

Tree formation in intensive peach orchards

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Abstract

One of the main characteristics of the branches of the trees in the main fruit orchards distributed in our country is their very large size. Due to the size of large-sized branches of trees in vigorous-growing fruit-bearing plant species and varieties, they do not fully provide a favorable light regime necessary for the laying and formation of generative buds. In the center of the cone, a region of a large area that is not well lit is formed, in this part the fruits almost do not ripen. Due to the cessation of lateral growth in the stem fruit varieties, strong thinning of the branches is observed, the shift of the crop towards the periphery of the branches is noted. One of the important ways to get out of this situation, as we mentioned above, is to use a small-sized branch system. This type of branch-shabba provides a good use of the feeding area and, in turn, an opportunity to increase the productivity of gardens.

Keywords: Peach, cultivar, stock, scheme, distribution, growth, development, habitus, stem, crown projection, leaf area, crop.

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INTRODUCTION

One of the important elements of the modern technology of peach cultivation is the garden structure and the system of shaping the branches of the trees. Peach is a fruit plant that is very sensitive to the agrotechnical activities carried out in orchards, in particular to the yield load of trees, the method of feeding and the level of illumination of the branches. For the good growth of trees and high-quality harvest, it is necessary to create a branch system that fully provides photosynthesis and convenient nutrition of fruits [1-5].

One of the main characteristics of the branches of the trees in the main fruit orchards distributed in our country is their very large size. Due to the size of large-sized branches of trees in vigorous-growing fruit-bearing plant species and varieties, they do not fully provide a favorable light regime necessary for the laying and formation of generative buds. In the center of the cone, a region of a large area that is not well lit is formed, in this part the fruits almost do not ripen. Due to the cessation of lateral growth in the stem fruit varieties, strong thinning of the branches is observed, the shift of the crop towards the periphery of the branches is noted. One of the important ways to get out of this situation, as we mentioned above, is to use a small-sized branch system. This type of branch-shabba provides a good use of the feeding area and, in turn, an opportunity to increase the productivity of gardens [6-8].

One of the effective ways to improve the lighting pattern in dense gardens is to create a voluminous but modified branch. It is possible to improve the order of light in such branches by opening its center and dividing it into vertical sectors. For this purpose, the central branch is cut at a certain height and the areas inside the branches are opened.

Depending on the variety, graft and soil-climatic conditions, the effectiveness of different methods of shaping peaches is not the same.

In a number of countries, new types of peach tree branches have been developed. These are primarily palmettes, which are common in Italy, Bulgaria and other countries. Saw palmetto has several advantages. This branch type facilitates the mechanization of peach orchard maintenance, particularly disease and pest control and the use of harvesting platforms.

This method of shaping is used in gardens with a density of 500-1000 trees per hectare. According to a number of experiments conducted in different countries, the productivity of palmetto groves is higher than this indicator of cup-shaped groves. However, palmettes are formed with the help of a support, which increases the labor and material costs of building a garden. Today, a number of modifications of palmettes are recommended [9-11].

In many countries, peach orchards are also widely used. This makes it possible to build gardens when relatively dense, especially weakly growing grafts are used. The system of "Adaptive Urushka" (the most common method of shaping) makes it easy to pick fruit from any part of the branch. This branch type consists of 5-6 skeletal branches. Most of the branches are removed at a right angle, which makes it easier to form semi-skeletal branches. This ensures their ideal submission to the central branch and early setting of flower buds and ultimately early harvest. A quick formation of the leaf apparatus is characteristic even if there is little woody part for the flexible stem. This ensures the intensive accumulation of carbohydrates that the tree uses for fruiting. Shortening one-year branches and the lack of inclination to bend them ensures early laying of flower buds (especially in weakly growing grafts) [12-14].

At present, modifications of the shape of the udder, such as "Uruzukcha", "triple flexible udder" have been developed. The first method of shaping is used in weakly growing grafts and involves reducing the size of trees and reducing the amount of skeletal branches. A three-way flexible beam involves the branching of three central branches. In addition to the central branch, on the basis of two skeletal branches formed along the row direction, two more main branches with the same growth power as the central branch are grown. The formation of a vigorous form makes it possible to facilitate pruning, to establish a more dense garden (up to 2000 trees per hectare), to get an early and high harvest.

