Original Research Article

# Olfactory landscape planning strategies for the application of traditional incense medicinal plants in modern healing gardens

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***Abstract:*** This paper examines the use of traditional incense medicinal plants in modern healing garden olfactory landscape planning through PEST analysis. It suggests planning strategies by considering political, economic, social, and technological aspects related to these plants and gardens. The goal is to preserve traditional plant culture and address the growing need for health and wellness, offering theoretical and practical guidance for the development of healing gardens.

***Keywords:*** Traditional incense medicinal plants; Modern healing gardens; Olfactory landscape; Pest analysis; Planning strategies

## 1. Introduction

Public awareness of physical and mental health has increased, with healing gardens and olfactory landscapes receiving greater attention. Traditional aromatic medicinal plants are being utilized in modern healing gardens for their fragrance and health benefits to create beneficial olfactory experiences.

PEST analysis is employed to examine the external environment and has been applied to research on traditional aromatic medicinal plants. This method aids in understanding influencing factors and formulating scientific strategies for olfactory landscape planning.

## 2. PEST analysis of traditional incense medicinal plants in modern healing gardens

### 2.1. Political (P)

In recent years, governments around the world have been increasingly emphasizing environmental protection, cultural heritage, and public health. In China, there are a series of policies and regulations that support the development of traditional Chinese medicine and the construction of ecological gardens. For example, the government encourages the cultivation and utilization of traditional medicinal plants, which provides a favorable policy environment for the application of traditional incense medicinal plants in modern healing gardens.

Urban greening and healthy city construction policies have promoted the development of healing gardens. Local governments provide funding for public green space construction and require these spaces to meet specific ecological and health standards. These policies provide a legal basis for the establishment of healing gardens and support the cultivation of traditional aromatic medicinal plants.

### 2.2. Economic (E)

From an economic perspective, the application of traditional incense medicinal plants in modern healing gardens has both costs and benefits. On the cost side, the cultivation of traditional incense medicinal plants may require specific soil, climate, and cultivation techniques, which may increase the initial investment. For example, some rare incense medicinal plants need a long - term cultivation process and professional management,

and the cost of seedlings, fertilizers, and pest control is relatively high.

Healing gardens generate revenue by attracting visitors and patients through ticket sales, tourism, and medical services. The unique fragrances of traditional aromatic medicinal plants and the development of related industries such as essential oils, herbal products, and handicrafts enhance the garden's appeal and economic value while creating employment opportunities.

### 2.3. Social (S)

In modern society, people's awareness of health and well-being continues to grow. The fast-paced lifestyle and high-pressure work environments have led to increasing physical and mental health issues among individuals. As spaces that can alleviate stress, improve mood, and promote physical and mental well-being, therapeutic gardens are gaining greater public favor.

Aromatic medicinal herbs have a long history in Chinese culture and are associated with tranquility, relaxation, and health. Integrated into modern therapeutic gardens, they address the needs of physical and mental well-being while evoking cultural identity and emotional resonance. For example, the fragrance of sandalwood is believed to have calming and soothing effects, aiding in alleviating anxiety and tension.

### 2.4. Technological (T)

Technological advancements have provided strong support for the application of traditional aromatic medicinal plants in modern therapeutic gardens. In terms of plant cultivation techniques, new technologies such as tissue culture, greenhouse cultivation, and precision irrigation are widely adopted. These technologies can improve the survival rate and quality of traditional aromatic medicinal plants, overcoming the limitations of natural growing conditions.

In the field of olfactory research, modern technologies such as gas chromatography-mass spectrometry (GC-MS) and electronic nose technology can accurately analyze the chemical composition and odor characteristics of aromatic medicinal plants. This helps designers better understand the olfactory effects of plants and scientifically combine them in olfactory landscape planning.

Furthermore, digital technologies such as virtual reality (VR) and augmented reality (AR) can be used to pre-simulate and display the olfactory landscapes of therapeutic gardens. This not only assists designers in optimizing design plans but also allows the public to preliminarily experience the therapeutic garden environment, offering a more intuitive and immersive experience.

