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MORPHOBIOLOGICAL CHARACTERISTICS AND VALUABLE ECONOMIC CHARACTERISTICS OF GRAPE COLLECTION VARIETIES

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УЗУМ КОЛЛЕКЦИЯСИ НАВЛАРИНИНГ МОРФО-БИОЛОГИК ХУСУСИЯТЛАРИНИ ҲАМДА ҚИММАТЛИ ХЎЖАЛИК БЕЛГИЛАРИ

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INTRODUCTION

It is very important to increase the number of vineyards in Uzbekistan, to create new varieties of grapes, to achieve high productivity, vitamin content, and the cultivation of ecologically clean products. In the decree of the President of the Republic of Uzbekistan No. PF-60 of January 28, 2022 "On the development strategy of New Uzbekistan for 2022-2026" "Through intensive development of agriculture on a scientific basis, to increase the income of farmers and farmers by at least 2 times, to increase the annual growth of agriculture by at least In order to reach 5%, special attention is paid to increasing the volume of food products to 7.4 million tons by 2026, and the processing level of fruits and vegetables to 28%. In this regard, the preparation of healthy ECU materials for the propagation of seedlings of grape varieties in Uzbekistan is an actual scientific direction.

The purpose of the research is to separate the varieties and forms of the collection of grape varieties with morpho-biological characteristics, a high level of positive set of valuable economic signs, and to multiply them in vitro.

The tasks of the research are as follows:

- evaluation of grape varieties and forms according to morpho-biological characteristics and valuable economic signs;
- selection of varieties and forms for in vitro propagation from the collection of grapes;
- determination of optimal drug and rate for surface sterilization of grape varieties in vitro.

During the study of the growth and morpho-biological characteristics of the grape varieties, the transition and duration of the vegetation phases were significantly different. It was confirmed that the duration of the beginning of the vegetation phases in the collection varieties that participated in our experiments depend on the biological characteristics of the variety and the conditions under which they grow.

The movement of aphids in the grape variety lasted from March 1 to March 6, that is, for 6 days.

In this group, it was observed that in the conditions of the Tashkent region, the beginning of budding mainly coincides with the first ten days of April. In this case, the recording of buds was recorded in Nimrang, Perlet, Surkhan kitabsky, Muskat Aleksandriysiy, Husayne bely varieties the earliest, i.e. on April 4-7. The latest bud recording was observed in Katta Kurgan, Pobeda (Mers), Khusayne muskatyy, Khusayne chernyy, Shtur grape varieties and fell on April 12-15. The rest of the varieties took an intermediate place in terms of the phase of bud formation.

Observations showed that the beginning of the flowering phase of the studied cultivars also differed among grape cultivars. In this case, the earliest flowering was observed on May 12-13, and appeared in Guzal kara, Nimrang, Rizamat, Soyaki, Sultani, Soyaki, Muskat danausky, Tuya tish, Khusayne belyy, Shtur angur, Ertapishari varieties. The latest flowering was observed after May 17 in Katta kurgan, Hurmany kizyl, Khusayne kelin barmak varieties. The rest of the varieties took an intermediate place between the above groups of varieties in terms of the beginning of the flowering period, and the dates close to the control Andijanskiy chyornyy variety were recorded (see Table 1).

