



Cultivation of Seed Seedlings (Grafts) in Nurseries in Order to Enrich the Genetic Resources of Stone Fruits

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Abstract: this article provides valuable information on the cultivation of seed seedlings (grafts) in nurseries in order to enrich the genetic resources of stone fruits. The article also contains information about the above-ground part of one- and two-year-old stone fruit seedlings.

Keywords: stone, seedling, graft, seed, stratification, seedling.

Stone is mainly prepared in special fields for growing seedlings. Apricot trees are different because they are different. Even among trees of the same species, there are dozens of species that differ in growth strength, fruit ripening period, productivity, resistance to cold, drought, etc. These are often not taken into account when preparing seeds, because seeds of the same type, but of different quality, are collected. Later, from these seeds, seedlings with different growth strength are formed. This situation can be found among the same seedlings in the nursery and even among the same trees in the garden.

In order to complete the diversity of apricot trees in the garden, it is necessary to organize a seed farm for growing grafts. For this purpose, it is necessary to build a special garden for growing seeds of apricot trees in order to grow regionalized cuttings in each nursery. In this case, it is important to choose grafts that have long life, good environmental adaptability, productivity, resistance to cold and drought, and biological compatibility with the graft and have been tested and have economic value.

For orchards where the seeds of stone fruit trees are grown, it is recommended to choose late-ripening trees, the seeds from which germinate well and grow well in the nursery.

Fruit trees, on the other hand, late-growing species are discarded. First of all, the cuttings taken from the selected main trees are planted in the nursery, and grafts are grown from them, and the shoots taken from these main trees should be grafted. Seedlings grown in this way are transplanted from the nursery to the main garden. In addition, some seed-bearing apricot trees can be planted among certain pollinators or planted in an industrial orchard to replace dead trees.

Only high-quality, well-fertilized seeds germinate well, provide good growth and the formation of uniform, strong grafts. Therefore, great importance should be attached to the preparation and storage of stone .

Usually, the stones are prepared when they are fully matured and have a normal color; such seeds have high fertility and grow well.

Since most of the fruit pods are immature, the germination rate of the seeds is low. This condition often occurs in early-ripening stone fruits - apricots, cherries, cherries, peaches, etc. Therefore, it is necessary to prepare seeds from late ripening species and check their germination. However, it is possible to make stone from certain fruits (antiipka, mountain cherry, prickly cherry) that are not yet

ripe, but have started to turn brown. The seeds obtained from such fruits pass the time of preparation for germination much faster and they germinate better than the seeds obtained from ripe fruits.

Germination of seeds obtained from large fruits is higher than seeds obtained from small fruits. That is why stone is not made from small, unripe and tender fruits. The fruits around the branches are fully fertilized, well lit and full of valuable seeds. If the fruits are stored for a long time until the seeds are separated from the fruits, it is necessary to monitor that they are not heated biologically or by themselves, because at a temperature of 45-50°C and excessive humidity, the seeds lose their viability.

The seeds are extracted from the fruits in different ways. The seeds are often removed during drying and canning of fruits. Apricots are pitted manually. If the seeds are not prepared enough, the seeds of other species are separated by hand, and the seeds of small stone fruits (cherries, cherries, gooseberries, etc.) are separated by seed separating machines.

If the stone is prepared in large quantities, it is separated during processing to obtain the juice. Depending on the weight of apricots, the yield of stones from them (according to S.N. Stepanov) is 12-15 percent.

Table 1. Productivity, stratification time and seeding rate

Crop types	Seed yield in relation to fruit mass, %.	The number of seeds in 1 kg, thousand.	Stratification time, days	Sowing rate, kg/ha
Apricot	12-15	0,8 – 0,9	80-100	600-800
Peach	3-6	0,25-0,35	100-120	3000-3500
Almond	-	0, 25-0,3	20-40	400-500

Stone-contaminating compounds should not exceed 1% in apricots, large plums, almonds and walnuts. The dull gray skin of the seeds of stone fruit trees indicates their poor quality. The seed pods and shoots of these species should also be similar to those of seed-bearing trees. The fact that the stones are dark, not cracked, not moldy and odorless when used is a sign of their quality. The wrinkled skin of the pulp of stone fruits indicates that the seed is overdried.

Fruit seeds prepared for autumn planting or stratification (seeded fruits in 50-60 kg bags) are stored in dry and cool buildings with a temperature not higher than 15°C.

Apricot seeds are buried in wet sand in the cellar or in the fields until they are planted. Under these conditions, they retain their viability and normal germination properties for one and a half years.

Since it is difficult to collect seeds in non-harvesting years, farms should have a reserve of seeds and maintain their viability. During storage, living processes in stones, including respiration, do not stop. Excessive humidity and an increase in the temperature of the building, on the contrary, will increase their breathing. This reduces the germination of stones.

