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Productivity of Introduced Peach Varieties

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Sumary

The article provides information on the productivity of the introduced peach varieties. Melox-26, Melox-31, Melox-37, Netix-25, Netix-28, Netix-30, Netix-34, Redix-25, Redix-27, Redix-30, Redix-2-110, Malix-25, Malix-36, introduced in the conditions of Guba-Khachmaz region It was carried out on Malix-145, Guayox-30, Guayox-35, Gartairo, Gardeta peach varieties. The study envisages the study of agrobiological characteristics, development indicators and adaptation of these varieties to soil and climatic conditions of the region. In the study, the productivity indicators of the varieties were compared using the Fadai variety taken as a control variety. As a result of the research, the average productivity indicators of peach plant varieties per 1 tree and 1 hectare were determined for 2018-2020. As a result of studying the productivity of peach varieties during the study years, it was determined that the average yield per tree and per hectare in the peach varieties involved in the study was Netix-25 (14.2 kg and 94.34 cent/ha), Redix-25 (13.9 kg and 92.35 cent/ha), Netix-30 (13.6 kg and 90.35 cent/ha), Melox-31 (14.9 kg and 99.67 cent/ha), Guayox-35 (13.5 kg and 89.91 cent/ha) and Gardeta (14.0 kg and 93.01 cent/ha) varieties had relatively high indicators. In addition, the smallest significant difference between the varieties was identified.

I. Introduction

The study of the productivity of fruit plants, including the peach varieties, is one of the important indicators in the assessment of economic and biological characteristics of the introduced peach varieties, which allows to determine the potential of the variety [2 p. 10-13].

The People's Republic of China (838,768 ha), the Kingdom of Spain (86,896 ha), the Italian Republic (69,005 ha), the Islamic Republic of Iran (67,201 ha) and the United States (46,992 ha) are the world's peach and nectarine plantations. is in the front rows. Peach orchards in the country increased by 1404 ha in 2000, by 2760.4 ha in 2010 and by 5276.7 ha in 2015. In recent years, the interest in the nectarine plant has increased, this figure was 5516.9 ha in 2018, 5780.2 ha in 2019 and 6331.7 ha in 2020. Of the total area of 6,331.7 hectares of peach crops, 3,236.8 hectares fall to the Guba-Khachmaz economic region, which is 51.1% of peach

plantations. Of the 6,331.7 hectares under peach orchards in the country, 5,159.9 hectares are fruit-bearing orchards [1 p. 300-303].

In general, the world produces 25,003,345 tons of peaches and nectarine products annually. The first place in the world for the production of peaches and nectarine is the People's Republic of China with 14,469,004 tons per year. The Kingdom of Spain is in second place with 1,529,919 tons per year and the Italian Republic is in third place with 1,427,573 tons per year. Production of peaches and nectar in the European Union was 3837 thousand tons in 2018, 4045 thousand tons in 2019 and 3606 thousand tons in 2020. Thus, the production of peaches and nectarine in Europe decreased by 15% in 2020 compared to 2019. In addition, the area under gardens under this plant is expected to decrease to 216,550 hectares. If we look at the indicators of peach production in the country by years, in 2000 it was 10968 tons, in 2010 it was 16707.1 tons, and in 2015 this figure was 22550.3 tons. In recent years, the production of peaches and nectar was 26311.0 tons in 2018, 26909.5 tons in 2019 and 29159.5 tons in 2020. Thus, the highest indicator for the economic regions of the country was 9210.4 tons (for 2020) in Guba-Khachmaz economic region [1 p. 502-503].