Table 1 **Transition of vegetation phases in grape varieties (2020-2022)**

The name of the variety	Beginning of vegetation phases, date						From the beginning of the growth of the tumor to the end, day
	sap action	bud writing	bloom	crowd growth		Gujum's cooking	
				beginning	ending		
Andijansky chyornyi	3/III	11/IV	16/V	22/V	14/VII	25/VII	52
Beautiful black	1/III	10/IV	13/V	20/V	9/VII	20/VII	50
Djandjal kara	4/III	8/IV	14/V	21/III	11/VII	22/VII	52
Doroi	6/III	8/IV	14/V	22/V	9/VII	19/VII	48
It is big	5/III	14/IV	18/V	20/V	20/VII	19/VII	48
Nimrang	5/IX	7/IV	13/V	19/V	15/VII	21/VII	45
Oktyabrsky	4/III	9/IV	15/V	21/V	10/VII	19/VII	51
Parkent	4/III	10/IV	16/V	22/V	14/VII	23/VII	49
Perlet	4/III	4/IV	14/V	20/V	9/VII	20/VII	50
Pobeda (Mers)	3/III	14/IV	15/V	20/V	12/VII	24/VII	52
Ranny Schroeder	3/III	10/IV	15/V	21/V	17/VII	16/VII	48
Regards	2/III	11/IV	13/V	19/V	7/VII	16/VII	49
Soyaki	2/III	9/IV	13/V	19/V	10/VII	22/VII	52
Sultan	5/III	10/IV	13/V	20/V	10/VII	18/VII	51
Surkhan Kitabsky	2/III	7/IV	13/V	20/V	4/VII	4/VII	45
Type rozovyy	1/III	8/IV	16/V	21/V	8/VII	20/VII	51
Camel tooth	2/III	10/IV	12/V	18/V	7/VII	10/VII	49
Muskat Alexandria	1/III	6/IV	15/V	19/V	8/VII	21/VII	49
Uzbek nutmeg	4/III	9/IV	14/V	19/V	29/VI	3/VII	40
Persimmon red	1/III	11/IV	17/V	22/V	16/VII	25/VII	52
Husayne Bely	3/III	7/IV	13/V	20/V	9/VII	18/VII	50
Husain's bride	3/III	9/IV	17/V	24/V	12/VII	19/VII	49
Husayne Muskatyy	2/III	15/IV	16/V	21/V	11/VII	22/VII	51
Husayne Cherny	5/III	15/IV	16/V	23/V	11/VII	21/VII	50
Stur grape	4/III	12/IV	12/V	19/V	10/VII	16/VII	52
Morning	2/III	8/IV	12/V	21/V	1/VII	6/VII	42

Varieties were also differentiated by the growth and ripening of the pods. Therefore, the earliest ripening of gujums was observed in Muscat Uzbekistansky (3/VII), Surkhan Kitabsky (4/VII) and Ertapishari (6/VII) varieties. The latest ripening was observed in Pobeda (Mers) and Hurmany kizyl varieties. In these varieties, the bunches ripened on July 24-25. The rest of the varieties took an intermediate place in terms of ripening period.

The total period of growth of gujums did not differ sharply by varieties and averaged 42-52 days. Based on the study of the formation of clusters, the beginning and end of growth, as well as the duration of this period, they were divided into the following groups: early varieties (27/VI-6/VII): Surkhan kitabsky, Muskat Uzbekistansky and Ertapishari; late ripening varieties (21/VII-29/VII): Djandjal kara, Nimrang, Parkent, Pobeda (Mers), Soyaki, Muskat Aleksandriysiy, Hurmany kizyl, Khusayne muskatyy, Desert; medium varieties (7/VII-20/VII): all other varieties.

It should be noted that the period from the beginning of the movement of sap to the beginning of khazonism was different in the samples of the collected varieties of grapes studied. With the longest growth period, such varieties as Guzal Kara, Magarchsky, Surkhan Kitabsky, Muskat Uzbekistansky, Rizamat and Tayfi Rozovy stood out.

The length of the growing season in these varieties varied around 224-229 days. Nimrang and Husayne black varieties have the shortest growing season in the grape collection. In these varieties, the first signs of frostbite began to appear after 203-207 days from the beginning of the movement of aphids.

Observations on the total length of the growing season showed that all the remaining samples of the grape varieties occupied an intermediate place in terms of the length of the growing season, and this phenological indicator changed around 209-221 days.

It is known that, regardless of the growth phases of plants and their duration, the efficiency of cultivated plants is evaluated directly by the elements of the crop formed in them.

