

MEDICINAL PROPERTIES AND AGROTECHNOLOGY OF GROWING ARONIA MELANOCARPA L.

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Abstract. The flora of Uzbekistan consists about 4 500 species of vascular plants due to it's biogeographically features, which make a center of medicinal plant diversity (sharply continental climate, availability sultry deserts and high mountains, abundance of endemic flora). About 600 species of medicinal plants has been used in traditional medicine, but according to last research we can confirm that in Uzbekistan are growing 1154 species, which are supposed to be medicinal.

INTRODUCTION

After statistical analysis of obtained data we can surely confirm that medicinal flora of Karakalpakstan is represented by 444 species from 241 genera, which belong to 69 families [1]. Plant distribution. The native land of *Aronia melanocarpa* L. is eastern North America. *Aronia melanocarpa* L. is a strongly branching shrub up to 3 meters high, and in its natural range (East, North America) it usually reaches 0.5 to 2 meters, sometimes up to 4 meters. At a young age, the crown is compact, with a narrowed crown, which later grows to a diameter of 1.5 to 2 meters. One-year-old shoots are reddish-black, later turning black-gray. The leaves are simple, entire, 4-8 cm long and 3-5 cm wide, oval-shaped. The upper surface of the leaf is thick, fleshy, light, dark green; the lower surface is white, covered with spots and sparsely pubescent. The flowers are small and bisexual, with five petals, white or slightly pale red, densely arranged in a corolla 5-6 cm in diameter. It blooms in May-June. The flowering period lasts 12-16 days. The fruits ripen in August-September. The fruits are round, sometimes with a rough-round shape, dark or dark-red in color, 6-8 mm in diameter, with a sour-sweet taste. The weight of one fruit is 0.6-1.5 grams. The fruits of cultivated varieties are larger[3].

To study the cultivation of this plant, I conducted an experiment in our land around the house. In this, I measured the roots and rhizomes. I started my experiment in 2024 and studied them by planting seeds, but I did not get good results. Then I got good results by planting roots and rhizomes. I put the root ball in normal water, and after 7-9 days, the roots began to sprout, then I planted it in the experimental area and in the flower pot (Figure 1).

Regarding the medicinal properties of the plant, dietary antioxidants are very important. Antioxidants are substances that can scavenge free radicals, unstable and reactive forms with an unpaired electron in the outer orbit. Free radicals can cause "oxidative stress" in the human body, which leads to cellular damage and various chronic diseases such as atherosclerosis, inflammation, cancer and neurodegenerative diseases. Some dietary antioxidants are able to donate hydrogen radicals and therefore can act as free radical scavengers. Therefore, these compounds can prevent some important points in the development of disorders[1,3].**Figure 1.** *Planting process of Aronia melanocarpa L. plant*





Agrotechnical measures. Undemanding to soil conditions. It bears fruit well even on soils with low nutrient content. It is shade-tolerant, but in such conditions the yield decreases significantly. If American *Aronia melanocarpa* L. is moderately tolerant to cold climatic conditions, then the cultivated *Aronia melanocarpa* L. plant is highly tolerant to winter frosts of -35-40o C. It is propagated mainly by stratification of seeds. In the conditions of Uzbekistan, it is propagated vegetatively, using cuttings. It has been found that cuttings prepared from the middle and upper parts of a one-year shoot during the period when development has stopped have a strong rooting.

For rooting, *Aronia melanocarpa* L. cuttings are prepared at the end of the season, in October-November. Cuttings are cut 20-25 cm long and planted in the sand at a depth of 10-15 cm. Such cuttings can also be planted in specially prepared substrates in greenhouses. Cuttings mature into ready-made seedlings in 2 years in the open air and 1 year in greenhouses. The optimal environment for planting cuttings is the soil fertilized with rotted manure (2 buckets per 1 m²) in the greenhouse and well-compacted, leveled, with a 15 cm layer of river sand on top. Cuttings are planted in a shallow trench to a depth of 5-10 cm. Watered 4 times a day, every three hours[3]. The use of heteroauxin (in the absence of a fogging device) during cutting preparation increases rooting by 10-15%. Treatment with a small amount of potassium permanganate solution also accelerates rooting and reduces the process of rotting in the soil. 20-30 days after planting the cuttings, swelling of the rooting points becomes noticeable. By this time, the daily watering is reduced to 2 times (morning and

evening). On the 40-50th day, the greenhouse film is removed and replaced with white fabric. The watering rate is reduced to 1 (morning). In early September, the covering fabric is removed from the lower part of the greenhouse. Watering is done once a week, and in October, watering is stopped. Seedlings reach a height of 50-80 cm, form several stems, and seedlings are ready for planting. In the fall, the area allocated for planting aronia is plowed to a depth of 25-30 cm. It is leveled and ground in the spring[2,3].

Hand or with a deep-digger, 40x40 cm and 50 cm deep planting holes are dug. A bucket of rotted manure mixed with phosphorus (1:5) is placed in each hole. Fertilizer is mixed into the soil at the bottom of the hole. Before planting, the seedlings are treated as follows: damaged roots are removed, the ends of all roots are trimmed, and the stem length is shortened to reduce evaporation from the soil, which increases the viability and development of the seedling. After planting, irrigation ditches are dug near the planting holes using a "shovel" - a cutting tool. The soil in the holes is watered thoroughly until it is completely moistened. In the first year, it is watered up to 10 times. Cultivation is carried out after every 2-3 irrigations, clearing large weeds growing from the grooves. It should also be borne in mind that when the cultivator is deeply buried or when it is dug deeply by hand, the root system may be damaged. In damaged soil, the number of tubers increases, which hinders the development of the plant species, and the yield of tubers decreases. The resulting root tubers should be gradually removed. With strict adherence to the recommended agricultural techniques, the aronia variety begins to bear fruit in the second year after planting. Seedlings begin to bear fruit in the 3-4th year and subsequent years.

The yield (fruits) is 3-4 centners per hectare in the first years, and 10-12 centners in subsequent years.

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