SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal

A DETAIL REVIEW ON "BEAUTY OF BANYAN BONSAI TREE"

Dr. Swati Rawat[1] , Dr Sunil.S. Jaybhaye[2] , Mr Gitesh.V. Vyas[3], Ms.Bhagyashri.S. Gaikwad[4] , Shubham H. Gavhande[5*]

[1]Principal of Institute of Pharmacy, Badnapur, Jalna.
[2]Vice Principal of Institute of Pharmacy, Badnapur,Jalna
[3]Guide
[4]Co-Guide
[5]Student of Institute of Pharmacy, Badnapur, Jalna

ABSTRACT

The Banyan bonsai (Ficus benghalensis) is a miniature tree known for its iconic aerial roots, thick trunk, and broad leaves. It captures the grandeur of a full-sized Banyan tree in a compact form, symbolizing strength, longevity, and interconnectedness. This bonsai is highly adaptable, thriving in bright, indirect sunlight and requiring consistent moisture and humidity. It offers both aesthetic appeal and health benefits, such as air purification and stress relief. While relatively easy to care for, the Banyan bonsai requires careful management of its roots and leaves. Its cultural significance and resilience make it a popular choice among bonsai enthusiasts. The Banyan bonsai, derived from the *Ficus benghalensis* species, is a popular and striking bonsai tree known for its thick trunk, sprawling branches, and signature aerial roots that grow down from the branches and anchor into the soil. This miniature version of the large Banyan tree represents strength, stability, and longevity, making it a symbol of endurance in bonsai art. With its tropical origins, the Banyan bonsai thrives in warm, humid environments and offers both aesthetic beauty and therapeutic benefits.*

KEYWORDS: *Banyan bonsai, Ficus benghalensis, Miniature tree, Consistent moisture, Humidity.*

1.INTRODUCTION OF BANYAN BONSAI

The Banyan bonsai (Ficus benghalensis), a miniature version of the sprawling Banyan tree, is one of the most iconic and revered trees in the bonsai world. Known for its majestic aerial roots, sturdy trunk, and expansive canopy, the Banyan bonsai captures the essence of a full-grown Banyan tree in a compact, meticulously cultivated form. Originating from tropical regions, primarily India, the Banyan tree holds significant cultural and spiritual value and is deeply associated with longevity, strength, and shelter.

1.2Biological Classification

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Eudicots
- Clade: Rosids
- Order: Rosales
- Family: Moraceae
- Genus: Ficus
- Species: F. Benghalensis

1.3Historical and Cultural Significance

The Banyan tree has been historically significant in several cultures, especially in South Asia. In Hinduism, it is considered sacred and represents immortality and protection. In India, Banyan trees often serve as gathering places for spiritual discussions and community activities, symbolizing wisdom, life, and eternal connection. The transformation of the Banyan tree into bonsai allows enthusiasts to bring this rich symbolism and cultural reverence into their homes.

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal

1.4Aesthetics and Structure

The visual appeal of the Banyan bonsai lies in its striking architecture:Aerial Roots: The most defining feature of a Banyan bonsai, these roots grow down from the branches toward the ground, forming a web-like structure. When properly nurtured, these roots give the bonsai a dramatic, ancient look, emphasizing its natural beauty and intricate design.Sturdy Trunk:

The Banyan bonsai boasts a thick, robust trunk that contributes to its overall sense of stability and strength. The trunk's smooth, grayish bark enhances its elegant appearance.Canopy and Foliage: The foliage of the Banyan bonsai is broad and lush, with glossy green leaves that can be pruned to maintain their size and shape. This dense canopy adds to the tree's impressive and balanced form.

1.5Bonsai Techniques and Adaptability

The Banyan bonsai is particularly adaptable, making it suitable for bonsai cultivation even for beginners. It can be grown both indoors and outdoors, provided it receives the right care:Light and Temperature: As a tropical species, the Banyan bonsai thrives in bright, indirect sunlight. It can tolerate direct sunlight for a few hours but prefers warmer temperatures ranging between 65°F to 75°F (18°C to 24°C). It is sensitive to cold and frost, so indoor cultivation or protection during winter months is necessary.Water and Humidity: Maintaining consistent moisture levels is crucial for Banyan bonsai. The tree thrives in high humidity, so regular misting is recommended, especially if kept indoors. Over-watering or waterlogging should be avoided to prevent root rot.Pruning and Styling: Pruning is essential to control the growth of the leaves and branches, maintaining the tree's desired shape.

