

> The diversity of horticulture in Japan – bonsai

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Bonsai, as suggested by the characters ‘bon’ (shallow pot) and ‘sai’ (to cultivate), is a unique and traditional Japanese horticultural practice that expresses natural landscapes and beauty within the confines of a small container. Its appeal lies in the expressive power created by the harmony of the tree, pot, soil and arrangement. The sight of a tree that has lived for decades or even centuries in a space merely tens of centimeters wide allows the viewer to feel the grandeur of nature and the passage of time.

Cultivating bonsai involves an extensive amount of time, communicating with nature and tending to the tree daily through watering and pruning, gradually guiding it towards an ideal shape. Bonsai is said to teach the value of “patience,” which today is often lost in busy modern society. Furthermore, it contributes to spiritual healing and improved concentration.

Bonsai strongly reflects traditional Japanese aesthetics such as ‘wabi-sabi’. Wabi-sabi is a Japanese philosophy that finds beauty in imperfection, impermanence and simplicity. Wabi-sabi emphasizes the acceptance of transience and the appreciation of natural objects, and how they are molded by the forces of nature. Beauty is found not in perfect symmetry or splendor, but rather in nature’s irregularities and the appearance of having withstood decades of wind and snow. However, domestically in Japan, the industry is facing challenges such as a decline in the bonsai-loving population, a shortage of successors, and aging customers. In contrast, overseas, the popularity of bonsai is surging, especially among younger generations. This paper examines the history of bonsai, its aesthetics and techniques, the current situation and challenges in Japan, and the spread and future potential of bonsai culture globally.

Origin and development

The origin of bonsai can be traced back to “penjing,” an art form born in ancient China around the 3rd century BC. This was an art form that sought to recreate natural scenes by arranging stones, gravel, plants and trees in a tray, with “penzai” (tray mountains). This penjing culture was introduced to Japan

during the Heian period (794-1185) by Japanese envoys returning from China.

After arriving in Japan, bonsai underwent a unique development. During the Heian period, it was referred to as “Hachi no Ki” (potted trees) or “Hachiue” (potted plants), and ornate, extravagant pieces were enjoyed by the nobility. With the spread of Zen Buddhism from the Kamakura to Muromachi periods (12th to 16th centuries), the Zen philosophy of “eliminating the unnecessary and focusing on the essence” was applied to bonsai, emphasizing the expression of the tree’s inherent beauty and natural form. In the Muromachi period, alongside arts such as the tea ceremony (chado) and Noh theater, it was refined as an art form embodying the aesthetics of wabi-sabi.

During the Edo period (1603-1868), it spread to the common people, and unique bonsai cultures developed across various regions of Japan, with many related books being published. Even after the modernization of the Meiji era and beyond, bonsai attracted international attention. During the Taisho era (1912-1926), bonsai exhibitions were held worldwide in places like Paris and New York, and its beauty and techniques gained widespread recognition. In the post-war Showa era (1926-1989), it became a common hobby in Japan and was frequently introduced at international events showcasing Japanese culture. In the Heisei (1989-2019) and Reiwa (2019-present) eras, bonsai techniques and designs have further evolved, creating diverse styles. The emergence and evolution of the internet has facilitated the easy sharing of information and techniques globally.

Historical transitions of bonsai

Although bonsai originated in China, it underwent unique development in Japan during the Edo period. During this time, styles such as “Tako-zukuri” (Octopus style) and “Bonzan” (Tray mountain) became popular. Modern bonsai emerged toward the end of the Edo period, influenced by the Chinese taste for sencha (steeped green tea). In the Meiji era, it spread as a hobby among politicians and business figures.

However, in the latter half of the Meiji period, a reevaluation of traditional culture advanced alongside rising national consciousness, and bonsai became part of this process. By incorporating elements of the tea ceremony and ikebana (flower arrangement), bonsai adopted the guise of a traditional culture. In this period, the concept of “kokufūka” (nationalization) was advocated, asserting that “bonsai was a unique art that expressed natural beauty rooted in the Japanese climate”.

A large-scale bonsai boom occurred in the early Showa period and many people became bonsai enthusiasts. By this time, the artistry of bonsai had been widely recognized. However, the challenging conditions at the end of World War II and the post-war turmoil led to a stagnation period of about 10 years. The main factor cited for this stagnation was the difficulty in maintaining large bonsai.

