



Evaluation of Self-Pollination of Grapevine of Technical Varieties

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Annotation: The article reveals the results of studies which conducted to assess the self-pollination of technical varieties of the grape collection. According to the observations, the eastern group varieties such as Vir-1, Magarachinsky, Muscat ViRa, Muscat Armenian, Muskatdenau and Rodina; from the Black Sea group - Ali Tersky, Gimrinsky and Shiroko Melnishka -; in the Western European group - varieties Cabernet Franc and Ribe, distinguished at a high level by self-pollination ability. The self-pollination of these varieties was in the range of 31-41%.

Keywords: grapes, eco-geographical group, technical varieties, collection, bitter grape bunches.

According to many scientists, self-pollination in technical varieties of grape, like other groups of varieties, is highly valued biological and economic traits of grapes.

In our studies on the study of these biological traits in grape plants, the collection of grape varieties belonging to different ecological and geographical groups was also differentiated.

Research method. Obligatory self-pollination of varieties was determined by the method of isolation of flower.

To do this, before the beginning of flowering, 5-10 pcs. of clusters of flowers of each variety were isolated, and parchment insulators were hung from different sides and at different levels of the grapevine.

The number of bunches of flowers depends on the size of the cluster: five inflorescences flowers are enough for varieties with large clusters. The number of flowers in the top flower varies from 100-120 to 400-500 depending on the variety. After flowering for 10-15 days, the insulators in the top flowers were removed and counted according to the number of normal bunches, falling off the berries and bitter bunches.

Research results and their analysis. In our observations it has been defined that the varieties of the eastern group have significant differences in the number of formed flowers and the self-pollination index. The number of flowers in this group varies from 373 to 568 depending on the variety. However, the number of flowers does not play a significant role in self-pollination. [1.]; [2.]; [3.]; [4.]; [5.].

Therefore, the study of normally formed clusters in varieties under isolated conditions made it possible to obtain the following results. In particular, in this group, the varieties of VIR-1,

Magarzhisky, VIR Muscat, Armenian Muscat, Denovsky Muscat, Muscat showed the highest self-pollination the varieties Beli and Rodina were distinguished. In these varieties, the total number of flowers formed was in the range of 31.0-41.0%. [6.]; [7.]; [8.]; [9.]; [10.].

The quietest self-pollination was observed in the varieties Muscat Susanna, Muscat Vostochny, Muscat Hibrasky, Muscat Uzbek, Plechestik. The self-pollination did not increase by 18.5-22.0% in these varieties.

The remaining varieties occupied an intermediate position between the above varieties in terms of self-pollination.

Table 1

№	Variety name	The number of flowers in the cluster, pcs.	of them %			
			Falling off the berries	Falling off the caps	Bitter bunches	Normal bunches
1	Bayanshirey St	499	5,4	33,8	7,4	25,5
2	Xindogni	488	7,8	59,8	4,1	28,3
3	Bassar	460	7,2	63,5	4,1	25,2
4	VIR-1	442	6,6	48,2	7,0	38,2
5	Vishneviy VIRa	468	7,7	62,0	3,0	27,3
6	Garmus	523	8,0	60,8	4,0	27,2
7	Karmshrashat	448	5,8	63,3	7,1	22,8
8	Krasnyaskiy	513	9,3	60,1	3,7	26,9
9	Kuljinkachernaya	504	8,3	60,3	3,2	28,2
10	Lkenicherniy	509	8,0	56,4	5,7	29,9
11	Magarachskiy	409	6,6	49,9	3,9	39,6
12	MuskatVIRa	442	10,6	45,2	3,2	41,0
13	Muskatarmyanskiy	377	5,0	51,7	3,4	39,0
14	Muskatsusanna	488	10,0	65,3	2,7	22,0
15	Muskatdenauvskiy	437	8,7	56,3	3,2	31,8
16	Muskatvostochniy	453	9,3	66,0	3,7	21,0
17	Muskatbeliy	373	10,2	52,5	6,2	31,1
18	Muskat kibrayskiy	508	11,1	60,4	9,2	19,3
19	Muskat uzbekistanskiy	557	7,9	70,2	3,4	18,5
20	Muskat desertniy	472	8,0	60,6	4,7	26,7
21	Plechestik	473	7,6	66,0	7,2	19,2
22	Rubinoviyy	491	8,7	60,3	5,3	25,7
23	Rodina	439	8,7	56,0	4,3	31,0
24	Record	497	8,8	58,8	5,8	26,6
25	Slava	532	8,1	61,6	3,6	26,7
26	Surxakxrozmani	568	7,3	58,6	6,3	27,8
	Variation	373-568	5,0-11,1	33,8-65,3	2,7-9,2	18,5-41,0

Among the varieties belonging to the Black Sea group, the varieties Alitersky, Girminsky and Shiroka malenishika were distinguished by their high ability to self-pollination.

The self-pollination rates for these varieties were 33.8, 35.6 and 37.3%, respectively. Unlike the eastern group, no self-pollinating varieties were found in this group.

Because the rest of the varieties had average indicators of self-pollination.