The aerial roots require careful management, as they can grow rapidly and overwhelm the tree's structure if not controlled. Techniques like defoliation are used to reduce leaf size and encourage finer branch development.

2.STYLES OF BONSAI

Bonsai trees are cultivated in various styles, each inspired by natural forms and aimed at capturing the essence of a full-sized tree in miniature. These styles emphasize balance, proportion, and aesthetics, showcasing different shapes, orientations, and structures of the tree. Below are some of the most common and classic bonsai styles:

2.1Formal Upright (Chokkan)

Description: This style mimics a tree growing straight and upright with a perfectly vertical trunk. The branches are evenly spaced and taper from the thick base of the trunk to a pointed apex, creating a balanced, pyramid-like form.Characteristics:Straight, upright trunk.Branches become progressively shorter toward the top.Perfectly symmetrical and balanced.

2.2Informal Upright (Moyogi)

Description: In this style, the trunk is still upright but bends or curves as it ascends. The branches and foliage follow the curves, creating a more natural and less formal appearance.Characteristics:Curved or slanted trunk.Branches emerge from the outer curves of the trunk.More natural and less rigid form compared to Chokkan.

2.3Root-Over-Rock Style (Sekijoju):

This style mimics the banyan's natural tendency to grow over rocks in the wild, with roots wrapping around a stone and growing into the soil below. The aerial roots help secure the tree onto the rock, creating a dramatic visual effect.

2.4Multi-Trunk Style (Kabudachi):

This style reflects the banyan's growth habit of producing multiple trunks from a single root system. It can give the appearance of a small forest, with trunks spreading out and interweaving as they grow upward.

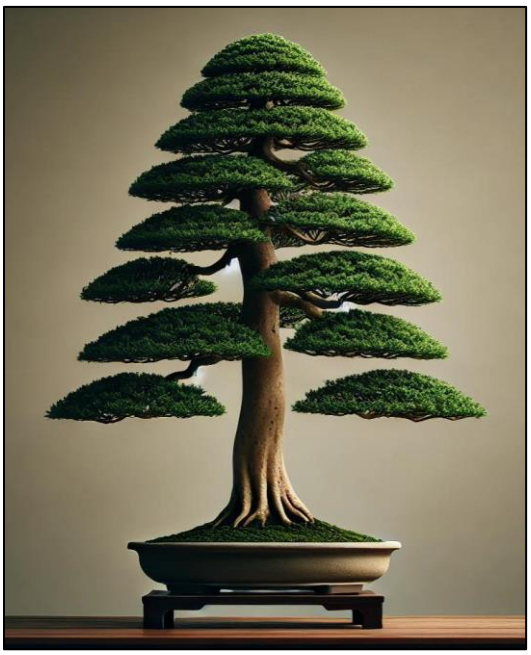
2.5Bonsai Classification

This classification is this on size, as shown in table 1. Each size has its own aesthetic appeal and level of maintenance, with smaller bonsai generally being more demanding due to their precision care requirements.

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal

Table 1: Classification of bonsai based on size

Common name	Size	Dimensions
Miniature Bonsai Trees		
Kenshitsubo	Poppy sized eye	1–3 in
Shito	Fingertip sized	2–4 in
Shohin	Palm Sized	2–6 in
Mame	One handed	5-8 in
Komono	One handed	6-10 in
Medium Sized Bonsai		
Chiu	Two-handed	16–36 in
Chumono	Two-handed	16–36 in
Katade-mochi	One-handed	10–18 in
Large bonsai Trees		
Imperial bonsai	Eight-handed	60–80 in
Omono	Six-handed	40–60 in
Dai	Four-handed	30–48 in
Omono	Four-handed	30–48 in