The bonsai hobby began to flourish again around 1955 (Showa 30). During this resurgence, the “miniaturization” of bonsai (Mame, Komono and Shohin bonsai) progressed. This is thought to have arisen because of generational shifts, space issues in residential environments, and changes in production volume, resulting from propagation methods like seeding, cutting, layering and grafting. Smaller bonsai were preferred as “a size that could be created in one generation”.

The core of aesthetics

The aesthetics of bonsai are based on unique Japanese sensibilities such as wabi-sabi, harmony with nature, condensation of time, and spatial composition. For instance, in seeing a pine tree over a hundred years old in a pot, the passage of time is condensed, evoking within the viewer a deep emotion. Furthermore, the “margin” (yohaku) and “space” (ma) within the pot stimulate the viewer’s imagination, creating a worldview that extends into silence. Bonsai possesses not only deep aesthetics that go beyond mere plant cultivation, but also the advanced techniques to realize them (Figure 1; Table 1).

Important concepts cherished in bonsai include “expressing the tree’s vitality,” “the beauty of subtraction, eliminating the unne-

■ Table 1. Evaluation criteria and aesthetic value of bonsai in Japan.

Evaluation item	Content	Notes
Tree age	Bonsai nurtured over long periods hold higher value	Pines over 100 years old are rare
Tree shape	Fusion of natural and artistic beauty. Symmetry and branch flow are emphasized	“Right-angled branches” and “well-balanced curvature” are ideal forms
Labor/skill	Embodies the skill and time of the artisan in pruning, repotting and pot selection	The history of cultivation and meticulous management are also evaluated
Pot/container	The quality, history and craftsmanship of the pot influence the bonsai’s value	Shigaraki ware and <i>Kowatari</i> (old imported) pots are highly valued
Variety rarity	Some varieties are difficult to cultivate, increasing rarity and value	However, “rare” does not necessarily mean “expensive”

essary,” “the passage of time enriching the expression,” “an incomplete art,” and “prioritizing overall harmony”. These concepts embody traditional Japanese spiritual principles related to “nature worship,” “Zen,” and “wabi-sabi”. As bonsai culture gains attention globally, this spirituality is emphasized in addition to its artistry.

Fusion of technique and art

Techniques such as pruning, wiring and watering are indispensable in the creation of bonsai. These techniques are integral in “making a work of art,” not just simple cultivation. Bonsai is also referred to as a “living sculpture”, for it is an art piece that changes over time. For example, the technique of adjusting branch direction with wire to create a tree shape mimicking a natural landscape is an advanced skill based on the artisan’s aesthetic sense and experience. Conversely, if the technique is too obvious, the evaluation can drop because the “intentionality” is too strong. Therefore, the ideal is to follow the principle of “intention without intentionality”, finishing the branch arrangement naturally without leaving traces of the wire. Highly skilled artisans possess the ability to achieve the ideal form through pruning and nurturing alone, often without relying on wire.

Tree species and types

Bonsai are classified by tree species, by style and by size. By tree species, the representative types are:

- Shōhaku (pine and conifer) bonsai. This refers to conifers like pine, cedar, cypress (*Hinoki*) and *shinpaku* (Chinese juniper). They are evergreens that can be enjoyed year-round and are robust, making them ideal for beginners.
- Black Pine (*Kuromatsu*) is prized for its strong needles and rough trunk bark;



■ Figure 1. A masterpiece Black Pine representing Takamatsu bonsai.

- Five-Needle Pine (*Goyomatsu*) is a hardy species resistant to severe cold and is recommended to beginners due to relatively easy maintenance;
- The appeal of Chinese juniper (*Shinpaku*) lies in the artistry woven by the white, deadwood parts called *shari* (dead wood sections) and *jin* (dead branches).
- Zōki (deciduous and broadleaf) bonsai. This type uses deciduous and broadleaf trees like maple (*Momiji*), zelkova (*Keyaki*) and beech (*Buna*). These allow enjoyment of seasonal changes: spring new growth, summer deep green, autumn foliage and winter branch structure.
- Flower bonsai (*Hanamono*) includes species like plum (*Ume*), cherry (*Sakura*), wisteria (*Fuji*) and azalea (*Tsutsuji*). These are appreciated for their beautiful flowers and fragrance.
- Fruit bonsai (*Miminono*) includes species like persimmon (*Kaki*), apple (*Ringo*) and pomegranate (*Zakuro*), which are enjoyed for the bearing of fruit and savoring the

process of transformation from flower to fruit.