Moist air and low temperatures are necessary for the seeds to prepare for germination. This preparation can also take place inside the fruits. However, they do not germinate due to the presence of special substances (inhibitors) that interfere with the process of preparing the seeds for germination. In order for the seeds to germinate, it is necessary to stratify them by creating conditions similar to those observed in nature.

Stratification (sandblasting) of fruit stones. The word stratification is derived from the Greek word "straus" - layered, and it consists in layering the stones with wet sand and storing them at a low temperature of 3+10°C for a long time. In this way, favorable conditions are created for the ripening of stones. In this case, low temperature is not only a factor that ensures their germination, but it is also a condition without which the plant cannot develop. If the temperature is higher than +10°C, the preparation process for germination slows down. In a dry environment with insufficient air penetration, this process stops. The stratification technique is determined by this.

6-8 parts of sand are mixed to 1 part to collect apricot kernels. The seeds of the fruits are separated

from the flesh and sanded. The sand is washed twice to remove impurities that cause them to mold. Before stratification, the stones are soaked in clean water with stirring at least three times. After cooling, they are mixed in wet sand. Sand that is too wet or too dry is also harmful, as it delays the stratification of the stones, and in the later periods it causes the death of the growing points on the initial roots. If there is a lot of stone, it is mixed with a hoe or spade, if it is less, it is mixed by hand.

If the stones are less, they are stratified in bags or wooden boxes. In this case, those of stone fruits are stratified in cells no more than 50-60 cm.

Instead of sand, wood shavings, peat moss and moss are sometimes used. They are soft, light and retain moisture well.

When there are many stones, they are stratified in piles of any length, 60-70 cm deep and 80-100 cm wide. The seeds of stone varieties are mixed with sand at a thickness of 60-65 cm. It is not possible to dig holes in saline lands, otherwise the salt will kill the stones. After the stone is placed in the bales, 2 cm thick wet sand is thrown on top of it, the bordon is closed over it, and then a little bit is taken out to the edge of the bale, and the soil is weighed to a thickness of 20-25 cm.

The duration of stratification of apricot kernels lasts 90-100 days. Knowing these terms, it is possible to stratify stones in time. Apricot and almond seeds can be sown in the soil in late October and early November, because the seeds of these trees germinate directly in the soil itself.

Seedlings of the 2nd variety should have a healthy body (not frozen, not burned, etc.). Insignificant curvature of the body, callus fistulas take at least half of the surface of the wound from cuts during the growth and formation of seedlings. Small wounds on the skin of the body are allowed.

The branches and leaves of seedlings should be properly formed and in accordance with the accepted system of formation. Seedlings should have at least 3-4 main skeletal branches in the formation of the branch-leaf system and at least 2-3 main skeletal branches in the formation of the leader and complex system (without taking into account the length of the branch).

Two-year-old, as well as one-year-old stone fruit seedlings with branches and branches are tied separately by pomological and commodity varieties from 10 pieces, and one-year-old seedlings without branches from 20 pieces.

Seedlings that do not meet the requirements of the 1st and 2nd varieties, and the root system is not well developed, are considered unfit for sale and are left for replanting for better growth and development. Seedlings with severe mechanical damage and infected with quarantine diseases are considered unusable and destroyed.

Labels are attached to the package, indicating the following: company name, form of ownership, trademark (if any), address (legal manufacturer); seedling name (type); type of goods; ball number; storage conditions; age and number of seedlings; is the definition of this standard.

Each transport tare unit must be affixed to one side of the box with a printed label or a clear imprint on a stencil or a stamp on an indelible paint containing the following information: name of holding, form of ownership, trademark (if any), address (legal manufacturer); product name; number of bundles, pieces; storage conditions; seedling age; consists of defining this standard.

Seedlings are tied to a bundle of 50, 25 or 10 pieces, depending on the size of the seedlings, the weight of one bundle should not exceed 10 kg. The bundles are buried in moist soil or placed in boxes according to GOST 11354 or GOST 9396 or placed in bags according to the current regulatory document. The mass of a sack, box or other tares filled with seedlings should not exceed 30 kg.

Before placing the seedlings in the tub, the roots are dipped in diluted soil (baltushka), wet straw or sawdust is sprinkled. The roots are facing forward, they are compacted together, and they are installed obliquely according to the movement of the vehicle.

Each ball of packaging material must be shipped with a certificate of conformity. The materials used for packaging must ensure the preservation of the product during transport and storage.

Seedling bundles are allowed to be placed on wet wrapping materials 5-10 cm thick. In this case, the roots of the bundles of seedlings are arranged in a row, and the roots are placed in the packing materials. The upper rows of seedlings are covered with 15-20 cm of moistened straw or sawdust and covered with a tarpaulin, bag or polyethylene film and tied with a rope. Seedlings are transported in all closed types of vehicles in accordance with the rules of transportation of given vehicles.

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