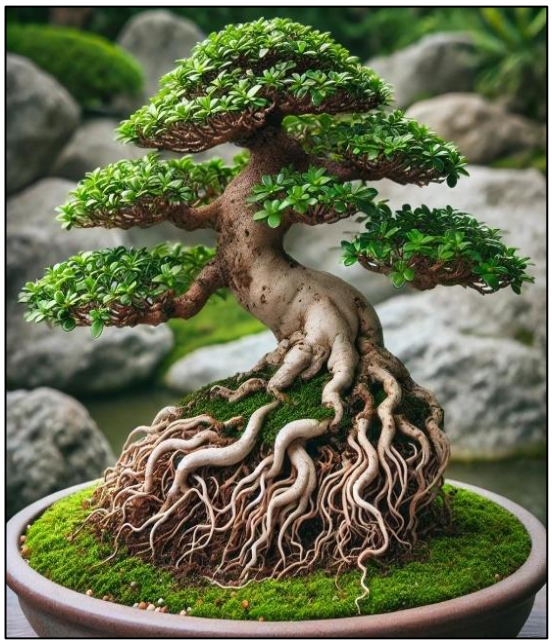


1)Formal Upright



2) Informal Upright

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal



3. Root over the Rock/soil



4. Multi-Trunk

3.GROWING A BANYAN BONSAI

Requires patience and attention to detail, as this tropical tree (Ficus benghalensis) can develop into a striking miniature version of its full-sized counterpart. Here's a detailed guide on how to grow a Banyan bonsai:

3.1Choosing a Banyan Tree for Bonsai

Seedlings or Cuttings: You can start a Banyan bonsai either from seeds or cuttings. Cuttings are often preferred as they root quickly and allow for faster growth.

Young Tree or Pre-Bonsai: You can also purchase a young Banyan tree or pre-bonsai that's already partially developed, which allows you to start shaping the tree right away.

3.2Ideal Growing Conditions

Temperature: Banyan trees are tropical, so they thrive in warm conditions. They prefer temperatures between 65°F to 75°F (18°C to 24°C) but can tolerate slightly higher temperatures. They cannot withstand frost and need to be kept indoors during cold weather.

Humidity: High humidity is ideal for Banyan bonsai, as they are native to humid environments. Mist the leaves regularly to keep the humidity high, especially if you're growing the tree indoors.

Light:Banyan bonsai needs bright, indirect light for at least 4-6 hours a day. It can tolerate partial sunlight, but avoid harsh midday sun, which can scorch the leaves. If growing indoors, place the bonsai near a bright window or use grow lights if necessary.

3.3Planting a Banyan Bonsai

Container Selection:Choose a shallow bonsai pot with drainage holes. The shallow depth helps control the tree's growth, while good drainage prevents waterlogging, which can lead to root rot.

-Soil Mix: A well-draining bonsai soil mix is essential. You can use a mix that includes akadama, pumice, and lava rock or a mixture of peat, sand, and perlite. This ensures proper drainage while still retaining enough moisture for the Banyan's roots.

-Planting Process:If starting from a cutting, plant the cutting in the bonsai pot using the prepared soil mix. Water the soil thoroughly after planting.

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal

3.4 Watering

Regular Watering:The Banyan bonsai prefers moist soil, so water it consistently, allowing the top layer of soil to dry out slightly before watering again. However, don't let the soil completely dry out. Humidity Trays: You can place a humidity tray filled with water beneath the bonsai pot to create a more humid environment, which the tree will appreciate, especially indoors.

3.5 Fertilization

Fertilizer Schedule:Feed your Banyan bonsai with a balanced fertilizer (like a 10-10-10 NPK ratio) during the growing season, which is from spring to early fall. Fertilize every two weeks during this time.

Winter Feeding: In the winter, reduce feeding to once a month or stop altogether, as the tree's growth slows down in cooler conditions.

3.6Pruning and Shaping

Pruning Branches: Regular pruning helps maintain the size and shape of the bonsai. Remove any overly long branches, and trim back new growth to encourage denser foliage. Prune to create a balance between the tree's canopy and its root system.

Leaf Pruning (Defoliation): You can practice defoliation, removing some leaves to encourage smaller leaves and finer branch development. This is usually done in summer and helps maintain the tree's miniature scale.

Shaping with Wiring: Wiring can be used to shape the branches and trunk. Banyan bonsai has flexible branches when young, making it easy to shape. Be careful when applying wire, and check it regularly to avoid damaging the bark as the tree grows.

3.7 Aerial Roots

Encouraging Aerial Roots: One of the Banyan bonsai's most distinctive features is its aerial roots, which grow from the branches and descend to the soil. To encourage the growth of aerial roots, increase humidity by misting the branches frequently or using a plastic covering to retain moisture.

