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Araştırma Makalesi / *Research Paper*

An Example of a Healing Garden Designed with Medicinal and Aromatic Plants that Grow Naturally in Isparta

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ABSTRACT

With the development of thematic parks, the garden culture, in which people turn to nature and where they can get rid of their daily stress and provide mental and physical relaxation, has shown itself as healing gardens. These gardens, which were used for the rehabilitation of patients in church or hospital gardens, have now become areas where people's mental fatigue is relieved in urban areas, and they have become more functional with the use of medicinal and aromatic plants. From this point of view, within the scope of the study, a healing garden was designed with the use of medicinal and aromatic plants that grow naturally in Isparta province. The area, with a total area of 2.21 ha, located on 275th street within the borders of Çünur neighborhood was determined for the design of the healing garden. Thirty-five medicinal and aromatic plants that grow naturally in Isparta are included in this land. As a result of the study, a design that takes its theme from natural elements was realized, and the use of areas suitable for healing gardens has been suggested.

Keywords: Aromatic plants, healing garden, landscape design, medicinal plants, thematic garden

Isparta'da Doğal Olarak Yetişen Tıbbi ve Aromatik Bitkilerle Oluşturulan Bir Şifa Bahçesi Örneği

ÖZ

İnsanların doğaya yönelmesi ve gündelik streslerinden arınabilecekleri, ruhsal ve bedensel rahatlama sağlamak için yöneldikleri bahçe kültürü tematik parkların gelişmesi ile Şifa bahçeleri olarak kendini göstermiştir. Kilise veya hastane bahçelerinde hastaların rehabilitasyonu için kullanılan bu bahçeler, günümüzde kentsel alanlarda insanların ruhsal yorgunluklarının giderildiği alanlara dönüşmüş, tıbbi ve aromatik bitkilerin kullanımı ile de daha fonksiyonel bir hal almıştır. Bu bakış açısı ile çalışma kapsamında Isparta ilinde doğal olarak yetişen tıbbi ve aromatik bitkilerin kullanımı ile bir şifa bahçesi tasarlanmıştır. Çünür mahallesi sınırlarında bulunan 275. cadde üzerinde yer alan toplam 2,21 ha alana sahip arazi şifa bahçesi tasarımı için belirlenmiştir. Isparta'da doğal olarak yetişen otuz beş tıbbi ve aromatik bitkiye bu alanda yer verilmiştir. Çalışma sonucunda temasını doğal elementlerden alan bir tasarım gerçekleştirilerek, şifa bahçelerine uygun alanların kullanımları önerilmiştir.

Anahtar Kelimeler: Aromatik bitkiler, şifa bahçesi, peyzaj tasarımı, tıbbi bitkiler, tematik bahçe

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INTRODUCTION

It is known that being close to nature and benefiting from it has a positive effect on many diseases. According to the World Health Organization (WHO), human health is defined as a state of complete physical, psychological and social well-being, and not only a state without any disease or physical disorder (Fredrickson, 2013). Talking about health, it is necessary to consider the interconnection of physical and mental factors that influence each other (Belčáková et al., 2018).
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In order to get rid of the stress of daily life, it is necessary to return to the inner beauties and escape points that nature gives us (Serez, 2011). The "healing garden" designs have emerged as people turn to nature and tend to spiritual and physical relaxation activities by creating small spaces where they can get rid of their daily stress (Sachs and Marcus, 2012, Smidl et al., 2017). Plants have been in people's lives since their existence, both as food and for healing. Healing garden, on the other hand, is a design designed by experts of the subject in order to get positive health results, prepared according to a specific population, place and purpose (Bayraktar et al., 2017).