According to the average productivity per hectare in the world, the Bolivarian Republic of Venezuela (25,298.3 kg/ha), the French Republic (21,987.4 kg/ha), the Republic of Montenegro (21,374.2 kg/ha), the Hashemite Kingdom of Jordan (21,358.5 kg/ha) and the Swiss Confederation (21 340.2 kg/ha). The average yield per hectare of peach orchards in the country was 77.5 cent/ha in 2000, 59.8 cent/ha in 2020 and 54.7 cent/ha in 2015. This figure was 54.6 cent/ha in 2018, 54.7 cent/ha in 2019 and 54.3 cent/ha in 2020. Thus, if we compare the economic regions of the country in terms of average productivity per hectare, the highest figure for 2018-2019-2020 in the Gazakh-Tovuz economic region with 150.2-169.3-181.1 cent/ha, respectively was observed [1 p. 652-655].

There is a lot of literature on the evaluation of economic and biological characteristics of peach and nectarine varieties, including the study of productivity indicators and factors influencing it. According to the literature, green pruning in peach and nectarine varieties had no effect on WSDM (water-soluble dry matter), pH and acidity (Bayazit et al. (2012)). There was no statistically significant difference in the amount of yield per tree between trees with and without green pruning. Bayazit et al. (2012) estimated that this figure averaged 18.68 kg/tree per tree in green pruned trees and 18.53 kg/tree in control trees. As a result of the research, the average weight of fruit was 85.65 grams in peach and nectarine trees, and 66.10 grams in control trees. In parallel with the weight of the fruit, the calibers of the fruits increased (51.98 mm, 57.56 mm and 50.98 mm).

In his research, Y.G.Mukhina (1969) provided information on the amount of hot temperatures for the ripening of peach varieties in the climatic conditions of Crimea and southern Ukraine. According to him, the effective temperature for early-maturing varieties (Pobeditel, Alexander ranniy) (>10˚C) is 700-750˚, for medium-maturing varieties (Sovetskiy, Kudesnik) up to 1000˚, and for late-maturing varieties more than 1300˚. is required.

In their study, Ercan and Özkarakash (2003) reported that the fastest-growing variety was May Crest, and among the varieties that began to ripen in the third week of May, matured for a period of two weeks, or 13-14 days. Elegant Lady and Sun Crest began to ripen in late July and were the latest varieties to be tested until mid-August. Three of the tested varieties ripened in June, two in July and two in August, giving them a chance to get peaches during the summer season. Although the Sun Crest and Elegant Lady varieties ripen in August, the authors chose the Elegant Lady variety, which has the highest fruit quality, as the Sun Crest variety, which has the highest fruit set.

A.V.Smikov, O.S.Fyodorova and T.A.Latsko selected 111 varieties of peach varieties, as well as 13 good varieties in the Nikitsky Botanical Garden of the National Scientific Center. Most of the varieties selected for their quality belong to the Iranian ecological-geographical group, most of the varieties with good qualities are observed in the European ecotype of the Iranian group, and the best indicator is observed in the American ecotype of the Iranian ecological-geographical group [10 p. 47]. As a result of comparison of ecological-geographical groups, the authors found that the varieties belonging to the Iranian group (11.5 kg/tree) were more productive than the North-Chinese group (8.6 kg/tree), the Transcaucasian ecotype of the North-China group (21.8 kg/tree) The productivity of the varieties was found to be less productive than the European ecotype of the Iranian group and the European ecotype of the North China group (32.4 kg/tree).

The peach plant is a very fast-growing plant, and many varieties bear fruit in 2-3 years [5 p. 18]. Studies by the Crimean Agrotechnological University show that the growth and productivity of 7-8-year-old Red Haven trees in 5×3 m planted gardens is free palmette (135.8 cent/ha) and truncated pyramidal compared to the control variant with an improved umbrella (98.1 cent/ha). (136.6 cent/ha) was higher in umbrella gardens [8 p. 130]. On the Black Sea coast of Russia, Red Haven peach orchards were planted in 6x3 and 6x2 m planting schemes using peach saplings, and peach trees on improved bowls or AP-1 saplings were given a V-shaped umbrella shape, yielding 198 quintals per hectare [8 s. 130-131].

