



A RESEARCH ON CREATING THE COLOR EFFECT IN PLANTING DESIGN THROUGHOUT THE YEAR

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ABSTRACT. Plants, which play an important role in landscape designs, show sensory effects on people with their functionality and appeal to the senses within the scope of their characteristics. The seasonal characteristics (flower, leaf, fruit, stem, branch-shoot coloring), textures, forms and fragrances of the plants used in planting design are taken into consideration. Among these features, the color effect is the most striking visual feature of a plant. Colors are one of the most determining elements people use in recognizing, introducing and reporting objects and events. This study, it is aimed to create a visual effect throughout the year by examining the colors of flowers, leaves, fruits, stems, branches and shoots of plants. Color characteristics of plants suitable for the Bursa province climate were investigated. Planting design examples that have a visual impact throughout the year were created with suitable plants. Planting designs are collected under two different headings as monochrome and polychrome arrangements. Using AutoCAD and Photoshop programs, the plans of planting design samples were drawn, the status of the color features in the plants according to the months was given and the appearances of the samples were created. As a result of the research, the applicability of the emerging planting designs will set an example in the creation of spaces with color effects throughout the year.

Keywords: *Bursa, color effect, planting design, seasonal coloring*

INTRODUCTION

Plants differ aesthetically and functionally in planting designs in cities with their features such as color, texture, form and size [1,2]. When the functional and aesthetic aspects of plants are evaluated, their texture, forms, seasonal characteristics (flower, leaf, fruit, stem, branch-shoot coloration) are taken into account. The most striking or striking visual feature of a plant is its color. Therefore, color has a very important place in planting design. Plants have different properties that can be used in planting design. These; is the color of the branches, buds, leaves, fruits, flowers, stem bark of the plants, and most importantly, the colors they take according to the seasons [3].

Plants, together with their striking colors, are one of the most decisive elements in recognizing, promoting and reporting objects and events. At the same time, colors have different psychological and physiological effects on people. Some colors can attract attention more easily than others, and some of them affect human psychology and physiology positively or negatively. Colors have been used extensively by scientists and artists since the 16th century when the first scientific theories about colors emerged. Since it also affects human physiology and emotions, colors mean more than the objective information we have about the world [4,5,6].

Color affects spatial perception in plant design. Color supports the perception and definition of space by expressing and highlighting the functionality of spaces. The

suitability of the chosen color to the functions in the space can help us to maintain the use of the spaces easily. It reveals the fact that the items used are near-far or remarkable [7,8]. Due to the visual effect of warm colors, they seem to be getting closer to the observer, and for this reason, warm colors are often used to reduce the effect of large spaces. Bright colors tend to excite and attract attention, while dull or cool colors are more suitable for serenity. For this reason, the use of color in planting design in spaces has a great impact on daily life.

When using the color characteristics of plants in a landscape design, green leafy plants should be preferred first. While the light shades of green in unlimited tones expand the space, the green in dark tones has a narrowing effect. Considering that green plants of the same tone can obscure each other's characteristics, plants with differences such as form, texture and size should be chosen. Many people, who are bored with the gray and brown tones that we see most in urban life, prefer bright and vibrant colors when choosing plants. (Plants with strong color characteristics should be found in groups and only in certain regions. Bright colors in planting design should not be used carelessly and in large numbers. If bright colors are found in many and different places in the design, this can confuse [9].

Using too many colors in designs can tire the eyes, but plants with white or yellow color have a relaxing effect both during the day and at night, and this cannot be said for many colors. Silver and gray-leaved plants can be used together to create a bright, lively environment. Purple color is seen in flowers rather than leaves in plants. Since it is an assertive color, it is difficult to use in a plant group consisting of mixed colors. A plant bed created in purple tones creates an eye-catching and at the same time sad environment. A warm color reminiscent of the sun, yellow and its tones illuminate the area. Red and orange are colors that can be used to enliven vibrant spaces and illuminate dark areas. Usually, the orange and red colors of the leaves are seen in the autumn months. While colorful plants create a final effect in spaces, they are also impressive in plant groups or in grass areas [10].

Planting designs made with colors can be grouped as monochrome and polychrome arrangements. Generally, the arrangements in which a single color and its derivative colors are used are monochrome. Such arrangements represent uniformity and stagnation. It is more preferred in large areas. In polychrome arrangements, it is aimed to use many different colors for many and many purposes. This feature is sought not only in plants but also in architectural designs. Since such arrangements can create confusion in large areas, it is necessary to pay attention to the choice of color. If three or more colors will be used in the planting design; one of them should be preferred [5,6,9].

In this study, seasonal colorations in planting design were examined. It is aimed to create a color effect throughout the year by taking into account the flowers, leaves, fruits, stems, branches and shoots of the plants. These designs can be taken as examples in places suitable for similar climatic conditions.

MATERIALS AND METHODS

In this study, plants that are suitable for the climate of Bursa province and attract attention with their flower, leaf, fruit, stem, branch-shoot coloration were investigated. These plants constitute the main material of the study.

Although Bursa has a mild climate in general, the climate varies according to the region. While there is a temperate climate originating from the Marmara Sea in the

north, there is a harsh climate originating from Uludağ in the south region. Bursa is located in the transition zone of the Black Sea and Mediterranean climates. The hottest months of the province are July-August, and the coldest months are January-February [11].

With the plant list obtained according to the data, planting design examples with visual effects were made throughout the year. By using AutoCAD and Photoshop programs, the plans and appearances of the planting designs were drawn.