Bonsai shapes are diverse, inspired by and expressing the forms of trees in nature (Figure 2).

- Chokkan (formal upright): the trunk grows straight upwards;
- Moyogi (informal upright): the trunk rises with a gentle curve;
- Kengai (cascading): the trunk droops below the rim of the pot, imitating a tree growing on a sheer cliff;
- Shakan (slanting): the tree leans over from the starting position;
- Kabudachi (clump style): several trunks rise as a clump from the ground level, appearing like independent trees;
- Yose-ue (group planting): a style where multiple tree species or grasses are planted in one pot, expressing a forest or grove scene;
- Bunjingi (literati style): this is characterized by a slender trunk, few lower branches and tall stature, exuding an elegant and refined atmosphere.

Bonsai may also be classified by the height from the rim of the pot to the top of the tree.

- Daihin (large bonsai): 50-60 cm or more;
- Chūhin (medium bonsai): 20 to 50-60 cm;
- Shohin (small bonsai): 20 cm or less;
- Mini bonsai: 10 cm or less;
- Petit bonsai: 5 cm or less;
- Mame (micro bonsai): 3-4 cm or less.

Medium to mini sizes are recommended for beginners.

Major bonsai producing regions in Japan and their characteristics

Major bonsai producing regions in Japan include Kagawa, Aichi, Chiba and Tochigi Prefectures, with Kagawa Prefecture’s Takamatsu City and Saitama Prefecture’s Omiya Bonsai Village being the most well-known and recognized areas.



■ Figure 2. Tree shape styles in bonsai.

Takamatsu City, Kagawa Prefecture

The Kinashi and Kokubunji areas of Takamatsu City, Kagawa Prefecture, are known to global bonsai enthusiasts as sacred ground and are Japan's top producers of pine bonsai (Figure 3). Approximately 80% of the pine bonsai produced domestically in Japan come from Takamatsu City.

The history of Takamatsu bonsai dates back about 200 years to the Edo period when pines naturally growing in the fields and mountains were repotted and sold as souvenirs for visitors to Kotohira-gū Shrine.

Takamatsu is suitable for pine cultivation due to the mild climate of the Seto Inland Sea, characterized by warmth, low rainfall and small temperature differences between summer and winter, and the well-drained granite soil. Furthermore, the stable production of high-quality pine bonsai has been made possible by a unique cultivation method starting from seedlings and the meticulous refinement of grafting and pruning techniques by skilled artisans and producers. The three major varieties of Takamatsu bonsai are Black Pine, Five-Needle Pine and Nishikimatsu (Brocade Pine), the latter of which originated in Takamatsu.

To broaden the base of bonsai enthusiasts and promote its appeal both domestically and internationally, Takamatsu City opened the "Takamatsu Bonsai no Sato" in April 2020. This facility exhibits and sells 10,000 bonsai from about 60 bonsai gardens in the Kinashi and Kokubunji areas. Beginners can receive

advice on selecting and cultivating bonsai from experts, and moss ball making experiences are also available.

Amid rising international interest in bonsai, the export of Takamatsu bonsai is thriving. The "Asia Pacific Bonsai and Suiseki Convention (ASPAC)" held in Takamatsu City in 2011 saw 76,000 visitors from about 30 countries/regions in attendance. The Takamatsu Bonsai Export Promotion Association was established in 2013 to expand exports through direct transactions with overseas buyers. The lifting of restrictions on Black Pine exports to EU member states in October 2020 is expected to further boost exports.

Locally, efforts are being made to promote bonsai as a rooted regional culture through activities such as teaching bonsai to local elementary school students and hosting related events. Experience programs combining bonsai with traditional Japanese culture, such as "The First Bonsai Experience" developed by the Takamatsu Chamber of Commerce and Industry, are also offered.

Saitama City, Saitama Prefecture

The Omiya Bonsai Village in Saitama City, Saitama Prefecture, is also known as sacred ground for bonsai, attracting enthusiasts from all around the world. The Omiya Bonsai Art Museum displays about 120 bonsai, including many famous works.

