

**Mamur Akhunboboyev M.**  
*Senior teacher of Gulistan State University*  
**Nurbek Musurmanov U.**  
*Doctoral student(PhD) of Gulistan State University*

## **THE SIGNIFICANCE OF LANDSCAPE PLANTS IN LANDSCAPE GREENING OF SIRDARYA REGION.**

***Annotatsiya:** The climate, nature and soil of Syrdarya region are different from other regions. In particular, in the regions of our region, there are various ornamental trees, cities and tree saplings are being planted in the districts.*

*It should be noted that, despite the greening works carried out in the cities and districts, the fact that the regional underground seepage water is close to the surface of the earth leads to soil salinity, which has a negative effect on the development of these planted ornamental tree seedlings.*

**Key words:** PAVLOVNIYA, decorative tree, climate, nature, soil, Shan Tong, environment.

## **ЗНАЧЕНИЕ ЛАНДШАФТНЫХ РАСТЕНИЙ В ЛАНДШАФТНОМ ОЗЕЛЕНЕНИИ СЫРДАРЬИНСКОЙ ОБЛАСТИ**

***Аннотация:** Климат, природа и почвы Сырдарьинской области отличаются от других регионов. В частности, в районах нашей области растут различные декоративные деревья, в районах города и высаживаются саженцы деревьев.*

*Следует отметить, что, несмотря на проводимые в городах и районах работы по озеленению, близкое расположение региональных подземных фильтрационных вод к поверхности земли приводит к засолению почв, что отрицательно влияет на развитие этих насаждений. саженцы декоративных деревьев.*

**Ключевые слова:** ПАВЛОВНИЯ, декоративное дерево, климат, природа, почва, Шань Тонг, окружающая среда.

Based on these problems, taking into account the natural conditions of our region, the PAVLOVNIYA decorative tree was studied, and it attracted us with its natural climate and tolerance to the soil of our region.

In particular, this ornamental tree is considered to be the fastest growing ornamental tree, it blooms before the leaves in spring, and its flowers emit a pleasant fragrance. The leaves are large, thick and cool. All kinds of insects do not fall on its body and leaves, and it does not require chemical treatment. Compared to other trees, it absorbed 10 times more SO<sub>2</sub> gas and released 10 times more O<sub>2</sub> oxygen. When its branches and leaves are burned in autumn, it emits very little toxic gases (10 times less than other trees). It grows up to 3-5 meters per year. It grows 20 - 25 m tall. Lives around 100 years. If the pavlovian tree is not given shape in time, the diameter will be from 7 m to 20 m.

In the last 5-6 years, the interest in Pavlovnia is increasing in our country, so it is proposed to implement this tree in our region.

Also, the Pavlovnia tree is valued not only for its fastest growth, but also for its amazing beauty and blossoming, as a source of valuable wood, honey, and biomass.

### **For reference:**

Pavlovnia catalpifolia - Catalpa Pavlovnia or Snow Pavlovnia

Pavlovnia elongata — Long Pavlovnia.

Pavlovnia farGESii — Fargez Pavlovnia.

Pavlovnia fortunei HEMSL. — Fartunei Pavlovnia.

Pavlovnia kavakamii — Kavakami Pavlovnia.

Pavlovnia tomentosa STEUD. — Fibrous pavlovnia.

Dawn Dawn Pavlovnia — Dawn Dawn Pavlovnia.

There are Catalpa Pavlovnia (*Pavlovnia satrapifolia*) or Yoidok Pavlovnia trees.

There are many types and varieties of the Pavlovnia tree, but the Shan Tong Pavlovnia variety differs from other types in that it is suitable for the climate and nature of the region.

Shan Tong - Pavlovnia is the newest and best hybrid, which is a hybrid between Fibrous Pavlovnia (*P. tomentosa*) and *P. Fortunei* (*P. Fortunei*) is derived from crossing species. Compared to other species, Shan Tong has the following advantages:

- rapid growth;
- resistance to diseases, parasites, insects;
- high resistance to drought and cold;
- high yield of wood;
- excellent quality of wood;
- adaptability to a wide area;
- the feature of rapid regrowth after cutting.

Based on the comparative data of the fast-growing Shan Tong hybrid and the most popular old variety N1 Yuza grown in the same area, the average size of Shan Tong hybrid was 63.7% higher than the size of the old N1 Yuza variety. Also, Shan Tong regenerates quickly after cutting, so the period between cuttings is shorter than other types of Pavlovnia.