In our research, the elements of yield in grape variety samples were significantly different (see Table 3.3). Consequently, among the grape varieties, the highest indicators of productive branches, i.e., the highest yield of productive branches, were distinguished by Katta Kurgan 72.0%, Gozal Kara 69.0%, Doroi (65.5%), Rizamat (64.5%) varieties. . In these varieties, the yield of branches was higher than 60% of the total number of branches. The lowest yield percentage was observed in Taifi Rozovy and Muscat Alexandria varieties. It was noted that this biometric indicator did not exceed 36.5%. The rest of the varieties took an intermediate place between the above varieties in terms of the productivity of the branches.

In the group of varieties belonging to the eastern ecological group, the number of vines on the productive branch did not differ sharply and the variation was 1.0-1.8. The number of vines in a developed branch did not differ strongly and varied around 0.4-0.9. The only exception was the Katta Kurgan variety, in which the number of vines on the developed branch was 1.1.

It should be mentioned that special attention should be paid to the Katta Kurgan variety. In this variety, 72.0% of fruitful branches and 37.0% of double-headed branches were recorded. 1.5 and 1.1 vines per mature branch corresponded to each fruitful branch. These are the highest indicators of productivity.

Self pollination. According to a number of scientists, self-pollination is a highly valued biological and economic characteristic of grape varieties, like other groups of varieties. In our studies on

the study of this biological sign in the plants of the collection of different varieties of grapes, the varieties were also differentiated.

Our observations showed that grape varieties differed significantly in terms of the number of flowers formed and the indicator of self-pollination. The number of these flowers varied from 355 to 582 according to varieties. However, the number of flowers does not play a major role in terms of self-pollination. Therefore, the study of normally formed clusters in varieties in isolated conditions made it possible to obtain the following results. In particular, the varieties Andijansky chyornyy, Guzal kara, Djandzhal kara, Pobeda (Mers), Rizamat, Soyaki, Tuya tish and Muskat uzbekistansky were distinguished by the highest self-pollination (see Table 2).

Table 2 Self-pollination of grape samples (2020-2022)

Varietal name	The number of flowers in an inflorescence, pcs	of which %			
		spilled buds	shed knots	bitter crowds	normal crowds
Andijansky chyornyi	469±6.9	6.3	52.6	6.6	34.5
Beautiful black	421±6.2	5.5	51.9	10.3	32.3
Djandjal kara	419±6.2	7.0	50.1	11.4	31.5
Doroi	419±6.2	6.3	55.2	9.0	29.5
It is big	410±6.0	5.7	62.3	2.1	29.7
Nimrang	397±5.8	3.9	66.7	8.9	20.5
Oktyabrsky	582±8.6	2.3	68.7	8.4	20.0
Parkent	422±6.2	4.3	66.1	3.4	26.2
Perlet	418±6.2	6.0	57.4	8.1	28.5
Pobeda (Mers)	396±5.8	3.6	58.2	6.3	31.9
Ranny Schroeder	414±8.5	4.3	66.5	5.4	23.8
Regards	426±8.7	4.8	46.2	7.1	41.9
Soyaki	360±7.3	2.3	53.6	4.3	33.8
Sultan	377±7.7	8.9	67.0	4.3	19.8
Surkhan Kitabsky	360±7.3	4.6	68.3	1.5	25.3
Type rozovyy	355±7.2	6.6	66.4	6.2	20.8
Camel tooth	355±7.2	5.1	56.2	7.9	30.7
Muskat Alexandria	377±7.7	5.0	64.1	12.5	18.4
Uzbek nutmeg	436±8.9	3.8	53.8	9.1	33.3
Persimmon red	419±8.6	6.5	65.1	8.0	20.1
Husayne Bely	347±5.1	5.1	60.0	9.7	25.2
Husain's bride	389±5.7	4.9	66.3	6.5	22.3
Husayne Muskatyy	332±4.9	5.9	63.5	8.3	22.3
Husayne Cherny	366±5.4	4.7	65.0	6.4	23.9
Stur grape	423±6.2	6.2	63.5	8.0	22.3
In the morning	352±5.2	6.1	55.7	9.2	23.0
EKF05	13.4	-	-	-	-
sx%	3.3	-	-	-	-

It was noted that in these varieties, the amount of normal clusters formed in relation to the total flowers formed was higher than 30%. The slowest self-pollination was observed in the varieties Oktyabrsky, Sultani, Taifi rozovy, Muskat Aleksandriysi, Hurmany kizyl.