"Living wall" shaping (vertical-flat branches, fruit wall) is successfully used for peach cultivation in the USA.

In France, the columnar method is widely used to grow vertical peach orchards.

Among the traditional methods of shaping peach branches, cup-shaped shaping is common in many countries of the world. When cupping is used, the light falls well on the central part of the branch. As a result, the growth processes in the trees are intensive, large fruits are formed, and the productivity of the tree is high. Nevertheless, it becomes difficult to mechanically handle the gardens, the absorbed nutrients are not evenly distributed among the branches. The main disadvantage of this method of shaping the branches is the difficulty of controlling the growth of the branches, especially when the tip branches are cut, there is a strong growth of other branches to replace the leader. This makes it difficult to form low well-lit vase-shaped branches.

The indicated shortcoming of cup-shaped branch made it necessary to make certain changes in its formation. In this case, it is recommended to place the skeletal branches rather sparsely and alternately placing the branches of the second order in a fork-like place. This type of branch is called "improved cup". It is also recommended to grow skeletal branches in the direction of rows. This is a "flattened cup". If the central branch is removed in the third year, it is called "late cup". These methods of shaping the horn are directly related to the biological characteristics of peach varieties. They require that the trees be planted fairly sparsely, i.e. 4-5 m between rows and 4-5 m in rows.

TECHNOLOGY OF SHAPING PEACH TREES GROWN ON WEAKLY GROWING ROOTS BY THE "IMPROVED BOWL" METHOD

Peach is a fruit plant that is very sensitive to pruning, and when it is done correctly, the productivity of peach orchards is kept stable for 15-18 years. One of the main elements of caring for this plant, whose branches are prone to thickening and light-loving, is the proper shaping and pruning of its branches.

Usually, peach trees are given a simple cup-shaped shape, in which the main 3-4 skeletal branches are placed in one tier in the form of a chain (Figure 1).

In such a form, skeletal branches are often broken at the base in years when there is a lot of harvest. In order to prevent this negative situation, we recommend giving the shape of peach trees grown on weakly growing grafts in the "improved bowl" method.

PROCEDURE FOR PRUNING SEEDLINGS IN THE FIRST YEAR

According to this system, in the first year after planting seedlings, shaping is carried out as follows. The part up to the strongest branch, which is about 50-60 cm above the soil level, is cut and all the weak branches located in this part are removed from the base. After that, a sparse layer consisting of 3-4 skeletal branches is left in the same circle at a distance of 10-15 cm from each other, at a slope of 40-60°. The central horn section is cut over the 4-skeleton horn. All remaining branches are removed. These 3-4 skeletal branches, which are left for shaping, are cut over the outer bud with a length of 10-15 cm. Seedlings that have grown weakly and cannot grow 3-4 skeletal branches are cut a little higher, and this event ensures that it will take hold well and give well-developed branches next year.

The best period for peach pruning is the period between budding and flowering.

Pruning of trees in the third and fourth year should be focused on completing branch formation. For this, every year from the second year, the second-order branches are grown on the skeletal branch in such a way that they should not cause the tree branches to thicken.

PROCEDURE FOR PRUNING PEACH TREES IN THE SECOND YEAR

Second-year pruning of peach seedlings is carried out in such a way that 2-order branches are left on 3-4 well-developed (40-50 cm) skeletal branches of the selected last year, for this, 2-order branches located at a good distance from each other are subordinate to skeletal branches 25 - 30 cm length is cut. These selected branches should be located on different sides and should not overshadow each other.



Figure 1. A simple cup-shaped peach orchard.

No more than 2-3 branches of the 2nd order left on each skeletal branch. The first branch of the 2nd order should be at a distance of at least 30-35 cm from the base of the skeletal branch, and the next two should be at intervals of 20-25 cm. The skeleton is removed from the base of all the remaining weak branches on the branch, and strong branches are cut, leaving 5-8 buds for the formation of next year's fruit joint (Figures 2 and 3).