Resistance to diseases and insects, rapid growth are the most important indicators in creating high-quality Pavlovnia plantations. The results of field trials showed that Shan Tong, which has been grown for 7 years, has a low incidence rate compared to other types of Pavlovnia. The results of experiments conducted over several years have shown the resistance of the Shan Tong variety to other species against parasitic insects - leafhoppers, woodworms, eriophora insects.

**High resistance to drought and cold.** Resistance to natural conditions is the most important indicator in the selection of Pavlovnia varieties. It was found in experiments that 4-year-old trees of the Shan Tong variety grew normally in the Shennan province of China, where the air temperature reaches +42.0 degrees Celsius in summer, in a condition without rain for 63 days. It is these plants that have withstood temperatures as low as -20.0C

**High productivity of excellent quality wood.** The trunk of the Shan Tong variety is straight, tall, hollow, and of high quality. Shan Tong is completely different from the *Tomentosa* type by the length of the crown, the crown of the *Tomentosa* type is conical. The wood yield of a Shan Tong tree grown individually for 7 years in China reached 0.4-0.8 m<sup>3</sup>, which is 42-96% more than other species of Pavlovnia.

Economy of planting areas. All types of Pavlovnia are divided into two categories according to the shape of the crown: long-medium and wide-conical. The crown of a tree with an elongated crown is 40 percent thinner than that of a tree with a wide conical crown. For example, *Tomentosa* Pavlovnia has a wide conical crown, while Shan Tong has an elongated crown, so more Shan Tong trees can be planted on 1 hectare of land than *Tomentosa*. In addition, Shan Tong Pavlovnia plantations are

very convenient to grow together with annual crops for additional income, such as corn, cotton, tomatoes, cucumbers, etc.

**The width of the breeding area.** The parental forms of Shan Tong, *P. fortunei* and *P. tomentosa*, are widely distributed in wild and artificial plantations in the 3 main areas of China and are adapted to these areas. Because the Shan Tong variety combines the best genes of both forms, it is more adaptable to different areas, even where the parent forms do not grow. Many years of practice have shown that Shan Tong can be grown not only in the new northern regions of China, but also in the USA, Germany, Bulgaria, Iran, Nepal, Vietnam, Burma, Laos, Uganda, Indonesia, Russia and Uzbekistan.

**Fast regrowth after cutting.** Once the main trunk of the tree is cut, Shan Tong's regeneration process is 100 percent efficient. After each cutting, the transition period of the Shan Tong variety to the maturity stage is shortened, and twice-cut trees are 1 year earlier than single-cut trees.

**Where not to plant Pavlovnia?** Pavlovnia is an undemanding tree, it loves water, so it can be grown almost anywhere where there is water. It grows in a wide range of environments in a variety of soils. The limiting factors in growing this tree are its rapid growth, large size, and extremely strong roots.

Therefore, it is not recommended to plant Pavlovnia in the following places

- in the garden area of the house;
- next to the foundation or house.

In a word, Pavlovnia is not a very good choice for decorating private housing estates that are not larger than 0.06 hectares (6 acres). Although the root itself is straight, it can grow horizontally, these slabs can damage foundations and sidewalks, causing significant damage.

**What is the difference between a seedling and a seedling of Pavlovnia?**

Pavlovnia can be purchased from De Nova agrocompany in two varieties - seedling and seedling form. Germination –

- obtained by clonal micropropagation with invitro technology;
- exactly like twins;
- free from diseases and viruses;
- grown in 10 x 10 cm flowerbeds;
- is a plant with at least 4-5 leaves and roots. Usually the seedlings serve as a source of seedlings and are planted in open fields and grow into 1 to 3 meter tall seedlings from April-May to November-December seasons.

Seedlings –

- from 0.5 to 3 meters in height;
- are exactly similar to each other;
- obtained from sprouts;
- grown in the open ground in the seasons from April-May to November-December;
- has well-developed root, body and leaves;

— is a plant ready for creating plantations and for other purposes. Seedlings can be planted for plantations and other purposes in autumn - November - December or spring - from March to the end of May..

#### **Where to plant Pavlovnya?**

- as a main crop in the form of a plantation in open fields;
- in open field plantations, among other crops, for example, soybeans, wheat, cotton, corn, etc.;
- around open fields planted with other crops, such as cotton, wheat, corn, etc.;
- on the sides of parks, roads, highways, railways;
- 4-5 meters away from cafes, shops, newly built buildings can be easily grown.