Leaf surface 16.2 m² when planting peach orchards with 5x2 m planting scheme; 5x1.5 m and 11.9 m². In terms of productivity, 9.6 t/ha in the 5x1.5 m sowing scheme; 7.2 t/ha were observed in 5x2.5 m sowing scheme [6 p. 1333] .Increasing the number of trees per unit area and planting high-yielding peach orchards using technologically simple structures ensures high productivity. NABabintseva noted that the trees had the highest productivity - 15.4 to 26.0 t/ha during the formation of the leading branched and shrub-shaped umbrellas for trees (1666-2500 trees / ha) compared to the improved cassava umbrella form in the more dense planting scheme. , also notes that the growth rate of trees decreased by 3.7-14.9% [3 p-p. 292-293; 4 s. 8].

A.A.Tsimbalova notes that it is expedient to plant Red Haven variety on the Kuban 86 ridge and on the eastern and northern slopes of humid subtropical areas of Russia with the formation of a V-shaped umbrella on a 5×2 m planting scheme, with a yield of 195 kg/ha [7 p. 408].

The study of productivity indicators of peaches creates conditions for the identification of profitable varieties with higher quality and quantity in the soil and climatic conditions of our country.

II. Materials and methodology.

The research work is carried out on 18 peach and nectarine varieties planted in a 5x3m sowing scheme in an area of 0.17 ha, introduced from Spain in the ETB named after Zardabi of MCHETI. Under observation Melox-26, Melox-31, Melox-37, Netix-25, Netix-28, Netix-30, Netix-34, Redix-25, Redix-27, Redix-30, Redix-2-110, Malix-25, Maliks-36, Maliks-145, Guayox-30, Guayox-35, Gartairo, Gardeta varieties.

The research was carried out on the basis of "Program and methodology of fruit, berry and berry crops" (1999). The selection of the institute's "Fadai" variety was used as a control in the comparative study of the pomological characteristics of the varieties introduced in the research work.

III. The purpose of the study.

Study of agrobiological features of newly introduced peach varieties in Guba-Khachmaz region, as well as active development phases of varieties and selection of high-efficiency and productive varieties adapted to the soil and climatic conditions of the region.

IV. Experimental part.

Early fruiting is one of the most valuable features of the variety, as it allows to shorten the payback period of the investment in orchards. Productivity indicators of newly introduced peach and nectarine varieties were studied by us. During the research years, the productivity per hectare of peach varieties varied between 7.0-19.3 kg, and the average yield per hectare varied between 46.62-128.53 cent/ha. The highest productivity was observed in 2020 (Table 1).

According to the varieties introduced in 2018, the average yield per tree varies from 7.0 to 11.0 kg, and the average yield per hectare varies from 46.62 to 73.26 cent/ha. 6 kg and 57.27 cent/ha.

According to the varieties introduced in 2019, the average yield per tree varies from 10.3 to 15.6 kg, and the average yield per hectare varies from 71.26 to 103.89 cent/ha. 82.58 cent/ha was observed.

According to the varieties introduced in 2020, the average yield per tree varies from 13.0 to 18.3 kg, and the average yield per hectare varies from 86.58 to 218.87 cent/ha. Was 101.89 cent/ha.

According to the research years, the average yield per tree varies from 10.3 to 14.9 kg, and the average yield per hectare varies from 68.37 to 99.67 cent/ha. You have been. According to the research, among the introduced varieties for 2018-2020, Netix-25 (14.2 kg and 94.34 cent/ha), Redix-25 (13.9 kg and 92.35 cent/ha), Netix-30 (13.6 kg and 90.35 cent/ha), Melox-31 (14.9 kg and 99.67 cent/ha), Guayox-35 (13.5 kg and 89.91 cent/ha) and Gardeta (14.0 kg and 93.01 cent/ha) varieties had relatively high indicatorsin terms of average

productivity per tree and average productivity per hectare compared to Fadai variety. The yield increase compared to the control variety (Fadai) was 1.4-2.8 kg/tree. Other varieties had relatively low performance compared to Fadai. Melox31- with 14.9 kg and 99.67 cent/ha was registered in the varieties introduced during the research years, and Melox-26 with 10.3 kg and 68.37 cent/ha was registered with the lowest index.