A garden must have a healing impact on its users in order to be classified as a healing garden. No matter how well-designed the gardens are, if they are unable to deliver results and demonstrate their full impact, the healing garden has failed (Şakar, 2011). Healing gardens have positive effects on people, such as reducing stress, giving spiritual and physical encouragement for healing, and increasing the healing effect with the use of medicinal and aromatic plants (Marcus and Barnes, 1999; Pouya et al., 2015). The function of a healing garden is rather related to reducing stress and playing a role in the benefit of treatment (Vapaa, 2002; Gülgün, 2015; Pouya et al., 2015; Souter-Brown, 2015), rather than being directly effective in the treatment of a person. While designing healing gardens, attention is paid to design elements such as equality (comprehensible definitions that appeal to all users), flexibility (use types are not created according to individual preferences), simple and meaningful use (the area is easily understandable and understandable even for first-time users), safety and minimal effort. There should be areas where physical effort is required (Uslu and Shakouri, 2014). For the management of the healing garden, it is necessary to provide suitable environments for plants and to have structural elements that meet the needs of the user and complement the garden functions (Marcus and Barnes, 1995; Ulrich et al., 1999; Georgi and Anthopoulos, 2007; Yücel, 2010). One of the most important features of the design is that the materials in each area that the designer will create for the user or visitors while creating healing gardens are compatible with nature and that each plant variety in the plant-supported designs has the main purpose of healing.

The use of plants that relax the users with their colors and scents is one of the elements that increase the success of the design (Demirkan, 2019). Especially medicinal and aromatic plants have important functions in healing gardens in terms of aesthetics and functionality (Arslan et al., 2018). By definition, medicinal and aromatic plants; are plants that have many uses such as food, medicine, cosmetics and spices and are known to have been used for similar purposes since the beginning of human history (Acıbuca and Budak, 2018). When these plants are used in the areas where they spread, considering the success in adaptation, it increases the diversity of species and ecotypes in terms of landscape design, planning and planting studies.

Turkey has an important place in terms of medicinal and aromatic plants as well as the richness of flora (Baydar ve Telci, 2015, Dönmez et al, 2016; Dönmez, 2022). Especially Isparta is one of our areas with high species diversity as well as medicinal and aromatic plant existence due to the ecological characteristics of the lakes it contains and the transition zone between the Mediterranean climate and the continental climate (Doğanoğlu et al, 2006; Dönmez, 2016; Dönmez and Salman, 2017; Kara et al, 2022). However, open green spaces in Isparta are limited to city parks and picnic areas.

In line with this point of view, the main purpose of the study is to design a Healing Garden in Isparta where people can relax, where medicinal and aromatic plants can both be exhibited and benefited.

MATERIAL AND METHOD

Material

The area where the healing garden design was made is located in Isparta in the Çünür neighborhood (Figure 1). Isparta is located in the Lakes region in the north of the Mediterranean region. The average altitude of the city is 1050 meters. There are very high mountains in the province, which are the extension of the Western Taurus Mountains and reach 3000 meters in height. The most important mountains in the province are Dedegöl, Barla, Davraz, and Akdağ; the most important known lakes are Eğirdir Lake, Beyşehir Lake, Kovada Lake, and Gölcük Crater Lake (Isparta KTB, 2022).