**The indicator of self-pollination of grape varieties belonging to the Black Sea group,
2020-2022**

№	Variety name	The number of flowers in the cluster, pcs.	of them, %			
			Falling off the berries	Falling off the caps	Bitter bunches	Normal bunches
1	RkasiteliSt	509	12,2	62,3	2,2	23,3
2	SaperaviSt	520	7,7	65,7	3,3	23,3
3	Aliyterskiy	402	9,5	52,0	4,7	33,8
4	Buera	539	5,9	60,9	5,2	28,0
5	Gimrinskiy	399	12,0	47,7	6,0	35,6
6	Djananura	527	8,2	58,4	4,2	29,2
7	Mustaosa	458	8,7	60,3	5,3	25,7
8	Muskatvengrskiy	454	6,4	62,0	9,4	24,2
9	Titakartalinskaya	471	5,9	62,0	4,0	28,1
10	Shirokamelnishka	400	8,0	52,0	2,7	37,3
11	Tavkveri	490	5,9	59,8	5,3	29,0
	Variation	399-539	5,9-12,0	47,4-65,7	2,2-9,4	23,3-35,6

With regard to self-pollination, the collection of grape varieties belonging to the Western European group has the same tendency as the collection of the Black Sea group. Therefore, if the Cabernet Franc and Ribe varieties are highly self-pollinating, the rest of the varieties will have an average self-pollination value. In them, this biological indicator varied within 22.6–28.5% (see Table 3).

The data in the table show that during the formation of a bunch, falling off of the caps to 50-70% of the vine is considered a natural state.

It was observed that in the eastern group -33.8-65.3%, in the Black Sea group -47.4-65.7%, in the Western European group -53.3-67.6%, of the berries falling off.

When studying the self-pollination of grape varieties, an important indicator is the number of bitter clusters, since such clusters are formed from the ovule without fertilization and are called parthenocapic. According to this indicator, it is almost the same in the Eastern and Black Sea groups, that is, it fluctuates within the range of 2.2-9.7%. In the varieties of the Western European group, this indicator is slightly lower (1.5-5.7). %. The lowest amount of bitter bunches (2.7%) was recorded in the following varieties Muscat Susanna from the Eastern Group; Shiroko Melenishka from the Black Sea group - Shiroko Melenishka from the Western European group - Cabernet Franc, Aspiran Cherny, Grand Noir de Calmet, Gold Riesling, Dyurbe de Marseille, Cabernet Sauvignon, Kosorotovskiy, Bifera Muscat, Morastel and Portuguizer.

Indicators of the formation of normal bunches on a head of grapes can determine determine the degree of self-pollination of the variety.

Table-2

№	Variety name	The number of flowers in the cluster, pcs.	of them, %			
			Falling off the berries	Falling off the caps	Bitter bunches	Normal bunches
1	Burgudskiy St	512	8.2	60.0	4.1	27.7
2	KabernefronSt	439	4.8	60.8	2.5	31.9
3	Albile	518	6.9	61.4	5.0	26.7
4	Asperancherniy	480	7.5	62.4	2.7	26.9
5	Verdeya	475	5.1	62.9	4.2	27.8
6	Verdelo	502	5.0	61.3	5.2	28.5

7	Gran nuer de Iya kalmet	533	7.1	64.5	2.1	26.3
8	Donzelino	485	6.0	63.2	4.8	26.0
9	Goldrisling	483	7.9	63.3	2.7	26.1
10	Dyubedemersel	510	7.0	65.3	2.2	25.5
11	Kabernesavinon	474	6.5	63.7	2.5	27.3
12	Kosorotovskiy	436	3.9	66.1	2.5	27.5
13	Muskatyurskiy	515	3.7	67.6	4.3	24.4
14	Muskatbefera	468	4.5	65.6	2.1	27.8
15	Muskatgamburgskiy	489	4.5	66.9	4.1	24.5
16	Muskatottonel	511	8.6	60.3	5.7	25.4
17	Muskatcherniypaniney	576	6.4	67.2	3.8	22.6
18	Morastel	473	5.9	65.1	1.9	27.1
19	Portugezer	453	7.1	63.1	1.5	28.3
20	Ribe	381	11.0	53.3	3.7	32.0
	Variation	381-576	3.7-11.0	53.3-67.6	1.5-5.7	22.6-32.0

Here higher rates belong to the following varieties. Eastern group - VIR-1 (38.2%), Magarchisskiy (39.6%), MuskatVIR (41.0%), Muskatarmyanskiy (39.0%), Muskatdenavskiy (31.1%) and Rodina (31.0%) %, from the Black Sea group - Aliyerskiy (33.8%). %) Gimrinskiy (35.6%) and Shiroko Milinchik (37.3%), from the Western European group - Cabernet Franc (31.9%) and Ribe (32.0%).

In other varieties, cluster formation of Tovar ranges from 18 to 30%, which allows to conclude that the use of pollinating varieties for these varieties ensures high productivity.

Conclusion

In the collection of varieties belonging to various ecological and geographical groups, the following varieties with a high level of self-pollination (31-41%) are distinguished, in the Eastern group - VIR-1 Magarachis Muscat VIR, Muscat Armenian, Muskatdenovsky and Rodina; Black Sea from the group - Ali Terskiy, Gimrinskiy Melinshka; In the Western European group - varieties Cabernet Franc and Ribe. To increase the productivity of other varieties, it is recommended to plant them together with a pollinator variety.

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