Previously, many of the horticulturists who created gardens for the Edo period daimyo residences lived around Dangozaka in Tokyo

(Sendagi, Bunkyo Ward), and specialized bonsai artisans emerged there after the Meiji era. However, after the Great Kanto Earthquake in 1923 which devastated Tokyo, many of the bonsai growers suffered significant damage and they moved away to re-establish themselves in Saitama City. The Omiya Bonsai Village was born in 1925 as their self-governing community. At its peak around 1935, there were about 30 bonsai gardens.

Bonsai production volume

Japan is a major producer of bonsai, but there are no official statistics detailing the types and quantities produced. A 2015 survey conducted by the Ministry of Agriculture, Forestry and Fisheries (MAFF), with the cooperation of industry stakeholders, targeted 473 bonsai gardens nationwide. The results of this survey provide a snapshot of domestic production.

At that time, around 111,000 bonsai pots were produced, which were worth some JPY 800 million. Exports amounted to 44,000 pots, generating sales worth JPY 400 million.

Kagawa Prefecture, a major pine bonsai production area, publishes trends in bonsai cultivation area and shipment volume. In 2023, the cultivation area was 11.4 ha, with approximately 60,000 pots produced and sales of JPY 200 million, primarily from Takamatsu City.

Bonsai producing regions are seeing a rapid weakening of their industrial base due to long-term price stagnation. Concerns also include a shortage of successors and a lack of bonsai seedlings. Consequently, bonsai production in the future is unlikely to increase.

Growing international popularity of bonsai

Bonsai is now a global term, with the number of enthusiasts rapidly increasing in Europe, America, Asia and Oceania. The "World Bonsai Convention" (WBC), which began in 1989, has been held in many countries, including Japan, the US, South Korea and Germany.



■ Figure 3. A) Bonsai under cultivation, B) Bonsai Garden Exhibition and Sales Event at Takamatsu-city.

This event serves as a platform for bonsai enthusiasts worldwide to gather and share techniques and aesthetics.

The spread of bonsai overseas was largely driven by its introduction at world exhibitions from the late 19th to early 20th centuries and was popularized by soldiers returning home after being stationed in Japan after World War II. In the United States, the number of bonsai enthusiasts is estimated to be in the hundreds of thousands. Numerous bonsai clubs and associations (such as the American Bonsai Society and state clubs) exist across the US, hosting active bonsai-related events and exhibitions. Europe also exhibits strong interest, with hundreds of thousands of enthusiasts in Germany, France, Italy, the UK and Spain. These countries have active bonsai clubs and associations (like the European Bonsai Association and individual national associations), with bonsai and related materials sold in specialized stores, garden centers and online shops. In China, Taiwan and Southeast Asia, demand for high-end bonsai and penjing has expanded in recent years, centered on affluent individuals and collectors. Exhibitions and auctions are flourishing, with some pieces being sold for several million yen.

Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF) has formulated the "Basic Policy for the Promotion of the Flower Industry" (which includes ornamental plants like bonsai) and is actively promoting exports. Based on the "Action Plan for Expanding Exports of Agricultural, Forestry, Fishery Products and Foods," MAFF is supporting the development of overseas markets and branding for bonsai. To streamline quarantine and export procedures for bonsai, efforts are being made to strengthen the quarantine system and develop manuals to meet the quarantine requirements of destination countries (e.g., root washing, soil removal). Additionally, export consultation desks have

been established to provide advice on procedures and market information to producers wishing to export.

Support for overseas market development is also provided by the Ministry of Economy, Trade and Industry, and JETRO (the Japan External Trade Organization), including the organization of business matching events with local buyers. Local governments also support the export of bonsai. Takamatsu City (in Kagawa Prefecture) and Saitama City (in Saitama Prefecture) are both conducting overseas promotions, such as holding bonsai exhibitions and fairs abroad, and inviting local buyers.

Following efforts by Kagawa Prefecture, Takamatsu City and JETRO that led to the lifting of export restrictions on Black Pine bonsai to the EU (in the fiscal year 2020), further efforts are underway. For example, in 2024, the prefectural governor and the mayor of Takamatsu submitted a request to MAFF regarding the lifting of export restrictions to the US.