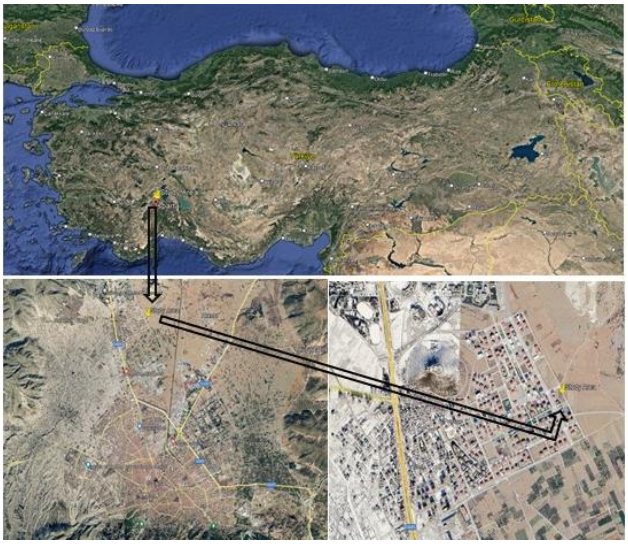

Figure 1. Location of Isparta in Turkey

The province of Isparta is located in the Lakes region, between the Mediterranean and Central Anatolia regions, in the transition zone with semi-arid climatic conditions (Kara et al., 2022). Isparta is under the influence of both the Inner West Anatolian climate and the Mediterranean climate. As in the Mediterranean coastal region, winter precipitation is intense, and spring precipitation is almost equal to the value of winter precipitation. The summer drought is slightly milder than the Mediterranean climate (Kantarcı, 2008). The average temperature of the summer is 21°C, the winter months is 3°C.

The climate of the Lakes region is a mixture of these and a transition area to Central Anatolia. In addition, the number of frost days is higher here than in the Mediterranean coastal regions. Soils in Isparta province generally have a calcareous main structure. The tectonic depression grooves, on the other hand, were filled with alluvium, and the soils, which constitute the main source of agriculture in the province, emerged (Isparta KTB, 2022). In the Çünür neighborhood where the design was realized, the soils are colluvial, medium light textured, medium permeable. The dominant slope is 2%. Ph is between 8 and 7.90. The lime ratio varies between 9.42% and 8.16 (Isparta TKB, 2003). The land located on 275th street in Çünur Neighborhood, with a total population of 18,806, which is 7 km away from the center of Isparta, was determined for the design of the healing garden. The area is reserved as a recreation area by Isparta municipality (Figure 2). There is a high school and mass housing near the area. The prevailing wind direction is south east. 2.21 hectares of land has no vegetation.

Figure 2. View of the field

Method

A "healing garden" design was created in the area by taking into consideration the literature research and field analysis. While determining the usage areas and activities in the area, the healing garden design criteria and the reinforcement elements that should be used are included (Georgi and Anthopoulos, 2007; Yücel, 2010; Uslu and Shakouri, 2014). The project of the area was made in the AutoCAD 2019 program and colored in the SketchUp 2019 program. Three-dimensional images were made in the Lumion 3D 8.0.

The use of medicinal and aromatic plants comes to the fore in the herbal design of healing gardens.In the study by Kara (2020), 703 plants naturally distributed in Isparta were evaluated (URL-1, 2019; TUBIVES, 2019). As a result of both biochemical and ethnobotanical studies in the literature, 120 medicinal and aromatic species were included in the study (plants with only ethnobotanical use were excluded from the study). As a result of the expert surveys, 53 of the 120 plants evaluated in terms of use in plant design came to the fore in terms of aesthetics and functionality. In this study, 35 of the 53 plants, which stand out with their scent and flower features, were used in the design of the healing garden (Table 1).

RESULTS AND DISCUSSION

The definition of a healing garden is at an important point where healing and therapy gardens intersect with other gardens. Healing gardens are gardens that people can easily access. While designed by an expert, they can be used by both sick and healthy people (Pouya et al., 2015).

Care was taken to ensure that the materials used in the design are suitable for nature, reflect nature, and can be easily used by everyone, regardless of user groups. While creating special areas for users, they are also allowed to socialize (Gülgün, 2015). The elements used in the plant selections, the changes in leaf color during the seasons, and the designs that will highlight the odor characteristics and the elements that remind people of water, bird sounds, and many natural and relaxing elements are used.

In the design of the healing garden, the elements of fire, water, and earth were taken as a concept (Figure 3). The area's entrance welcomes users with a wide square. While benefiting from the powerful properties of sand and fire, in turn, the healing and calming effects of water were used together. Green tunnels camouflaged with plants were built. These tunnels are combined with water elements and vegetal designs. The waterfall and pond, located next to a plain entrance in the area where the water elements are dominated by blue colors, are designed to make people feel positive emotions and serenity. In the use of the fire element, besides the play of light, which provides a fire image, plant species that dominate red and orange colors are included (Figure 4). The earth element is emphasized by the clay workshop and the zen garden (Figure 5).