Managing Aerial Roots: As the roots grow, they can be directed to the soil or trimmed if they become too numerous. Aerial roots add to the ancient and dramatic appearance of the Banyan bonsai.

3.8 Repotting

-When to Repot: Repot the Banyan bonsai every 2-3 years to refresh the soil and prevent rootbound conditions. Spring is the best time to repot, just before the growing season begins.

How to Repot: When repotting, trim back about one-third of the roots. Use fresh bonsai soil to promote healthy root growth. After repotting, water thoroughly and keep the tree in a shaded area for a week or two to recover.

3.9Propagation

From Cuttings: Banyan trees are easy to propagate from cuttings. Take a cutting from a healthy branch, about 4-6 inches long. Remove the lower leaves and plant the cutting in moist soil. Keep it in a warm, humid environment until it develops roots.

From Seeds: You can also grow a Banyan bonsai from seeds, but this takes more time. Sow seeds in well-draining soil and keep them moist. Germination can take a few weeks, after which the seedlings can be transferred to individual pots for development.

3.10Pest and Disease Management

Pest Prevention:Banyan bonsai can attract pests like aphids, spider mites, and mealybugs. Regularly inspect the leaves and branches. Treat infestations with neem oil, horticultural soap, or insecticidal sprays.

Disease Prevention: Overwatering can lead to root rot, a common issue with Banyan bonsai. Make sure the soil drains well, and avoid letting the tree sit in standing water. Fungal infections like leaf spot can also occur in high-humidity environments, so ensure proper air circulation and treat with fungicides if needed.

3.11Winter Care

Indoor Care: In colder regions, bring the Banyan bonsai indoors during winter. Keep it in a warm room with plenty of light and maintain humidity with regular misting or using a humidifier.

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal

Reducing Water and Fertilizer: During winter, the tree's growth slows down, so reduce watering slightly and stop fertilizing until spring.

4.Classification of Banyan Bonsai

The classification of Banyan bonsai based on size aligns with standard bonsai size categories. These classifications are universal across bonsai species and depend on the tree's height and the number of hands needed to move it. Below are the size categories relevant to Banyan bonsai:

1.Mame (Miniature Bonsai)
Size: Up to 15 cm (6 inches) in height.
Description: Small and delicate, often displayed on tables or shelves. Requires intricate care and pruning due to its small size.
Handling: Can be lifted with two fingers.

2. Shohin
Size: 15–25 cm (6–10 inches) in height.
Description: Small but slightly larger than Mame, easier to care for while retaining portability.
Handling: Easily lifted with one hand.

3. Chuhin (Medium Bonsai)
Size: 25–60 cm (10–24 inches) in height.
Description: Most common size for Banyan bonsai, offering a good balance between manageability and visual impact.
Handling: Typically lifted with two hands.

4. Omono/Dai (Large Bonsai)
Size: 60–120 cm (24–48 inches) in height.
Description: Larger Banyan bonsai with an impressive presence, ideal for spacious displays.
Handling: Requires two to four hands to move.

5. Hachi-Uye (Extra-Large Bonsai)
Size: Over 120 cm (48 inches) in height.
Description: Rare for Banyan bonsai but possible for exhibition pieces. Mimics the grandeur of a natural Banyan tree on a reduced scale.
Handling: Needs multiple people or special equipment to move.
This size-based classification helps enthusiasts choose a bonsai size that suits their display preferences and maintenance capabilities.

5.Tool's use for Banyan bonsai

Maintaining and styling a banyan bonsai requires a variety of specialized tools to ensure proper care and aesthetic shaping. Here's a guide to the most essential tools and their uses:

- **Basic Tools**

1. Pruning Shears or Scissors
Used for trimming branches, leaves, and roots.
Essential for maintaining the canopy shape and encouraging healthy growth.
2. Concave Cutters
Ideal for cutting branches close to the trunk, leaving a clean wound that heals seamlessly.
3. Root Cutters:
Specialized for trimming thick roots during repotting without damaging the root system.

- **Shaping Tools**

1. Bonsai Wire (Aluminum or Copper)
Used to shape branches and guide their growth direction.
Soft aluminum is preferred for beginners, while copper provides stronger support for mature branches.
2. Wire Cutters
Designed to cut bonsai wire without damaging branches or bark.

