

RESEARCH REGARDING CAPITALIZATION IN TERRARIUMS OF *FICUS BENJAMINA* SPECIES AS BONSAI

CERCETĂRI PRIVIND VALORIFICAREA ÎN TERARII A SPECIEI *FICUS BENJAMINA* SUB FORMĂ DE BONSAI

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Abstract. *The technique of growing plants in the form of bonsai was introduced into Japanese culture about 12 centuries ago by the Chinese, but the terrarium first appeared in 19th century in London, when collectors of rare plants discovered that their transport can be carried out in closed containers.*

*In the current paper, are presented aspects regarding the utilization in terrariums of the species *Ficus benjamina* directed in the form of bonsai. Three types of pots were used for terrariums: a closed pot, an open legless pot, and an open stemmed pot. After research, it was found that *Ficus benjamina* has a great capacity to adapt to the bonsai technique and in terrariums.*

Key words: bonsai, ficus, terrariums

Rezumat. *Tehnica de cultivare a plantelor sub formă de bonsai a fost introdusă în cultura japoneză cu circa 12 secole în urmă, de către chinezi, însă terariul a apărut prima dată în secolul al XIX-lea, în Londra, când colecționarii de plante rare au descoperit că transportarea acestora poate fi realizată în recipiente închise.*

*În această lucrare sunt prezentate aspecte privind valorificarea în terarii a speciei *Ficus benjamina* dirijată sub formă de bonsai. S-au utilizat trei tipuri de vase pentru terarii: vas închis, vas deschis fără picior și vas deschis cu picior. În urma cercetărilor s-a constatat că *Ficus benjamina* are o mare capacitate de adaptare la tehnica bonsai și în terarii.*

Cuvinte cheie: bonsai, ficus, terarii

INTRODUCTION

Wherever we are in the world, we notice that people have an affinity with nature, so they feel the need to translate these things into an art form: painting, poetry, music, sculpture. It is known that the gardens of classical Chinese culture have a special style that stands out for their artistic composition in which they integrate miniature trees, carefully cut, and rocks

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that are found as “penjing”, therefore the art of bonsai reproduces the landscapes in miniature naturally (Prescott, 2015; McClellan, 2016; Ouellet, 2019).

Bonsai is the art of miniaturizing plants, and with the help of which you can create miniature landscapes (Bender, 2014; Iwai, 2014; Pall, 2014; Chan, 2018; Ouellet, 2019; Haruka, 2020).

Terrariums are closed containers, usually made of glass, used for growing plants in a controlled environment. These can range in size from small containers for individual plants, to large pots containing several plants and even small animals such as turtles.

Terrariums first appeared in London in the 19th century, when professional collectors of rare plants discovered that transporting plants could be done in closed containers, thus solving the “*Wardian Case*”. In 1829, Nathaniel Bagshaw (1791–1868), a doctor with a passion for botany and nature, sealed a moth cocoon and some soil in a glass jar, only to discover that a fern had germinated. This proved that in that environment of the jar, the favorable conditions for the plants were formed.

Bonsai in terrarium art is a relatively new and innovative way to combine the traditional art of bonsai with the modern practice of terrarium building. This involves creating a miniature, self-contained ecosystem inside a glass container and incorporating bonsai-led plants as a central element of the design (Oshima and Kimura, 2012).

The concept of bonsai in terrarium art combines the ancient art of bonsai, which requires growing and directing small trees in transparent pots to mimic the appearance of mature trees, which we find at normal sizes in nature. Modern terrarium design practice involves creating a closed, miniature ecosystem inside a glass container. By combining these two art concepts, the terrarium in bonsai art allows for the creation of unique, striking miniature landscapes that visually combine the natural beauty of bonsai with the intimacy of a terrarium.

However, there are different visions of bonsai in terrarium art, and the design and defining elements of each terrarium depend on each artist’s perspective and desired aesthetic. Some terrariums may feature a single bonsai as the main focus, while others may include multiple bonsai with other plants, rocks, and even other decorative components. The diversity of bonsai species and styles plays an important role in the appearance and condition of the terrarium.

There are a variety of terrarium design types, each with a distinct look and creating an engaging environment for plants and small animals (Colletti, 2015).

The aim of the present paper is to highlight the use in terrariums of bonsai obtained from *Ficus benjamina*.