During the growing season, many competing branches are formed on the branches of young peach trees. It is best to break them from the base before they become woody.

The branches of the second order should start at least 40-45 cm above the base of the skeletal branch. The branches of the next second order should be 40 cm from the previous one. All of them are formed in free space, not inward, but outward.

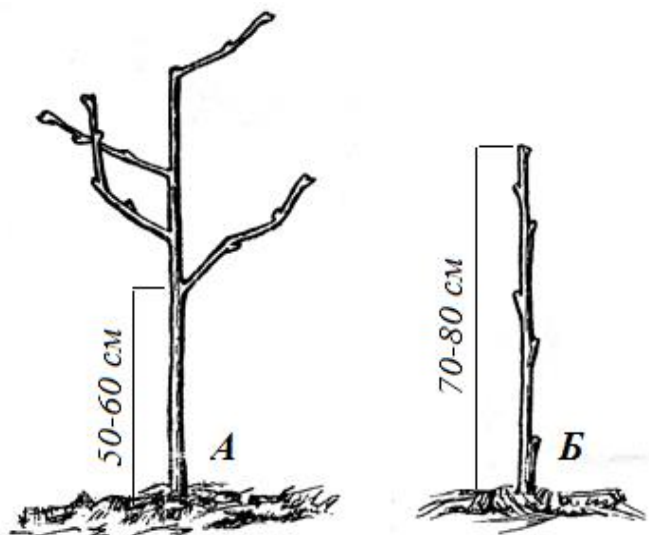


Figure 2. Procedure for pruning a peach seedling in the year of planting.

A - cutting a normally grown seedling; B - cutting a weakly grown seedling

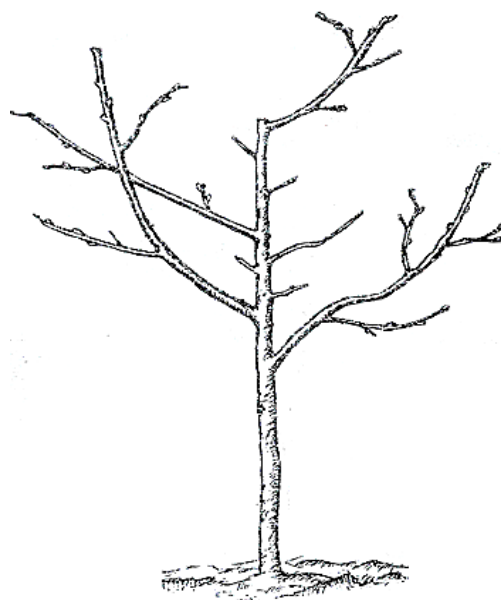


Figure 3. Procedure for pruning peach seedlings in the second year after planting.

PRUNING EVERY YEAR AFTER HARVEST

Shaping of peach trees during the harvest period should be carried out taking into account the characteristics of the variety.

Varieties whose flower buds are densely located along the stem are cut on 8-10 groups of flower buds, syracuses - on 10-15 groups of flower buds.

Normal - mixed branches are left at a distance of 10-20 cm from each other, shortened to 6-10 groups of flower buds.

"Substitute" method is used to ensure that the branches are not bare in the following years and to distribute the harvest evenly (Figure 4).