The large fibrous leaves of Pavlovnia release a large amount of oxygen into the atmosphere, and in terms of their cleaning qualities, the plant is known to increase the deciduous trees. Opening an area of 10 hectares per year absorbs almost 300 tons of carbon dioxide and attracts 1,000 tons of dust. The root system that penetrates deep into the soil prevents its erosion and air loss. Along with the decorative effect, it makes Pavlovnia a suitable tree for beautification of parks, squares, city parks and streets. Long-term frost-resistant species are grown in the middle zone and take the place of weak and long-growing trees. With their help, areas protected from the wind are formed and protect land areas from erosion.

Pavlovnia wood, 1 cubic meter of this tree weighs about 250 kg. Pavlovnia is twice as light as pine, but it is much superior in technical characteristics. It is durable, does not crack, almost does not rot, works easily with various tools and holds fasteners.

To grow pavlovnia, it is necessary to protect it from strong windy places, which are flat, good and away from fruit trees. The soil can be slightly alkaline to acidic. Black soil, sandy loam and soft sand are suitable. Representatives of the Pavlovnia family are very similar to each other and care for them is usually the same. All of them are long-lived in the garden and can grow for more than 100 years. Trees do not require soil fertility and can even grow in soil with a lime content of up to 2%. To get a beautiful, delicate and flowering plant, it is better to have a pH = 6, moderately moist, well-drained soil with clay. The tree does not like drought and swamps. Pavlovnia grows almost 6 times faster than oak. Under favorable conditions with humidity and an average annual temperature of + 10-14 ° C, trees grow from 2.5 to 4.5 m in one year. In the first two years, seedlings grow, turning into compact, thin, densely leafy trees.

The frost resistance of trees differs depending on the species: some species die at 0 ° C, others are resistant to severe frosts of -30 ° C and are not clearly harmed..



**Picture 1. The view of Pavlovnia woodlands in the winter season**

The life of Pavlovnia reaches 80-100 years. Among the fastest growing species, this is a record. The homeland of most species is China and Japan. In the Land of the Ancient Sun, this tree is one of the national symbols. The imperial coat, state seal, award order, medal and banknote are decorated with images of flowers and leaves.

The tree is distributed in the southern provinces of China and some regions of Southeast Asia: Taiwan, Korea, Laos and Vietnam. It occurs in flat, richly moistened areas not exceeding 800 meters above sea level.

Thermophilic species took root in countries with a similar climate: in the south of North America, along the Mediterranean Sea, in the south of Crimea, in southern Ukraine, in the Caucasus. Due to the high adaptability of some species, it is grown in dry climate zones.

#### **The difficulty of growing Povlovnia.**

There are certain difficulties in the reproduction of this plant. However, experience shows that a little patience and everything will work out.

#### **How to plant pavlovnia**

The tree can be propagated using seeds or roots. The optimal time for planting is after the leaves have passed. For pavlovnia, you need to dig to a depth of 85 cm and mix it with the ground, put mixed fertilizers at the bottom. At the time of planting, it should be taken into account that the root should be higher than 3 cm, or at the same level as the soil.

To plant a povlovnia tree, it is necessary to choose a well-lit place where the shadow lasts only a few hours a day. In addition, it should be protected from cold wind from winter and summer snow.

It is normal for a young tree to grow from a cut. If the cut root is high when the crop is planted, then the body of the pavlovnia will be crooked. It should not be forgotten that the tree needs good watering during spring. In the autumn and winter months, there is enough natural precipitation for the tree.

In order not to damage the root system, if possible, the young plant should be carefully removed from the container along with the soil. The prefab is placed in the hole



**Picture 2. Cultivation of Pavlovnia in greenhouses**

#### **Watering and fertilizing.**

The tree is thermophilic and loves moisture. It requires regular watering especially when it is young (first, second and third year) and in high summer temperatures. For Pavlovnia, the sprinkler system of moisture distribution is undesirable, because it disrupts the development of the surface root system and this appearance. A deep tree is introduced into the water. The need for mineral and organic fertilizers is present in the period of youth and in conditions of infertility, loss of soil. In all other cases, Pavlovnia develops normally without additives. It depends on the ability of the plant to adapt to the soil composition and specific climatic conditions.

Fertilization can be done in three ways: seeds, cuttings and roots. In the first case, all amateur gardeners should be warned. Pavlovnia seeds are not widely available in specialty stores, but can still be propagated. It should be remembered that they maintain a good plant only for the first six months, then they begin to lose their ability to plant quickly. It was not in vain to buy and wait for the result, take into account the time specified on the packaging. Planting is done in early spring in a shallow

container. The seeds are distributed correctly on a moist surface and sprinkled only with a little soil and placed in a warm and bright place. Seedlings appear after 4-5 weeks. When they have 1-2 pairs of true leaves, they should be planted in individual pots.