## 3. Olfactory landscape planning strategies for traditional incense medicinal plants in modern healing gardens

### 3.1. Policy - Compliant and sustainable planning

In the planning process, it is necessary to fully comply with relevant policies and regulations. For the selection of traditional incense medicinal plants, ensure that they are not endangered species and meet the requirements of phytosanitary regulations. At the same time, formulate sustainable cultivation and management plans to avoid over - exploitation and damage to the ecological environment.

### 3.2. Economic - Benefit - Oriented plant configuration

Based on the analysis of economic benefits, rationally configure traditional incense medicinal plants. Select plants with high economic value and strong adaptability, and combine them with other common garden plants to create a rich and diverse olfactory landscape. For example, plants such as lavender and rosemary not only

have unique scents but also have high economic value in the production of essential oils and cosmetics.

By leveraging the seasonal characteristics of plants, we ensure distinct aromas throughout the four seasons to enhance the healing garden's appeal and visitor numbers. Simultaneously, we develop plant-themed tourism, sell plant-based products, and create related cultural and creative merchandise to establish a comprehensive economic ecosystem that maximizes financial benefits.

### 3.3. Culturally - Resonant and people - Centered design

When designing olfactory landscapes, integrate traditional fragrant medicinal plant culture to create resonant environments. For instance, design landscapes based on the cultural connotations of plants, such as creating "fragrant pathways" using plants symbolizing peace and health, or establishing "cultural gardens" with plants associated with festivals.

Put people's needs first, considering olfactory preferences and health needs of groups like the elderly, children, and patients. Choose mild-scented plants for the elderly and fresh-smelling ones for children to spark curiosity. Create interactive areas in healing gardens, such as olfactory experience zones and plant knowledge areas, to boost public engagement and experience.

### 3.4. Technology - Integrated design and management

Make full use of modern technology to improve the design and management level of the olfactory landscape. In the design stage, use digital technology to simulate and optimize the olfactory landscape layout, predict the olfactory effects of different plant combinations, and select the best design scheme.

During the management phase, the intelligent gardening system monitors plant growth, environmental conditions, and visitor behavior. If soil moisture is too low, the system automatically triggers irrigation reminders; when visitor numbers exceed capacity, it prompts crowd control measures. Concurrently, it collects public feedback on olfactory landscapes to optimize garden design and management, thereby enhancing its overall quality.

## 4. Case studies

### 4.1. Therapeutic garden

[Therapeutic Garden] is a typical modern healing garden that has successfully applied traditional incense medicinal plants in its olfactory landscape planning. In terms of policy compliance, the garden strictly follows relevant regulations on plant protection and environmental protection, and selects plants that meet the requirements. Economically, by planting lavender, mint, and other plants with high economic value, and developing related products such as essential oils and scented sachets, it has achieved good economic benefits.

The garden integrates the thematic landscape of medicinal plants. Technologically, it employs smart irrigation and environmental monitoring to ensure plant growth and environmental comfort. These measures have made [Therapeutic Garden] a model for the modern application of traditional aromatic and medicinal plants, attracting numerous visitors.

### 4.2. Healing garden in Vancouver

[Healing Garden in Vancouver] also provides valuable experience in the application of traditional incense medicinal plants. This garden focuses on the needs of the elderly and patients, selecting plants with soothing scents such as sandalwood and chrysanthemum. In the design, it creates a quiet and comfortable environment, with pavilions and corridors built among the plants, providing a place for people to rest and enjoy the scenery.

In terms of technology, it uses VR technology to display the garden landscape in advance, helping designers

optimize the design. At the same time, the smart management system can monitor the health status of plants in real - time and adjust the management measures accordingly. The successful practice of [Healing Garden in Vancouver] shows that by combining traditional incense medicinal plants with modern technology and people - centered design concepts, a high - quality olfactory landscape can be created.

## 5. Conclusion

PEST analysis and olfactory landscape planning indicate that traditional aromatic medicinal plants possess significant application potential in modern therapeutic gardens. Considering policy, economic, cultural, and technological factors, beneficial olfactory landscapes can be created to promote cultural heritage and meet health needs.

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