Potential for bonsai culture succession and promotion

Bonsai is a traditional Japanese artform that receives high acclaim both domestically and internationally. However, in Japan, the aging of producers, the shortage of successors, and the decline in the horticultural population are major challenges. Conversely, overseas demand is expanding due to heightened interest in Japanese culture and the bonsai boom.

Various initiatives are being undertaken in different producing regions to connect bonsai culture and its production base to the next generation. The following are examples from Takamatsu City, Kagawa Prefecture:

The Takamatsu Bonsai Training "Bonsai no Takumi" (Bonsai Master) started in January 2020 to promote bonsai techniques and to foster successors (Figure 4). It is a training

program where participants can learn techniques directly from bonsai artisans in the historic production area of Takamatsu City. The training focuses on fundamental bonsai care and flexible instruction tailored to the skill level of the trainees, using Shōhaku (pine and conifer) species characteristic of Takamatsu bonsai (Black Pine, Nishikimatsu, Shinpaku and Five-Needle Pine). It serves as a place for advanced and intermediate bonsai enthusiasts to improve their skills, and for young professionals engaged in bonsai as a career to hone their craft. Beginners who have just started growing bonsai are also welcome. Furthermore, due to the increase in bonsai exports and the rising popularity of bonsai overseas, international enthusiasts and instructors have frequently visited bonsai gardens in Takamatsu City for technical training. A feature of "Bonsai no Takumi" is the inclusion of accommodation facilities, allowing domestic and international trainees to stay for short to long periods to learn bonsai techniques.

The Bonsai☆Girls Project is an initiative formed by female students of Kagawa University, with the aim of preserving the history of Takamatsu bonsai and promoting awareness. The project was launched in 2012 by economics students studying regional revitalization. Its activities aim to broaden the base of enthusiasts by emphasizing the accessibility for female students and communicating the charm they perceive as "cute" and "stylish". Members gain knowledge of cultivation and management at bonsai gardens in the Kinashi area of Takamatsu City, a major pine bonsai production region. Their activities primarily target young people and women, including hosting workshops for elementary through high school students, creating free papers and disseminating information via social media.

The Regional Circle "Bonsai Club Caming" was established in 2025 by a female third-



■ Figure 4. A) "Bonsai no Takumi" (Bonsai Master), B) training facility at Takamatsu-city Kokubunji-district. <https://takamatsubonsai-takumi.com/>

year high school student from Kinashi-chō, Takamatsu City. With a strong commitment to local bonsai culture, the club aims to pass on and popularize the traditional culture of bonsai among the younger generation. Operating as a “regional circle” open to all Takamatsu citizens, with cooperation from organizations like JA Kagawa, members engage in authentic skill acquisition and artwork creation in collaboration with local bonsai producing areas and artisans (takumi). They organize bonsai events for youth, disseminate information via SMS and conduct PR activities to promote the local bonsai charm nationwide. These initiatives are highly regarded as a practical approach to addressing the challenges of declining youth interest and market shrinkage.

Elementary schools in the Kinashi and Kokubunji areas of Takamatsu City host “Bonsai Experience Classes,” where children experience basic techniques like pruning and repotting with local bonsai artisans serving as instructors (Figure 5). This initiative has been introduced as an educational program using bonsai as a subject, integrated into comprehensive learning about local nature and culture. The goal is for children to foster an understanding of plants and an attachment to their local community by growing bonsai themselves. Furthermore, by creating a place for cultural succession that integrates the school and the community through public classes and exhibitions open to parents and local residents, the initiative aims to strengthen community ties. This is connected not only to the transmission of techniques, but also to the formation of regional identity and sustainable cultural education.

Bonsai is a traditional artform with intangible cultural heritage value. As its popularity grows internationally, it is essential for Japan to recognize its value and sustain its inheritance. Efforts are being made by national and local governments, the private sector and others through multifaceted approaches – including regional industrial promotion, educational collaboration, acceptance of trainees and dissemination of bonsai culture information – to ensure bonsai culture is passed onto the next generation.

Future research topics include international comparisons of bonsai culture, technical characteristics specific to each production area, and a quantitative analysis of educational effects. Academic consideration based on these points is expected to contribute to the sustainable development of bonsai culture.

Bonsai is not merely horticulture: it is a cultural asset that embodies the Japanese view of nature and spirituality. ●



■ Figure 5. Children’s Bonsai Exhibition (Takamatsu Municipal Kinashi Elementary School).

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