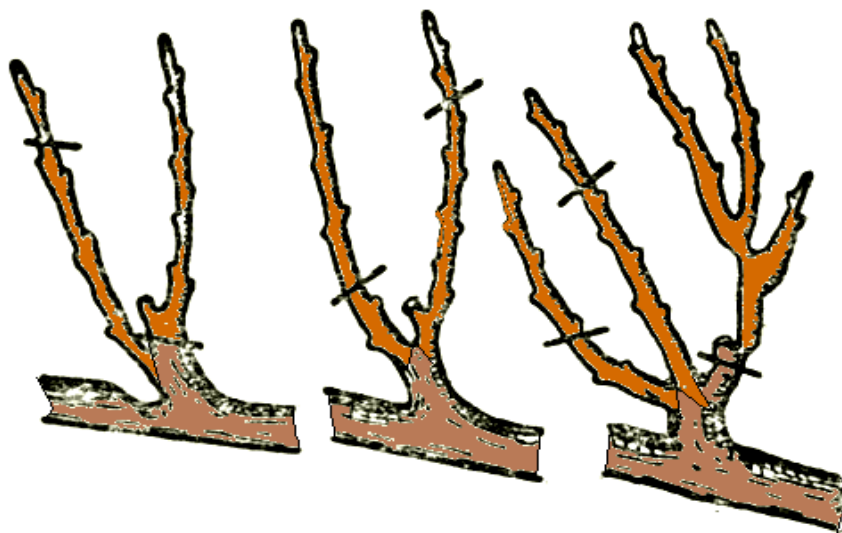


Figure 4. The procedure for pruning peach branches for years in the "substitute" method.

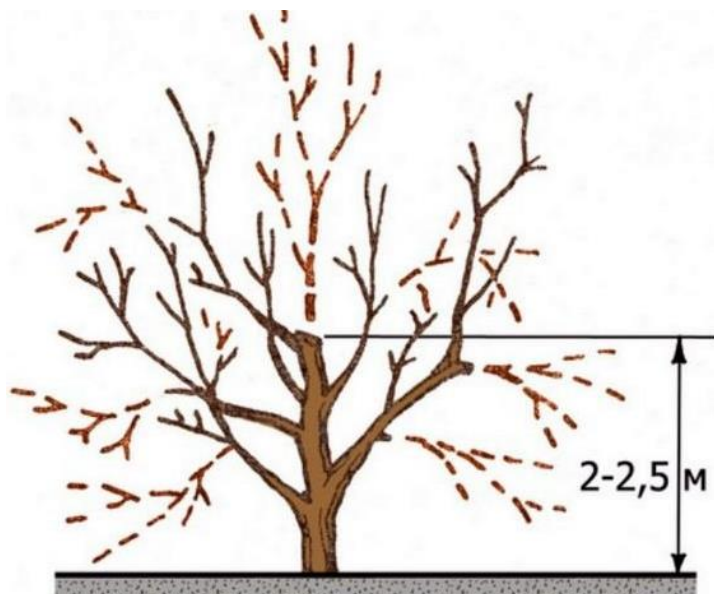


Figure 5. Procedure for rejuvenating peach trees.

It is as follows: during the first year of fruiting, the intermediate mixed branches are cut, leaving 2-3 buds. Next year, the branch that has produced fruit is removed, one of the branches developed from 2-3 buds is left to produce, that is, it is cut according to 6-10 groups of flower buds. The rest are cut, leaving 2 more developed buds. All remaining weak branches are removed from the base, and strong ones are left to bear fruit.

TECHNOLOGY OF REJUVENATING PEACH TREES

Rejuvenation of peach trees is carried out by strong thinning of branches to 3-5-year-old wood. For this, a 3-5-year-old branch is cut over the nearest 1-2-year-old branch (Fig. 5).

In rejuvenation, the transfer of skeletal branches to rooting branches is effective. Rejuvenation is carried out even when the trees are hit by severe frost. In this case, the branch is cut 10-15 cm below the affected area and new branches are grown.

CONCLUSIONS

1. During the growing season, many competing branches are formed on the branches of young peach trees. It is best to break them from the base before they become woody.
2. The branches of the second order should start at least 40-45 cm above the base of the skeletal branch. The branches of the next second order should be 40 cm from the previous one. All of them are formed in free space, not inward, but outward.
3. Shaping of peach trees during the harvest period should be carried out taking into account the characteristics of the variety. Varieties whose flower buds are densely located along the stem are cut on 8-10 groups of flower buds, syracuses - on 10-15 groups of flower buds. Normal - mixed branches are left at a distance of 10-20 cm from each other, shortened to 6-10 groups of flower buds.

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