While designing the healing gardens, climatic conditions, land conditions, vegetation should be considered in relation to the place to be chosen so that the garden can fulfill its functions. It is important to obtain data and make decisions accordingly (Jiang, 2013). The ecological demands of medicinal and aromatic plants, besides being natural species, provide integrity to these gardens with their healing properties (Vapaa, 2002; Georgi and Anthopoulos, 2007). In the design, plant species suitable for the concept of the healing garden are included. In the selected medicinal and aromatic plants, attention was paid to ensure that they have a pleasant smell and are aesthetically compatible.

In order to support the calming and comforting properties of water, *Tilia platyphyllos*, *Salvia virgate, Thymus zygioides* subps*. ycaonicus* are used in this area, which relaxes with their scents. In order to emphasize the warm and empowering nature of fire, *Lonicera etrusca, Epilobium angustifolium, Rosa canina, Lonicera etrusca* herbs with prominent flowers and fruits were used. Examples of plant compositions used in the project are given in Figure 6.

Table 1. Natural Medicinal and Aromatic Plants Used in Design

Plant name	Colour of flowers	Medicinal and Aromatic Status				Reference
		Dyeastaff	Food	Medicine	Cosmetic	
Achillea grandifolia	White				X	Taskin et al., 2018
Berberis crataegina	Yellow				X	Yeşilada and Küpeli, 2002
Centranthus longiflorus	Pink-Purple			X		Büyükokuroğlu et al., 2002
Cornus mas	Yellow			X	X	Klymenko et al., 2021
Corylus avellana	Yellow		X			Nikolaieva et al., 2019
Cynanchum acutum	White			X		Fawzy et al., 2008
Dactylorhiza iberica	Pink			X	X	Palaz et al., 2018
Fraxinus ornus subps. cilicica	Cream			X		Tonguç, 2019
Liquidambar orientalis	Cream-Green			X	X	Sağdıç, 2005
Styrax officinalis	White	X				Jaradat, 2020
Tilia platyphyllos	Cream-Green			X		Jabeur et al., 2017
Epilobium angustifolium	Pink			X	X	Adamczak et al., 2019
Galium verum	Yellow	X		X		Bradic et al., 2019
Helianthemum nummularium ovatum	Yellow			X		Hürkul et al., 2016
Iris pseudacorus	Yellow			X		Hanawa et al, 1991
Jasminum fruticans	Yellow				X	Akkol et al., 2021
Lonicera etrusca	White-Pink				X	Raafat and Samy, 2018
Lysimachia punctata	Yellow	X				Tóht et al., 2016
Malva neglecta wallr.	White-Pink			X		Mohammadhosseini, 2021
Medicago sativa	Purple		X			Bora and Shama, 2011
Origanum minutiflorum	White			X		Aslim and Yucel, 2008
Pelargonium endlicherianum	Pink			X	X	Karatoprak et al., 2017
Polygonum bistorta	Pink			X		Khushtar et al., 2018
Rosa canina	Pink			X	X	Orhan et al., 2009
Rubus canescens	White			X		Assafiri et al., 2020
Salvia virgata	Puprle				X	Koşar et al., 2008
Sambucus ebulus	White			X		Ebrahimzadeh et al., 2007
Sedum album	White			X	X	Meimandi and Yaghoobi, 2019
Silene aegyptiaca	Pink				X	Böyümez, 2014
Silene compacta	Pink			X		Boğa, 2017
Thymus longicaulis* subsp. *chaubardii	Pink				X	Tzakou et al., 1998
Thymus sipyleus	White				X	Ustuner et al., 2019
Thymus zygioides	White-Pink					Sargın et al., 2013
Thymus zygioides* subps. *lycaonicus	Pink-Purple			X		Azaz et al., 2004

