



Article

Importance of Beautiful Catalpa Tree in Urban Landscape Design

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Abstract: This article addresses the pressing issue of enhancing urban living conditions by improving rest areas, sanitary conditions, microclimates, and expanding green spaces. The focus is on the beautiful catalpa tree (*Catalpa speciosa*), a large ornamental species reaching 30 meters in height and notable for its unique crown shape, large heart-shaped leaves, and fragrant flowers blooming in late June or early July. The catalpa's wood is soft, resistant to rot, and ideal for carving. This study highlights the importance of creativity and beautification in urban landscaping, recommending the catalpa for individual or group planting in various urban settings. The research aims to evaluate the bioecological characteristics of *Catalpa* species in Uzbekistan's diverse soil and climate conditions. Findings indicate that incorporating shade-tolerant flowers and shrubs alongside catalpa enhances landscape aesthetics year-round. The study underscores the significance of considering bioecological traits for effective urban greening and landscape design.

Keywords: Beautiful catalpa, landscape design, tree, garden, playground

1. Introduction

Today, there is a lot of talk about the loss of greenery in cities. If you look at our really big cities, you mostly see buildings and asphalt. Cities should have at least as much greenery, parks, gardens, parks as the areas where buildings are located. Otherwise, the ecological balance will be lost, which will make nature angry. An angry nature can "attack" mankind with, for example, drought [1].

Taking into account the growing number of people in the urban area, as well as the expansion of the city center and other settlements, the number of construction objects increasing day by day, and the number of trees decreasing as a result of the expansion of the roads due to the increase in the number of vehicles, in order to improve the atmospheric air in the urban area, green it is desirable to increase the number of squares, public parks and tree groves.

One of the most important tasks of landscaping is human life is to create a healthy and full aesthetic natural environment for It can easily grow in the dry climate conditions of Uzbekistan decorative leaf that develops and takes care of shape from a young age and it will be necessary to grow pineapple tree seedlings. High for that a network of ornamental nurseries with farming culture developed on the basis of expansion and innovative ideas and best practices it is necessary to increase the quantity and quality of seedlings of ornamental trees and shrubs [2,3].

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2. Materials and Methods

The beautiful catalpa (lat. *Catalpa speciosa*) belongs to the first large type of trees, reaching 30 m in height and 1.5 m in diameter. A plant that immediately attracts attention due to the original appearance of the crown shape (Figure 1) [4]. The plant is notable not only for its unique crown shape, but also for its large heart-shaped leaves, and the tree is especially beautiful during the flowering period [5]. It blooms in the second half of June or early July with fragrant flowers consisting of white or cream flowers. The center of these flowers is decorated with dark colored dots (Figure 2). A beautiful catalpa tree grows well in a sunny place. The wood of the beautiful catalpa is soft, does not rot when wet, and is an ideal option for wood carving [6].



Figure 1. A beautiful catalpa tree



Figure 2. Flowers of a beautiful catalpa tree

3. Results and Discussion

According to the biometric measurements conducted in Samarkand, it was found that the beautiful catalpa tree is a large tree with a height of up to 20 meters (some species are 25 meters) and a diameter of up to 0.25 meters [7]. During the phenological studies, it was observed that the trunk of the tree is erect, the branches are pyramidal, the bark of the trunk and branches is reddish-brown, and the neck is cracked. The leaves of the tree are 18-25 cm wide, 20-30 cm long, simple, it is located in one row on the branch and belongs to the type of large-leaved trees [8]. Follow up it was noted that the size of some leaves was very large, the width was 24-30 cm and the length of the band was 25-35 cm. The leaves are wide, large, oval, sometimes elongated, 15-30 cm high, with a sharp tip. The face is pale green, the hairless back is hard and odorless (Figure 3) [9].



Figure 3. Catalpa tree leaf

During the observation, from March 17, the tree leaves began to sprout. From May-June, wonderful buds on the branches. It gives a beautiful view from the moment of flowering. Catalpa is very because it is a beautiful tree, it is widely planted in parks and streets.



Figure 4. Catalpa tree buds

The tree of happiness - catalpa - has been gaining popularity in recent years in garden plots, dachas and city squares. The dramatic crown of the tree harmoniously fills the empty space and provides plenty of shadows. If you decide to grow catalpa in the garden, you should plant it in the center of the clearing. Catalpa, grafted onto a trunk, is an ideal proposal for people who want to plant low perennials around the tree - daylilies, astilbes, hydrangeas. Evergreen ornamental shrubs will also be interesting companions. If the garden is small, you can choose a catalpa on a standard [10]. This tree is not tall, does not take up much space, and tolerates pruning well, so you can always adjust the size of the crown to your liking. Her appearance is misleading to many. It may seem that a bright, luxurious tree requires special growing conditions or careful shaping. In fact, planting and growing catalpa is not difficult, and its rapid growth, disease resistance and frost resistance completely justify the work of gardeners.

4. Conclusion

The study highlights the significant benefits of incorporating the beautiful catalpa tree (*Catalpa speciosa*) into urban landscape design, emphasizing its ornamental value due to its unique crown shape, large heart-shaped leaves, and fragrant flowers. The findings indicate that the catalpa is well-suited for enhancing urban aesthetics when planted individually or in groups, contributing positively to both the environment and the residents' well-being. Moreover, the research underscores the necessity of considering the bioecological characteristics of tree species to ensure their effective integration into various soil-climatic conditions, particularly in Uzbekistan. The study suggests that the inclusion of shade-tolerant flowers and shrubs alongside the catalpa can provide year-round visual appeal. These insights have significant implications for urban planning and landscape architecture, advocating for the strategic use of diverse plant species to create more sustainable and aesthetically pleasing urban environments. Future research should explore the long-term ecological impacts of catalpa trees in different urban settings and further investigate the synergistic effects of combining various ornamental species in landscape compositions.

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