Self-pollination in these varieties did not exceed 18.4-20.8%. The remaining varieties took an intermediate place between the above varieties in terms of self-pollination.

In studying the self-pollination of grape varieties, the number of bitter clusters is an important

indicator, because such clusters are formed from the egg cell without fertilization and are called parthenocarpic. Indicators of the formation of normal clusters at the beginning of the vine can determine the degree of self-pollination of the variety.

Andijansky chyornyy (34.5 %), Guzal kara (32.3 %), Djandzhal kara (31.5 %), Pobeda (Mers) (31.9 %), Rizamat (41.9 %), Soyaki (33.8 %), Camel's tooth (30.7 %) and Muscat uzbekistansky (33.3 %) belonged to the varieties.

The formation of clusters in the remaining varieties had intermediate indicators between the above-mentioned varieties. This allows us to conclude that the use of separate pollinating varieties for these grape varieties ensures high productivity.

Resistance to common diseases

It is known that grapevine is one of the cultivated plants that are most affected by fungal and bacterial diseases. Fungal and bacterial diseases damage almost all vegetative (branches, leaves, buds, etc.) and generative (flowers, clusters) organs of vines. This not only reduces the productivity of the plant and the quality of the mass, but also can cause the plant to lag behind in growth and development and even cause its complete death. Therefore, in the study of grape varieties, their resistance to this stress factor is an important biological and economic characteristic. In our studies on the study of this biological sign in the plants of the collection of samples belonging to different ecological-geographical groups of grapes, the samples were differentiated.

In the samples of grape varieties, the strongest oidium damage - 1.3 points - was recorded in Nimrang and Khusayne kelin barmak varieties. Relatively weaker damage, i.e. at the level of 0.3-0.7 points, was observed in Andijansky chyornyy, Djandjal kara, Parkent, Soyaki, Sultani, Surkhan kitabsky, Tuya tish, Muskat Alexandriysiy, Muskat uzbekistanskyi, Khusayne belyy and Shtur grape varieties. Average damage (1.0 points)Doroi, Katta Kurgan, Perlet, Pobeda (Mers), Ranniy Shrodera, Husayne muskatyy, Husayne chernyy and Ertapishari varieties were recorded. The remaining varieties showed resistance to this disease (see Table 3.5).

In grape varieties, anthracnose damage (0.3 points) was recorded in Khindogni, Muscat Alexandriisi and Khusayne Bely varieties. In all other varieties, this disease was not detected during the research years. The strongest damage (1.0 points) in terms of spot necrosis was observed in varieties Soyaki, Hurmany kizyl, Khusayne muskatyy and Khusayne chernyy.

SUMMARY

1 The movement of sap in all varieties of grape harvest begins in the first ten days of March - from March 1 to March 10, the earliest phase of bud writing - from April 2 to March 7, and late writing corresponds to April 12-17.

2. Based on the study of the formation of clusters, the beginning and end of growth, as well as the duration of this period, they were divided into the following groups:

early varieties(27/VI-6/VII): Surkhan Kitabsky, Muskat Uzbekistansky and Ertapishari;

Late ripening varieties(21/VII-29/VII): Djandjal kara, Nimrang, Parkent, Pobeda (Mers), Soyaki, Muskat Alexandriisiy, Hurmany kizyl, Husayne muskatyy, Desert;

Medium varieties(7/VII-20/VII): all other varieties.

3. Andijanskiy chyornyy, Doroi, Katta kurgan, Rizamat varieties with the highest indicators of

productive branches (60-70%) and productivity coefficients (1.3-1.5 and 0.8-1.5) were distinguished from the studied grape varieties.

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