishga erishilish mumkinligi haqida malumotlar keltirilgan.

Kalit so‘zlar: Amarant, ko‘chatzor, intraduksiya, nav, yarus, delyanka, belgi.

INTRODUCTION

In recent years, our country has been improving the agricultural reform, particularly the state management system in the field. Diversification of production, improvement of land and water relations, creation of a favorable agribusiness environment and high added value chain, support for the development of cooperative relations, wide introduction of market mechanisms, information and communication technologies in the field, as well as scientific achievements "Strategy for the development of agriculture of the Republic of Uzbekistan for 2020-2030" was

adopted in order to increase the potential of personnel. According to it: Food security depends on a wide range of socio-economic, demographic and environmental factors and is one of the main components of the country's development. The state policy of food security will be developed and implemented on the four components of food security (availability of food, ability to purchase it, its use and its sustainability). Population growth, increased demand for land, water and energy resources, as well as drastic climate change are the main factors affecting food security.

In recent years, as a result of the implementation of a number of measures to strengthen food safety in our country, Uzbekistan has strengthened its position in the world and is gradually improving its position in global rankings. In 2018, the Republic of Uzbekistan took 52nd place among 119 countries according to the Global Hunger Index, reaching a "moderate" level with an index of 12.1. The main goal of this priority direction is to develop and effectively implement a state policy aimed at ensuring food security for all residents of the republic. The priority direction is aimed at providing the population with safe and high-quality food products at stable prices.

In the "Agricultural Development Strategy of the Republic of Uzbekistan in 2020-2030", as well as in the Decision No. PQ-4643 "On Measures to Further Improve the Management System of the Agrarian and Food Sectors", food products the tasks of improving safety and consumption rations, ensuring the production of the required amount of food products, rational use of natural resources in the agricultural sector, wide introduction of water-saving technologies, and re-use of abandoned lands.

Based on these goals, it is planned to be implemented in the framework of the practical project "Cultivation of Quinoa and Amaranth plants in different environmental conditions" in cooperation with Sho'rangan yerladra International Biofarming Center (ICBA) in the conditions of typical gray soils of Tashkent region.

Review of literature: Until now, a number of foreign scientists have conducted in-depth research on the chemical composition, biological activity and pharmacological properties of Amaranthus plants. The potential of the amaranth crop was rediscovered in the second half of the 20th century. This multi-functional crop has a protein content of around 16-18% in the grain, which is of higher quality than grain, contains 2-6% saponin in the seed, and is considered gluten-free. The seed contains a high amount of cellulose, phosphorus, minerals, especially Ca, Zn, P, Fe, Cu, Mg, Mn, 5% fat and vitamins, and it also contains all important amino acids, fatty acids and other nutrients. contains z (Zaremba V.S. (2)).

Living in the Aral Sea basin region remains a challenge for rural communities, and child malnutrition rates are still high in 2014. Food shortages are predicted to increase in many vulnerable low-lying countries of the region where water resources are exposed to highly variable weather and land degradation (Zaremba V.S.(3)).

The Aral Sea basin is a terrain particularly prone to climate change and drought, with a dry continental climate and water scarcity issues. Because of these problems, productivity can hit the biggest area. The main impact of climate change on terrestrial agroecosystems is the decrease in the yield and productivity of agricultural crops, resulting in food security problems in the region (Allanov X et al. (1)).

In a changing climate scenario, amaranth is considered as a crop that can contribute to food security and reduce environmental pressure on agricultural land (Peregudov V.N. (4)).

According to Torres Mino Xavier (6), according to the phenological observation phases, it is divided into the following: germination, the appearance of true leaves, and the appearance of a grainy branch. The following phenological phases are distinguished in the ontogeny of amaranth: seedling, emergence of true leaves, stem branching, corm formation, budding, flowering, seed formation and maturation. The length of the amaranth vegetation period until the seeds ripen is 90-130 days, depending on the type and zone of cultivation.

The composition of lipids and the content of seeds varies among different types of amaranth and in the green mass and depends on the growing conditions. From 1 to 3.8% of lipids by dry weight was found in amaranth leaves. Amaranth seeds contain from 2 to 17% lipids (depending on the species). The amount of oil in amaranth seeds is relatively low - 5-10% of the weight of the seed, and its composition is similar to corn and cottonseed oil. Sergeeva Vera Alexandrovna (7).

