

**NEW METHOD OF CULTIVATING PEACH ORCHARDS**

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ABSTRACT

The results of studies where the introduction of optimized methods of tree formation are established allow the creation of intensive peach orchards from strong-growing trees, where the density of standing is 1000 bushes (5x2 m.).

Keywords: Harmonized, shape, traditional, bowl-shaped, Japanese way, yield, income, net income.

Introduction

The fruit yield obtained from existing orchards greatly differs from the potential yield of the fruit species which can give. The difference between the actual productivity and the potential productivity shows that there is a huge internal potential for increasing the productivity of orchards. Although the main indicators of agrophytocoenoses have been identified in the field of cotton and grain, in the field of horticulture, the systems involved in the process of photosynthesis, construction of gardens, regimes of nutrients and moisture, effective control measures against diseases and pests, high-yielding varieties, grafts, and the system of factors determining high productivity in general have not been fully studied. It is known that the traditional, cup-shaped peach cultivating method cannot be used for intensive orchards where strong grafted seedlings are placed at a high density (1000 plants/ha). Therefore, researches on the development of an improved, integrated method using the best traditions of Japanese and Uzbek horticulture in order to create an intensive orchards from peach seedlings with strong grafts are of great importance.

METHODOLOGY OF RESEARCH

The researches were carried out in accordance with the current scientific methodology in the orchards planted with the "Krasnaya Moskva" variety of peach, established on an area of 1.0 hectares (2015) [1].

The experimental field's soil belongs to the pale gray soils, the soil fertility is low, it consists of a stone-gravel layer from the depth of 0-50 cm. According to the results of agrochemical analysis of the soil composition, the total humus content of the soil layer, 0-30 cm, is 0.98%, nitrogen is 0.09%, phosphorus is 0.155%, and potassium is 1.25%. The soil composition is provided with 18 mg/kg of mobile phosphorus and 175 mg/kg of exchangeable potassium.



It is known that in the Japanese method of shaping, in the first year, 2 main branches are cut from a height of 30-40 cm, and the second main branch is cut from a height of 60 cm. Consisting mainly of two mother branches, they later proved unsuitable for our conditions due to growing to 3-3.5 meters, sunburn of the fruit skin, excessive branching and the need for a large number of stakes.

Three mother branches are selected in the "Harmonized form" method, and two opposite mother branches are placed at an angle of 45° to the planting line in order to facilitate processing between the rows and accommodate more seedlings, the third branch is along the planting line or 5/60 is removed and placed at a certain distance from the previous two mother branches.

These branches are left at a length of 80-90 cm every year during the next cutting period, and three parts of the top of the branches that have grown out are cut off. Such cutting ensures the strength of the main side branches and the development of secondary branches from them. In this method, summer pruning is also carried out, since the mother branches are kept in a compact state, it was possible to place up to 1000 strong-growing seedlings in a unit area, and get a high-quality harvest. From the period when the peach orchards begin to harvest, the fruits are harvested.

RESEARCH RESULTS

It is known that photosynthesis in plants that the process of conversion of sunlight energy into energy of chemical plants, is carried out in leaves with the participation of chlorophyll grains, water and carbonic acids, and mineral substances. Therefore, leaves have an important place in plant life. Accordingly, it is important to determine the changes that occur at the leaf surface during a period when young seedlings are maintained for three years and begin to harvest.

Including, the results of the measurements carried out during the growing season show that by the month of August, when the leaves were fully formed in 2015, the number of leaves on 1 tree shaped in the traditional way was 177 when planted in the scheme of 5×2 (1000 bushes/ha) and 5×3 (666 bushes/ha) in the case where the seedlings were placed in the scheme, it reached 195 pieces, while in the case of the Japanese method, 1000 bushes were 198 thick, and 666 bushes were 183 (Table 1).

It was possible to see changing that the increase of leaves surface depending on the feeding regime. Besides, in 2016, when the cup-shaped form was given, the area of one leaf was 5×2 m. in the scheme (1000 bushes/ha), the rate of fertilizers was 125 kg of nitrogen, 100 kg of phosphorus, and 50 kg of potassium, respectively, 31.1-32.0 square meters. cm, 5×3 m. in the scheme (666 bushels/ha), reached 32-34 sq.cm according to the nutritional regime.