The variance analysis of the indicators of our research work for the research years was carried out. According to this analysis, F_{fak} was large compared to F_m for introduced varieties, $LDS_{0.05}$= 4.68 and $LDS_{0.01}$ = 7.8.

Table 1
Productivity of peach plant varieties

№	Variety	Productivity per tree, kg			Average yield for research years, kg	Productivity per hectare, cent			Medium product, cent
		2018	2019	2020		2018	2019	2020	
1.	Fadai (c)	8,6	12,4	15,3	12,1	57,27	82,58	101,89	80,58
2.	Melox-26	7,0	10,8	13,0	10,3	46,62	71,92	86,58	68,37
3.	Netix-25	10,0	14,8	17,7	14,2	66,60	98,56	117,88	94,34
4.	Redix-25	9,7	14,5	17,4	13,9	64,60	96,57	115,88	92,35
5.	Malix-25	8,5	12,0	13,6	11,4	56,61	79,92	90,57	75,7
6.	Redix-27	8,3	13,0	13,2	11,5	55,27	86,58	87,91	76,58
7.	Netix-28	8,1	12,2	14,5	11,6	53,94	81,25	96,57	77,25
8.	Netix-30	9,5	14,0	17,2	13,6	63,27	93,24	114,55	90,35
9.	Guayox-30	7,5	11,0	14,6	11,0	49,95	73,26	97,23	73,48
10.	Redix-30	7,0	10,3	13,9	10,4	46,62	68,59	92,57	69,26
11.	Malix-145	8,0	11,0	14,5	11,2	53,28	73,26	96,57	74,37
12.	Melox-31	11,0	15,6	18,3	14,9	73,26	103,89	121,87	99,67
13.	Melox-37	8,2	12,4	14,3	11,6	54,61	82,58	95,23	77,47
14.	Redix-2-110	8,0	11,7	13,2	10,9	53,28	77,92	87,91	73,03
15.	Netix-34	7,0	10,5	14,8	10,7	46,62	69,93	98,56	71,70
16.	Malix-36	8,0	11,4	13,7	11,0	53,28	75,92	91,24	73,48
17.	Guayox-35	10,0	13,5	17,0	13,5	66,60	89,91	113,22	89,91
18.	Gartairo	7,0	10,7	14,1	10,6	46,62	71,26	93,90	70,59
19.	Gardeta	9,8	14,3	17,8	14,0	65,26	95,23	118,54	93,01
									$LDS_{0.05}$=4,68
									$LDS_{0.01}$=7,8

V. Result

The agrobiological characteristics of peach plant varieties introduced in Guba-Khachmaz region, as well as the study of productivity indicators of varieties in 2018-2020 were identified in the research work:

1. The highest productivity by varieties was observed in 2020;

2. Netix-25 (14.2 kg and 94.34 cent/ha), Redix-25 (13.9 kg and 92.35 cent/ha), Netix-30 (13.6 kg and 90.35 cent/ha), Melox-31 (14.9 kg and 99.67 cent/ha), Guayox-35 (13.5 kg and 89.91 cent/ha) and Gardeta (14.0 kg and 93.01 cent/ha) in terms of average productivity per tree and one hectare compared to Fadai variety taken as a control variety varieties had high indicators and depending on the varieties, the yield increase was 1.4-2.8 kg per tree and 9.33-19.09 quintals per hectare;

3. The highest rate on introduced varieties was observed in Melox 31 with 14.9 kg and 99.67 cent/ha.

4. According to the years, was $LDS_{0.05}$= 4.68 and $LDS_{0.01}$= 7.8.

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