First, in Uzbekistan, K.S. Safarov (8) studied the bioecological characteristics, physiological and biochemical processes of amaranth species in different soil and climate conditions. One of such non-traditional types of plants are plants of the Amaranthus family. Until the 30s of the last century, plants belonging to the Amaranthus family were used for decorative, food and technological purposes. Later, after the discovery of squalene and tocopherols, which are very important for the human body, in the oil extracted from its seeds, scientists' interest in this plant increased even more.

The purpose of the study. Based on the varieties of amaranth introduced in the analytical selection method, it is to create selection materials with high positive signs of grain quality.

The object of the study. Samples of the collection available at the Scientific Research Institute of Rice Cultivation of Uzbekistan and

The subject of the study: 74 samples of the introduced amaranth plant brought by the International Center for Biofarming (ICBA).

Research methods: conducting field experiments, planting, phenological observations, biometric measurements, plant care, yield determination. Sources of the Ministry of Agriculture of the Republic of Uzbekistan, the Research Institute of Plant Science of Uzbekistan, the State Commission for Testing Varieties of Agricultural Crops, "Metodika Gosudarstvennogo sortoispitaniya selskohozyaystvennix kultur" , "Methods of Conducting Field Experiments" based on methodological manuals and statistical analysis of the results obtained by B.A. It is performed according to the method indicated by Dospekhov.

Expected scientific results of the research.

In the first year of conducting research, imported varieties of Amaranth plant are analyzed for morphological characteristics in field and laboratory conditions.

- In the second year of conducting scientific research, varieties of amaranth plant with positive characteristics are selected by the method of analytical selection.
- As a result of research, amaranth varieties with positive characteristics are recommended as selection materials.

Theoretical and practical significance of research. The theoretical significance of the research is the development of scientifically based recommendations on the prospects of using introduced

varieties and samples with valuable economic traits in the selection process, the formation and stabilization of valuable economic traits in the studied amaranth samples.
The practical significance of the results of the research is that, based on the analysis of valuable economic traits from among the samples of introduced varieties using analytical selection methods of the amaranth plant, selection materials with high grain quality are created and recommended for the process of creating a new variety.
Scientific innovation of research. For the first time, on the basis of the analysis of the introduced varieties of amaranth, selection materials with high grain quality and valuable economic characteristics will be created.

The research was carried out in the framework of the practical project "Cultivation of Quinoa and Amaranth Plants in Different Environmental Conditions" during 2021-2022 in the conditions of typical gray soils of the Tashkent region. In the experiment, the genotypes of amaranth varieties were studied, and the experiment was placed in 7 variants, 3 replications, in one layer. Each plot consists of 8 rows, the distance between the rows is 90 cm, the total area of one plot is 720 m2, of which the total area is 360 m2.

RESEARCH RESULTS

In cooperation with the Tashkent State Agrarian University and the International Center for Bio-Farming in Saline Lands (IKBA), in the experiments of 2022, samples of amaranth varieties were selected from the selected collection. The experimental area is located at the coordinates E069020'527″ N41022'336″ at an altitude of N=468 above sea level. Planting was carried out on April 25, 2022, and irrigation was carried out to recover the seed. Germination was observed on May 6-9, and the results are presented in the table.

Germination of "Amaranth" variety samples, % 2022

No.	Plot no.	VINO/Breeding code	Species	Dates			
				06.05	07.05	08.05	09.05
1-takrorlanish							
1.	**p-10**	VI042948	hypochondriacus	15	38	46	75
2.	**p-11**	VI042949	hypochondriacus	16	29	41	79
3.	**p-30**	VI050998	hypochondriacus	14	34	46	88
4.	**p-32**	VI054579	cruentus	11	30	41	82
5.	**p-36**	VI058986	dubius	13	26	34	80
6.	**Chek 1**	-	-	12	32	42	81
7.	**Chek 7**			11	30	39	54
2-takrorlanish							
8.	**p-11**	VI042949	hypochondriacus	15	28	41	52
9.	**Chek 7**			14	30	41	51
10.	**p-36**	VI058986	dubius	13	25	35	56
11.	**p-30**	VI050998	hypochondriacus	13	34	45	56
12.	**p-32**	VI054579	cruentus	11	32	43	51
13.	**Chek 1**	-	-	12	31	42	51
14.	**p-10**	VI042948	hypochondriacus	14	35	48	51
3-takrorlanish							
15.	**Chek 1**	-	-	11	32	42	51
16.	**p-30**	VI050998	hypochondriacus	14	31	41	52
17.	**p-36**	VI058986	dubius	13	26	34	49
18.	**p-10**	VI042948	hypochondriacus	14	35	45	51
19.	**p-32**	VI054579	cruentus	11	31	40	52
20.	**p-11**	VI042949	hypochondriacus	13	28	40	49
21.	**Chek 7**			12	31	43	53