MATERIAL AND METHOD

To carry out the current research, *Ficus benjamina* specimens were used as plant material. The choice of specimens was made taking into account the suitable morphology for creating a terrarium and the formation of bonsai styles.

Plants were purchased from a dendrological nursery, having approximately 2 years old, and grown in intermediate pots. Their transplantation and care took place under protected conditions.

The pots used were specific for bonsai (fig. 1) and for terrariums (fig. 2, fig. 3, fig. 4).



Fig. 1 Pot for bonsai

(<https://www.atelierbonsai.ro/bonsai-shop/ghivece-pentru-bonsai/ghiveci-bonsai-20cm/>)

The choice of pots for the terrariums was made taking into account the size of the plants and aiming to achieve a harmonious balance that corresponds to the characteristics of the species used. In the selection process, consideration was given to the size of the pots to provide enough space for both the roots and aerial parts of the bonsai to develop adequately. Three distinct types of pots were used, namely closed pots with a lid (fig. 2), open stemmed pots (fig. 3) and open legless pots (fig. 4).



Fig. 2 Closed pot
(Original)



Fig. 3 Open stemmed
pot (Original)



Fig. 4 Open legless pot
(<https://maisonduparadis.ro/produs/vas-sticla-cilindru-scurt/>)

The bonsai management of ficus specimens was done with the help of specific tools and utensils.

The substrate used was one specific to bonsai plants, having a porous structure and adequate drainage, ensuring proper air circulation and efficient water absorption.

Also, in some terrariums, marble broken into small fragments was used, with an elegant texture and varied colors, which gives an aesthetic appearance and provides an additional decorative element in the terrarium. Marble chips can help maintain moisture and regulate the level of moisture in the terrarium.

RESULTS AND DISCUSSIONS

It is known that the bonsai technique has been known as art since ancient times, and the objective of the Chinese, who gave life to this concept of miniaturization of elements found in nature, was initially from the desire to restore the sacred connection between nature-divinity-man. Today, bonsai has evolved from its sacred and religious meaning to the point where it is associated with the concept of design (<https://actualmm.ro/bonsai-planta-ce-descatuseaza-bariera-dintre-traditional-si-contemporan/>).

The terrarium is an innovative practice of combining elements of the modern with the traditional art of bonsai. This involves creating a miniature ecosystem inside a glass container and incorporating bonsai-style directed plants as a central element of the design. By combining these two concepts, unique, miniature landscapes are created, and the style in which the bonsai are managed plays an important role in the appearance and condition of the terrarium.

To make the terrariums, the first step was to form the bonsai specimens. After their formation, they were planted in pots specifically for the terrarium.

The closed terrarium was made with *Ficus benjamina* bonsai directed in an informal style, with sinuous stem (fig. 5 - fig. 8).



Fig. 5 Directing the plant by wiring (original)



Fig. 6 Bonsai formation by cuttings (original)



Fig. 7 *Ficus benjamina* as bonsai



Fig. 8 Closed terrarium, with *Ficus benjamina* as bonsai

Also, for the open legless terrarium, a bonsai driven in an informal style with a sinuous stem was used (fig. 9, fig. 10).



Fig. 9 *Ficus benjamina* as bonsai (original)



Fig. 10 Open legless terrarium (original)

The specific design chosen for the terrarium involved the use of rock and forest moss elements to create a natural and authentic atmosphere, thus replicating the traditional bonsai habitat. This approach was selected to maintain an optimal environment, ensuring proper levels of moisture, temperature and lighting for a healthy bonsai development.

A bonsai driven in the style of several stems per root (fig. 11) was used for the open stemmed terrarium (fig. 12).



Fig. 11 Bonsai in style of several stems per root (original)



Fig. 12 Open stemmed terrarium (original)

The design of the terrarium stands out for its opulence and distinctive character, reflecting the meticulous attention paid to every detail. The plant material showed an excellent adaptation to the new environmental conditions.

CONCLUSIONS

Ficus benjamina has a very high degree of adaptability to managing as a bonsai and in the limited space inside the three types of terrariums.

Specimens of *Ficus benjamina* tolerate pruning and wiring very well, and the styles of routing chosen have been successfully integrated into terrarium pots.

The compatibility of the ficus with the terrarium environment is proof of its adaptability and resistance.

The miniature landscapes that creates evoke a sense of wonder and tranquility, encapsulating the beauty of nature in a small space.

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