Table 1. Dependence of the number of peach leaves and the level of the leaves on the method of shaping, the order of nutrition, and the thickness of the seedling

Method of shaping	Planting scheme	Number of seedling, pcs	Fertilizer rate kg,ha			Number of leaves in 1 bush, pcs		Surface of 1 leaf		Surface of 1bush sm ²		Surface of 1 leaf in 1 ha area, m ²	
			N	P ₂ O ₅	K ₂ O	2016	2017	2016	2017	2016	2017	2016	2017
Cup-shaped method	5×2	1000	125	100	50	577	1068	31,1	24,6	1,8	2,6	1794	2627
	5×2	1000	250	200	100	613	1168	32	31,5	2	3,8	1962	3679
	5×3	666	125	100	50	596	1050	32	29,5	1,9	3,1	1270	2035
	5×3	666	250	200	100	623	1210	34	32	2,1	3,6	1411	2408
Japanese method	5×2	1000	125	100	50	520	715	28,7	25,7	1,5	1,8	1492	1836
	5×2	1000	250	200	100	528	871	29,5	30,6	1,6	2,7	1557	2003
	5×3	666	125	100	50	553	687	31,7	24,3	1,7	1,7	1167	1673
	5×3	666	250	200	100	560	831	33,5	27,6	1,9	1,5	1249	1712
Hermonized method	5×2	1000	125	100	50	615	1205	27,6	31	1,7	3,7	1691	3744
	5×2	1000	250	200	100	630	1418	28,4	28,7	1,8	4,1	1789	4070
	5×3	666	125	100	50	622	1007	31,9	22,6	2	1,5	1321	1509
	5×3	666	250	200	100	524	1120	22	30,4	2,1	2,2	1387	2288

However, the information obtained on the positive effect of the nutritional regime on the leaf surface was not confirmed in some cases.

For instance, when the shape is given in the Japanese way, 5×2 m. in the scheme (1000 bush/ha) due to the increase in the nutritional regime, the leaf area is only 65 sq.m., when the shape is given in the combined method, 5×3 m. in the scheme (666tup/ha). the leaf surface only increased to 66 sq.m. So, according to the experiment, it can be seen that in only two cases, an increase in fertilizer rates led to an increase in leaf surface.

In 2017, it was shown that the increase in the surface of leaves per unit area depends on the rate of fertilizer. For instance, in the variants given in the high rates of fertilizer, in the 5×2 and 5×3 schemes, respectively, 373-1052 sq.m. in the cup-shaped method, 167-39 sq.m. in the Japanese method, and 326-779 sq.m. in the combined method. increased to It is possible to increase the leaf level by planting peach seedlings densely, at 1000 plants per hectare, on low-fertility lands. So, in 3-year-old seedlings (2017), when 1000 seedlings were planted per hectare, the leaf area per hectare was 2627-3679 in the cup-shaped method, 1836-2003 in the Japanese method, and 3744-4070 sq.m in the combined method.

Although the research is designed for three years, we believe that it is appropriate to conduct such research in multi-year experiments, as the inner potential of the 3-year-old peach has not been fully revealed. So, it is undoubtedly important to know what the leaf surface area index is in order to obtain a high yield from the peach tree, both theoretically and practically.



In a number of scientific pamphlets, the increase in the leaf level as a result of the dense placement of seedlings is described as a factor that ensures the early harvest of trees.

Biometric measurements showed that it is possible to increase the surface of leaves in 1 bush due to the improvement of nutrient supply. We can see this situation in 2015-2016. In 2016, due to the increase in the rate of fertilizer in cup-shaped, Japanese and combined methods, the leaf area on 1 bush increased by 0.1-0.2 sq.cm, respectively.

The influence of the tested factors on the change of the leaf level surface in the area unit began to be seen more clearly in 2016, that is, when the peach tree reached its 2nd year. In particular, the leaf area per hectare was 1270-1962 sq.m. in the cup-shaped method, 1167-1557 sq.m. in the Japanese method, and 1321-1789 sq.m. in the combined method. These indicators in 2017 are 2035-3679 sq.m., 1712-2003 sq.m., respectively. and made 1509-4070 sq.m.

In general, the increase in the surface of leaves in the cup-shaped method is explained by the abundance of skeletal branches in this method compared to other methods, and the increase in the surface of leaves at the expense of summer shoots in the combined method. For instance, in the Japanese method, the skelet branches are two, in the combined method, three, while in the traditional method, the branches are left up to four.

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The increase in leaf surface per unit area depended on the rate of fertilizer. For example, in 2017, in 5×2 and 5×3 schemes, in the options provided with high fertilizer rates, the area was 373-1052 sq.m. in the cup-shaped method, 167-39 sq.m. increased to It is possible to increase the leaf level by placing peach seedlings densely, up to 1000 bushes per hectare, in low-fertility lands. So, in 3-year-old seedlings (2017), when 1000 seedlings were planted per hectare, the leaf area per hectare was 2627-3679 in the cup-shaped method, 1836-2003 in the Japanese method, and 3744-4070 sq.m in the combined method.

Since the research was conducted only for three years, we believe that it is appropriate to conduct such research in multi-year experiments, since the inner potential of the 3-year-old peach has not been fully revealed.

Conclusion, theoretically and practically important knowing what the leaf surface area index is for obtaining high yields from peach trees. In peach orchards, the increase in leaf area as a result of dense planting is likely to be recognized as a factor in early fruiting of trees.

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