The rates of Yield yelement of amaranth varieties with average high yielding property (2022 y.)

Code of lines	The name of line	The quantity of productive stems	Color of main stem	The weight of 1000 seeds	Real yield from plot, gr.	Date of collecting of harvest
1-takrorlanish						
1	new10	54	green	2,3	1223	07.10.22
2	new11	56	green	3,1	1202	07.10.22
3	new30	54	green	2,6	1242	07.10.22
4	new32	59	green	3,2	1700	09.10.22
5	new36	59	red	3,2	1842	10.10.22
6	check1	56	red	2,6	1982	11.10.22
7	check7	53	green	2,4	1581	07.10.22
2-takrorlanish						
1	new10	52	green	2,3	1240	07.10.22
2	new11	51	green	3,1	1250	07.10.22
3	new30	52	green	2,6	1300	07.10.22
4	new32	52	green	3,2	1560	09.10.22
5	new36	53	red	3,2	1740	10.10.22
6	check1	51	red	2,6	1950	11.10.22
7	check7	50	green	2,4	1400	07.10.22
3-takrorlanish						
1	new10	50	green	2,3	1230	07.10.22
2	new11	52	green	3,1	1190	07.10.22
3	new30	50	green	2,6	1230	07.10.22
4	new32	51	green	3,2	11600	09.10.22
5	new36	53	red	3,2	1825	10.10.22
6	check1	51	red	2,6	1950	11.10.22
7	check7	50	green	2,4	1521	07.10.22

As a result of the observations, it was found that the samples of the planted variety have different development.

During experiments on agrotechnologies of cultivation of amaranth variety samples presented by the ISBA organization, 5 samples r-51, r-52, r-53, r-54, r-59 out of 74 amaranth variety samples planted on June 28 as a repeated crop it was observed that it did not germinate.

For example: some samples have high stems but few yield elements, many leaves and branches but low productivity and similar differences were found.

Also, according to the results of the experiment, 41 samples of amaranth varieties were fully ripened by November 3 and their harvest was collected.

28 lines of amaranth variety samples grew well, but as a result of the long growing season and autumn frost, the seeds of the plants died before ripening.

It was also observed that 41 of the 74 samples of amaranth varieties presented by the organization can be grown as repeated crops to obtain a high yield.

In the soil-climatic conditions of the Republic of Uzbekistan, there are favorable conditions for growing amaranth plant samples as a main and repeated crop. quality harvest is achieved.

