

## STATUS AND BIOLOGICAL CHARACTERISTICS OF NATURAL REPRODUCTION OF WALNUT FORESTS IN WESTERN TIEN-SHAN

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### **Abstract**

Walnut forest is a valuable gene pool of walnut, unique in the world. These walnut forests are located at an altitude of 1000-2000 m above sea level. Natural walnut forests from Central Asia are of great importance in water storage and regulation, preventing soil erosion. The walnut groves growing in the basins of the mountain rivers provide water supply to the irrigated plantations of the mountains and the oases at the same time. The analysis shows that deep scientific studies have not been conducted on the formation of walnut forests and their natural reproduction in Uzbekistan, and we have set the task of carrying out scientific work in this direction.

**Key words:** forest protection, restoration, rainfed, deciduous forests, nut trees, anthropogenic, geobotanical.

According to the following data, the area occupied by walnuts in Uzbekistan is 2.2 thousand hectares, and the total wood stock is 50.0 thousand m<sup>3</sup>. The average wood stock in 1 hectare of mature walnut groves is 60 m<sup>3</sup>/ha, and walnut groves are able to provide 400 m<sup>3</sup>/ha of wood. . High-yielding walnut groves have an average of 130 trees per hectare. There are many natural walnut groves around villages such as Singkent, Javaz, Kitab district, Bostanliq region, Kashkadarya region. [3].

Walnut forests from the mountains perform forest reclamation tasks, such as storing large amounts of water and preventing erosion. The average completeness of walnut forests in South Kyrgyzstan is 0.4-0.6, and their forest reclamation functions are fulfilled by 50-60%. In order to obtain a harvest from walnut groves with a completeness of 0.7-1.0, it must be thinned[2]. It is of practical importance to develop measures to support the natural recovery of natural walnut groves. When natural walnut groves were studied, it was found that 54-87% of naturally grown seedlings were under walnut groves, and 13-46% were in open areas near walnut groves. Most of the sprouts are under the branches of the walnut tree, and only 3.5-7.5% of them survive up to the age of 15. In walnut groves, it is 0.7-1.8% at the age of 20. On the contrary, it was found that 30-45% of existing seedlings in open areas around walnut groves are preserved up to 4-8 years old, and 13-20% up to 15 years old and older.

Natural regeneration of walnut groves is unsatisfactory, as 80-90% of young seedlings in walnut groves die before 15 years of age. The main reason for such withering of walnut seedlings is the harsh growing conditions, lack of moisture during the growing season, growing in competition with perennial grasses. In addition, livestock grazing in forested areas is not regulated.

Birds and animals play a major role in the distribution of walnut fruit. The growth of young seedlings in walnut groves is slow until 10 years of age, and after 10 years of age, the growth rate accelerates.



Figure 1. indicators of distribution of nuts in mountain slope exposure.

Since the current state of natural reproduction of walnut groves is unsatisfactory, the following measures will be implemented in them.

The flower of the walnut is unisexual and monoecious. Changchi flowers consist of 5-10 cm long inflorescences, which develop on branches that have grown and ripened in the previous year. The number of pollinators in a flower is different: the flowers located at the bottom of the flower have up to 40, and the ones at the top have 6-8.

Single or several seed flowers are located at the tips of branches that have grown this year. In the mountainous part of Bostonliq district, walnut blooms in late April - early May. It is in full bloom at the end of May. Often the pollinator and seed flowers of the walnut tree do not ripen and bloom at the same time. Most walnut trees produce pollinators first, and then the seed flowers mature and open. Such flowering is called a protandric type of flowering, and they are called protandric trees.

In the second group of trees (minority), on the contrary, seed flowers open first, then pollinator flowers. This type of flowering is called proteogenic flowering, and the trees that flower in this type are called proteogenic trees. The ripening and spreading of pollen of proterandric trees coincides with the period when the seeds of proterogenic trees ripen and open, and vice versa.

Therefore, the seeds of flowering plants are pollinated by the pollen of other trees. Dichogamy is the phenomenon in which seed and pollinator flowers do not ripen at the same time and do not bloom at the same time in walnut tree. Therefore, the productivity of the walnut tree

depends on the ripening and pollination of both the seed and pollinator flowers at the same time. Mixing different varieties in the establishment of cultivated walnut groves improves their pollination and ultimately increases productivity. The bark of young trees is light gray, smooth, and the bark of old trees is dark gray. The leaves are large shedding, unpaired pinnate. The flowers are monoecious, separate sexes, and it is very important that pollinator and seed-bearing female flowers open at the same time to get a good harvest.

Cutting of natural walnut groves for the purpose of light transmission, maintenance and thinning;

Updating them using promising forms and varieties;

Development of measures to combat diseases and pests in walnut groves in existing areas. It is necessary to strengthen the level of protection of natural walnut groves. During the period of harvesting walnut fruit, the seed trees or branches should be left. It is necessary to regulate the seasonal feeding of livestock in the area of natural forests. Currently, natural walnut groves are very dense and in some areas very sparse, and in order to improve their condition, it is necessary to carry out sanitary pruning in these areas. In the restoration of natural walnut groves, it is necessary to use scientifically based and biologically acceptable measures - activities that support the natural recovery process from their seeds.

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