Figure 3. Healing garden design project

Figure 4. Fire, sandbox and water elements

Figure 5. Greenhouse and clay workshop, metal walls

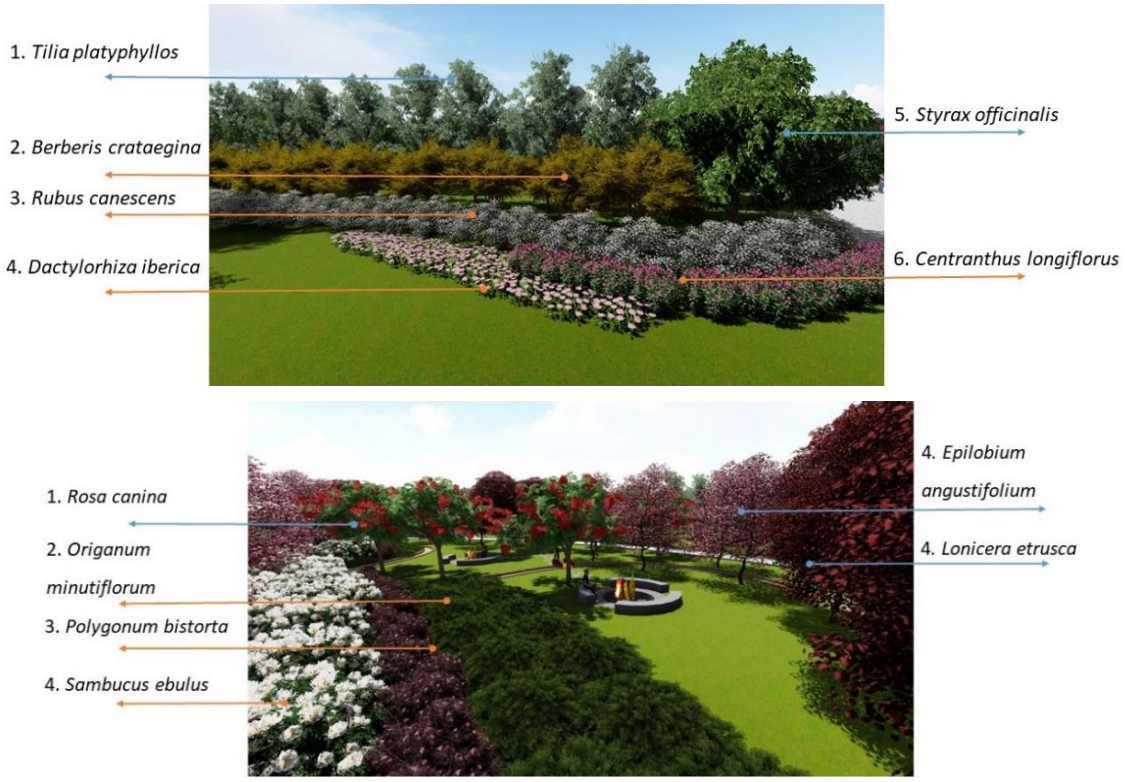

Figure 6. Plant compositions used in the project

CONCLUSION

Isparta, located in the Mediterranean Region of Turkey, is located in the transition zone between the Mediterranean climate and the continental climate prevailing in Central Anatolia. For this reason, both climatic characteristics are seen within the borders of the province. This situation allows the creation of areas where it can be exhibited in different designs as well as increasing the diversity of plants. Today, people's expectations from open green space are not limited to sitting and resting. In this direction, designers add variety to their designs in different concepts. However, the biggest handicap encountered is that no matter how different the design is, the herbal design is made with the same characteristics, usually the same species. In fact, this situation both negatively affects the success of the concept and makes the designs similar to each other no matter which region they are made. However, plants that grow naturally in an area also emphasize the identity of that area. The main idea to be emphasized in this study is not only the design of a healing garden, but also to reflect the richness of species and the strong medicinal and aromatic feature of Isparta to its identity. As a result of the study, it was revealed that a Healing Garden can be created with plants that spread naturally in Isparta, which has an important place in terms of medicinal and aromatic plants.

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