REFERENCES

1. Allanov X., Sottorov O., Normuradova M. Amarant o‘simligini yetishtirish texnologiyasi «AGRO ILM»2021 yil, 2-ilova (72)-son
2. Zaremba V.S. [ta in.] Vpliv ozonovanogo oliї amarantu na mikrofloru gniyno-nikroticheskix urajen stopi u xvorix na sukroviy diabet / // Fitoterapiya. – 2008. – № 2. – S. 25-28.
3. Zaremba V.S. Koreksiya metabolichnix porushen u xvorix iz sindromom diabetichnoї stopi shlyaxom provedennya golkorefleksoterapiї ta vjivannya oliї amarantu / V.S. Zaremba // Zaporoj. med. jurn. – 2007. – № 5. – S. 85-89
4. Peregudov V.N. Planirovanie urojaynыx dannыx polivnыx opыtov s udobreniyami i matematicheskaya obrabotka ix rezultatov. - Moskva «Kolos» 1978., - str. 17-91.
5. Safonova Ye.F. Vыdelenie i izuchenie fosfolipidov masla semyan amaranta : avtoref. dis. kand. xim. nauk / Ye.F. Safonova; Voronejskiy gos. universitet. – Moskva, 2004. – 28 s.
6. TorresMino Xaver, M.S.Gins. Xarakteristika sortov amaranta seleksii VNIISSOK po ustoychivosti k ponijennoy temprature i zasuxe pri vыgaщivanii v Moskovskoy oblasti i Respublike Ekvador Ovoщi Rossii -2015, №1-S. 42-46
7. Sergeeva Vera Aleksandrovna Otsenka i otbor isxodnogo materiala amaranta (Amaranthus L.) dlya seleksii na xozyaystvenno sennыe i dekorativnыe priznaki
8. Tursunova Sh.A. Donli amarant turlarining introduksiya sharoitlaridagi biokimyoviy va fiziologik xususi-yatlari. Avtoreferat. Toshkent, 2019.
9. Tangirova G, Xolmuradova G. Soya kolleksiya nav namunalari dukkagining morfologik belgilarini tavsifi “Paxtachilik va donchilik” jurnali, - Toshkent, 2022. - №2 (6) – b. 35-39.
10. Tangirova G, Xolmuradova G. Soya kolleksiya namunalari bargining morfologik belgilarining tuzilishi “Paxtachilik va donchilik” jurnali, - Toshkent, 2022. - maxsus son (6) – b. 46-50.
11. Juraev, S. T. (2022). Changes in the weight of raw cotton in one box in varietary cotton hybrids. Spectrum Journal of Innovation, Reforms and Development, 10, 18-21.
12. Jurayev, S. T. (2022). Yield of cotton lines in different climatic-soil conditions of Uzbekistan. International Scientific Journal Theoretical & Applied Science, 11(1), 310-313.
13. Xolmurodova, G. R., Tangirova, G. N., Jo'rayev, S. T. (2022). Селекция и семеноводство сои. LESSON PRESS, 1(1), 88.
14. Jo'rayev, S. T., Xudarganov, K. O. (2022). Qishloq ekinlari urug‘chiligi va urpug‘shunosligi. LESSON PRESS, 1(1), 167.
15. Jo'rayev, S. T. (2022). Go'za seleksiyasi va urug'chiligi. LESSON PRESS, 1(1), 288.
16. Jo'rayev, S. T., Ashurov, M., Narmatova, G., Toreev, F., Akhmedov, D., Mavlonova, N., Ergashev, J., Baratova, A. (2022). Cotton breeding and seed production. LESSON PRESS, 1(1), 224.
17. Jo'rayev, S. T. (2022). G‘o‘zaning introgressiv duragay va tizmalirning O‘zbekistondagi xar xil tuproq sharoitlarda bo‘lgan adaptiv patinsolidan foydalanish. LESSON PRESS, 1(1), 211.
18. Jo'rayev, S. T. (2022). G‘o‘za genetikasi. LESSON PRESS, 1(1), 96.
19. Jo'rayev, S. T., Ergashov, J. A. (2022). Moyli ekinlar seleksiyasi va urug‘chiligi. LESSON PRESS, 1(1), 120.

20. Жураев, С. Т. (2022). Оценка волокна гибридов хлопчатника, выращенных в различных регионах Узбекистана. Министерство сельского хозяйства и продовольствия Республики Беларусь учреждение образования «Гродненский государственный аграрный университет», 1(52-55), 5.
21. Djonibekova, NE, Jo'raev, ST, Inoyatova, MH (2022). Effect of bap concentration and content of food environment on "in vitro" regeneration of rizamat (vitis vinifera l) cultivar. European Journal of Agricultural and Rural Education (EJARE), 3(2), 75-78.
22. Joraev, S. T., Ismoilov, A. A., Dilmurodov, Sh. D. (2022). Yasmiq nav va tizmalarining o'suv davri. Xorazm Ma'mun Akademiyasi, 22(6), 5-11.
23. Joraev, S. T., Raimova, D. (2022). Взаимосвязь периода вегитации линий хлопчатника с Некоторыми хозяйственно-ценными признаками в зависимости от регионов возделывания. Tafakkur manzili ilmiy-uslubiy jurnali, 1(1), 4-14.