Cuttings and root seeds can be obtained from trees in spring and autumn. In the first case, the silk should be very long. At the time of planting, cut off the soil level or put it 3-4 cm above the surface, otherwise the new body will twist. One-year-old seedlings are recommended for outdoor planting: they are very resistant to weather changes. Works are carried out in April-October. Pits are made 1 m deep and 60-70 cm



A 20 cm thin gravel drainage layer was placed at the bottom. Leaf humus, rotted manure and 40 g of complex mineral fertilizer are added to the soil. When it is planted near a tree, the top is fixed, a weak root is attached to it. Immediately and abundantly water seedlings that consume 20 liters of water for 1 copy.



### **Plantations created from pavlovnia**

If you want to grow pavlovian from seeds, you need to soak them in water, checking them for moisture. It is necessary to remove the floating objects, every day it is necessary to gradually water the material to get seedlings up to + 22-25 ° C. After 2 weeks, the first shoots appear. During this period, napkins with seeds are placed in a container with a nutrient mixture of leaf and turf soil. From above they are only dust with a layer of 2-3 mm. It is available in light conditions every day, preventing the appearance of strong growth of the material. Mature seedlings are transplanted to open ground in one year.



Caring for a man tree is easy. Despite its subtropical origin, it adapts to almost any environmental conditions, tolerates drought, strong heat, and is unpretentious. The main thing exotics need: regular hydration and protection from extreme cold.

Watering young plants should be moistened weekly during the growing season by pouring 10 liters of water at the root of the plant at a time. By the age of 3, the root system of trees



grows very deep and they no longer need additional moisture. Watering large specimens is recommended only for prolonged drought. Pristvolli circles should be free from weeds and the soil should be carefully loosened at a depth of 5-7 cm.

Based on the above information, I suggest to plant the Pavlonia tree in the avenues of the streets of our region.

The information of Alisher Toraev, doctor of biological sciences, professor, was used in the recognition of plant biology.

### References.

1. O‘zbekiston Respublikasi Prezidentining 2023-yil 11-sentabrdagi PF-158-son [Farmoni](https://lex.uz/ru/docs/-6600413) “O‘zbekiston-2030” Strategiyasi. <https://lex.uz/ru/docs/-6600413>
2. Н.Н.Колосовскийнинг энергия ишлаб чиқариш цикллари назариясини, энг аввало, иқтисодий районлар хўжалик тизимини таҳлил этиш, ўрганиш усули сифатида ёндошганда, унинг амалий аҳамияти жуда юқоридир (Солиев, Маллабоев, 1988).
3. М.Р. Masharipovich., N.U. Musurmanov Sirdaryo viloyati sug‘oriladigan yerlarni sho‘rlanganligi va ularning tuz rejimini baholash
4. Global environmental problems Musurmanov Nurbek Ummatqul o‘g‘li
5. Alimqul o‘g‘li, U. O., & Toxir o‘g‘li, Q. Z. (2023). SIRDARYO VILOYATI GEOSISTEMALARI VA ULARDAN FOYDALANISH HOLATI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIIY JURNALI*, 3(12), 154-157.
6. Karshibayeva L.K., Egamqulov H.E. Sirdaryo viloyati geografiyasi darslik Toshkent-2024.
7. Umirzaqov O. A., Anarboyeva S. M. SIRDARYO VILOYATI YER-SUV RESURSLARIDAN FOYDALANISH SAMARADORLIGINI OSHIRISHNING ASOSIY YO‘NALISHLARI // Экономика и социум. – 2023. – №. 12 (115)-1. – С. 824-828.
8. Геоэкологик муаммоларни ҳал этишда кўкаламзорлаштириш масалаларига доир мулоҳазалар Мусурманов Нурбек, Эшқуватов Шухрат
9. Sayfullayev A.F. Oriental Renaissance: Innovative, educational, natural and social sciences. *SJIF 2023* = 6.131 / ASI Factor = 1.7. 3(4/2), April, 2023
10. Oybek, U., & Mansurovich, A. S. (2024). ZAMONAVIY JAMIYATNING PSIXOLOGIK MUAMMOLARI-SABABLARI VA OQIBATLARI. *Journal of new century innovations*, 50(2), 80-83.
11. Khaitovna PM, Faksriddinovich MS Technology of growing cauliflower // *Texas Journal of Interdisciplinary Research*. - 2022. - Т. 6. - S. 8-10.
12. Kurbaniyazov, B., Berdimuratov, G., Kholova, S.H., Safarov, A., & Safarov, K. (2021). Importance of catalpa groups in cultural city greening in the case of Uzbekistan. In *E3S Web of Conferences* (Vol. 258, p. 03026). EDP Sciences.