



UDC 633.88

**BIOLOGICAL FEATURES OF AMORPHA FRUTICOSA****Kosbaulieva Bayan Zharylkasynovna***Assistant, Department of General Biology and Physiology, Karakalpak State University named after. Berdakha  
Republic of Karakalpakstan***ANNOTATION**

*The article discusses the peculiarities of the biology of *Amorpha fruticosa*. The biological characteristics of *Amorpha* shrub-howls have special functions that help them adapt to different conditions in their habitat and withstand climate change. The plants are not only highly decorative, but have medicinal value and are an excellent honey plant.*

**KEY WORDS:** *function, climate, soil, flowers, honey plant, landscape design, decorativeness.*

The biological features of the genus *Amorpha* have amazing functions that help them adapt to different living conditions in the surrounding habitat and also provide climate control. The wide distribution of the genus *Amorpha* is observed throughout Central and Eastern Europe, East Asia and North America. The most famous representative of this category is *Amorpha fruticosa* or *Amorpha* shrub.

*Amorpha fruticosa* is a deciduous shrub, a species of the genus *Amorpha* of the Legume family (Fabaceae). *Amorpha* shrub is a representative of the Legume family native to the eastern and central regions of North America with a mild climate and dry soils. Of the 15 species of the genus, the most winter-hardy is *Amorpha* shrub, which can survive in winter under snow cover and is therefore of interest for urban landscaping. *Amorpha* shrubs are found in nature along the edges of forests, in open places, very close to water.

*Amorpha* shrub is a deciduous shrub up to 1.5-2(3-6) m high with a spreading crown of twig-like shoots covered with alternate pinnate leaves up to 30 cm long. The leaves forming the leaf are dark green or, according to other sources, bright green, ellipsoid in quantities from 11 to 25 pcs. with ciliated edge.

The plant is attractive with pinkish-blue vertically standing apical racemes-inflorescences up to 15 cm long, formed by small (up to 5 mm) fragrant flowers with bright yellow stamens. There are up to 150 flowers in one dense inflorescence.

*Amorpha* blooms within a month. During the flowering period, the shrub is especially decorative. Flowers develop on the branches of the current year. The fruit is a single-seeded curved bean, gray or brown, indehiscent, ripens in September, but only in warm weather, stays on the bushes until spring. The fruits contain essential oils that have antiseptic properties.

The weight of 1000 seeds in pods is about 10 g. They germinate at +20...+30 °C, so they are sown in late spring after scarification, scalding with boiling water and subsequent daily soaking in water, or treatment with concentrated sulfuric acid for 5-8 minutes . or cold stratification for 2 months.

*Amorpha* shrub forms a powerful, deep root system, produces abundant root shoots, and can be easily propagated with green cuttings. This is used for vegetative propagation.

The plant thrives on any type of soil, even rocky and sandy. But if it is planted for the purpose of decorating the site, then it is better to choose light sandstones, loams with liming in case of high acidity. The soil should be drained, fresh and loose.

*Amorpha* shrub is very light-loving and tolerates light shade. In urban environmental conditions, *amorpha* is stable, tolerates drought, heat, dust, gas pollution, soil salinity, and tolerates flooding well. It does not tolerate, like all legumes, heavy clay soils. Optimal soil acidity pH 6.0-7.5.



Amorpha shrub is widely used in steppe afforestation and urban landscaping. Well fixes sandy slopes, soils and slopes, rocky gardens, effectively prevents soil washout. Protects soils from erosion.

Amorpha shrub is widely used in landscape design due to its unique appearance and diverse application possibilities. One of the ways to use amorpha shrubs in landscape design is to create a hedge or fence. Thanks to its dense growth and dense foliage, the amorpha shrub perfectly serves as a natural fence. It also uses amorpha in alpine gardens and rocky gardens. Thanks to its shape and texture, this shrub brings ornamentation and originality to the composition, emphasizing the beauty of stones and other elements of this type of landscape. Combining amorphous shrubs with other plant species and decorative elements allows you to create unique compositions.

Amorpha shrub tolerates shearing well, recommended for hedges, mixborders, groups, requires sanitary pruning, annual growth of more than 1.5 m. Caring for amorpha is not difficult. Listed below are the main agrotechnical measures for caring for shrubs.

□ The crop does not need manual watering, especially in cases where it already grows near water. Only recently planted bushes or those suffering from a long and severe drought are irrigated.

□ If growth occurs on rich soil, there is no need to fertilize the amorpha. However, in soil poor in nutrients, it is necessary to apply dry mineral fertilizer once every 5 years when digging the ground under the bush.

□ In spring, deformed, dry and frozen shoots are cut off, which is quite enough. If the plant begins to wither and slow down in growth, it is cut off to a stump, rejuvenating it.

□ In winter, the roots of the amorpha are densely mulched with organic materials, and the branches are bent to the ground and covered with spruce branches.

Amorpha shrub is not only highly decorative, but also very useful. Its seeds contain many essential oils, microelements, vitamins, and acids necessary for humans. They also contain amorphine, a sedative and neurotropic substance. On its basis, some sedatives are created in pharmacology. In folk medicine, amorpha seeds are also actively used - soothing infusions and decoctions are prepared from them.

In addition to its medical purposes, amorpha shrub is also an excellent honey plant. When it blooms, the bees are only interested in it, paying almost no attention to other crops. The daily bee harvest for one hive is 1.8 kg. In this case, the honey will first have a slight red tint and then become transparent.

Thus, amorpha shrub is light-loving, resistant to drought, heat, dust, gas pollution, soil salinity, and tolerates flooding well. The plants are not only highly decorative, but also have medicinal value and are an excellent honey plant.

## LITERATURE

1. *Amorpha shrub* // <https://www.fatra.su/>
2. Bazhenov, Yu.A. *Decorative trees and shrubs. Illustrated reference book.* / Yu.A. Bazhenov, A.B. Lysikov, A.Yu. Sapelin. - M.: Fiton+, 2012. - 240 p.
3. Bulygin, N.E. *Dendrology: textbook, for university students in the specialty "Forest. and forest park management"* / N.E. Bulygin, V.T. Yarmishko; Moscow state University of Forests. - 3rd ed., revised. - M.: MGUL, 2002. - 528 p.: ill.
4. Dubovitskaya E. A., Vavilova M. E., Lakeeva Y. A., Kurbatskaya A. N., Korovina M.A. *Some biological features of shrubby amorpha in modern conditions. Novgorod // Innovations in landscape architecture. [Text]: Materials of the VIII scientific and practical conference. / Nizhny Novgorod. state architecture -builds. University - N. Novgorod: NNGASU, 2012. - P73-75*