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal

3. Branch Benders
Useful for reshaping thicker branches that are too rigid for wire alone.

- **Repotting Tools**

1.Root Rake or Hook
Helps untangle and comb out roots during repotting for better soil aeration and space.

2.Soil Scoop
Assists in adding or removing soil neatly during repotting.

3.Mesh Screens
Placed at the bottom of the pot to prevent soil loss while ensuring proper drainage.

4.Chopsticks
Used to work soil around the roots and eliminate air pockets.

- **Aerial Root Management**

1.Misting Bottle
Keeps humidity high, encouraging the development of aerial roots.

2.Tweezers
Helps clean up moss, dead leaves, or debris around the roots and trunk.

- General Maintenance Tools

1.Watering Can with Fine Spout:
Provides a gentle, even watering without disturbing the soil or aerial roots.
2.Spray Bottle:
Keeps the foliage clean and enhances humidity levels around the bonsai.
3.Cleaning Brushes:
Used to clean the trunk and roots, enhancing the tree's natural texture and appearance.

- **Optional but Useful**

1.Turntable
Makes styling and repotting easier by allowing 360° access to the bonsai.
2.Knob Cutters
Ideal for removing large or knobby growths from the trunk or branches.
Using these tools ensures precise care and allows you to style your banyan bonsai beautifully while promoting its long-term health.

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal



Tools used for Banyan Bonsai

REFERENCES

1. *Bonsai Primer – Banyan Bonsai Tree Care.*
2. *Iwasha R. Bonsai in Ukyoke. In: Encyclopaedia of Bonsai. Vol 1: Dohosha Publishing Co., Kyoto, 1989; 132-144*
3. *Joshi AR, Joshi K. Bonsai: a technique for conservation of species. Bonsai and Conservation, 2009; 1:3-4.*
4. *Joshi U, Mewar D, Negi R, Dhyani A. Bonsai: their forms and planting Techniques. Times of Agriculture. 2020; 5:49*
5. *Authentic Bonsai Delhi – How to Care for Banyan Bonsai.*
6. *Bonsai Made Easy – Banyan Bonsai Guide.*
7. *"The Complete Book of Bonsai" by Harry Tomlinson*
8. *Urban Garden Haven – Banyan Bonsai Care.*
9. *Bonsai Made Easy – Ficus Bonsai Overview.*
10. *Modern Bonsai Practice: 501 Principles of Good Bonsai Horticulture" by Larry Morton*
11. *Kaplan R, Kaplan S. The Experience of Nature: A Psychological Perspective; Cambridge University Press: Cambridge, UK. 1989; 368p*
12. *Kimura, A. K. The Ancient Art of Bonsai. 2nd edition, Wiley publishing Inc., Indianapolls Indiana, 2007; 120p.*
13. *Koreshoff DR. Bonsai: Its Art, Science, History and Philosophy. Boolarong Publications, Brisbane, Australia, 1984: 255p.*
14. *Kumar P, Dwivedi P. Bonsai: symbol of culture, ideals, money and beauty. International Journal of Agriculture Environment and Biotechnology. 2011; 4:115-118.*
15. *Kuykendall L., Tay L, Ng V. Leisure engagement and subjective wellbeing: analysis. Psychological Bulletin. 2015: 141:364-403.*
16. *Lesniewicz P. Bonsai in Your Home. Sterling Publishing Company. 1996.*
17. *Pessey C. Samson R. Bonsai Basics: A Step-by-Step Guide to Growing. Training & General Care. Sterling Publishing Inc, New York. 2014; 120p.*

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 11 | November 2024 - Peer Reviewed Journal

18. *Pietraszko K, Sobota J. Bonsai as reflection of nature's beauty: styles and aesthetic value. WSEAS Transactions on Environment and Development. 2008; 7:588-605.*
19. *Pretty J. Peacock J. Hine R. Green exercise: The benefits of activities in green places. Biologist. 2006; 53(3):143-148.*
20. *Relf D. The Art of Bonsai. Produced by Communications and Marketing. College of Agriculture and Life Sciences, Virginia Polytechnic Institute and State University. 2009; 426-431.*
21. *Sasi S. Bonsai – A Review. International Journal of Plant Biotechnology. 2017: 3:17-21.*