RESULT AND DISCUSSION

In the findings part of the research, examples of planting design examples and the use of sample areas where these designs can be applied are given, taking into account the color characteristics.

Planting Design Examples

The plans of the planting design examples that have a visual effect throughout the year and the color characteristics of the plants according to the months are given in Fig. 1-20.

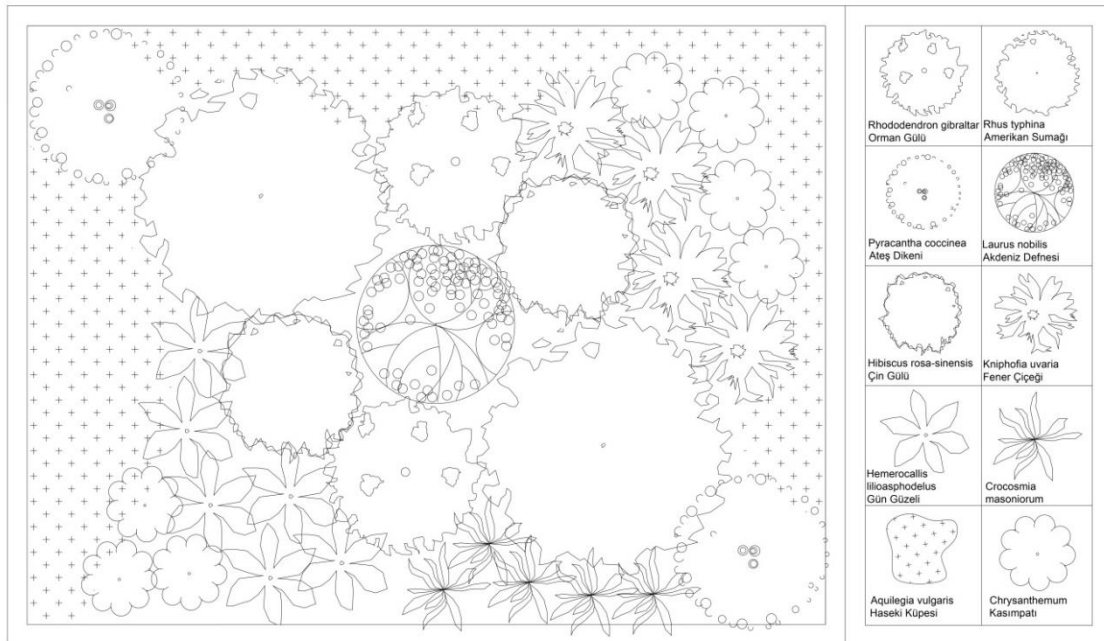


Fig. 1. Planting design plan with orange color effect (Scale: 1/40)

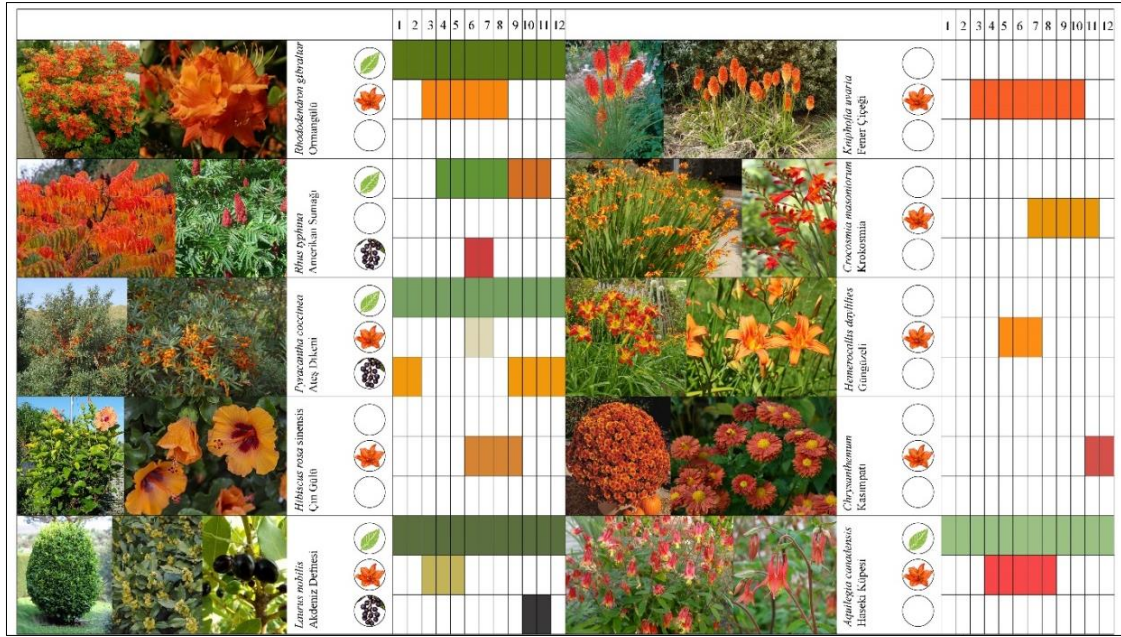


Fig. 2. The status of the color characteristics of the plants used in Figure 1 according to the months (leaves, flowers, fruits, respectively)

Although it is a warm color, it is mature and stable. It increases the feelings of vitality, creativity, confidence, communication and socialization motive. It can create tension when predominantly used excessively and watched for a long time. This effect disappears when orange is used together with green and blue tones. It can be used in children's playgrounds due to its lively and entertaining structure. It is also suitable for use in industrial areas, factory gardens and museum gardens [12,13,14].

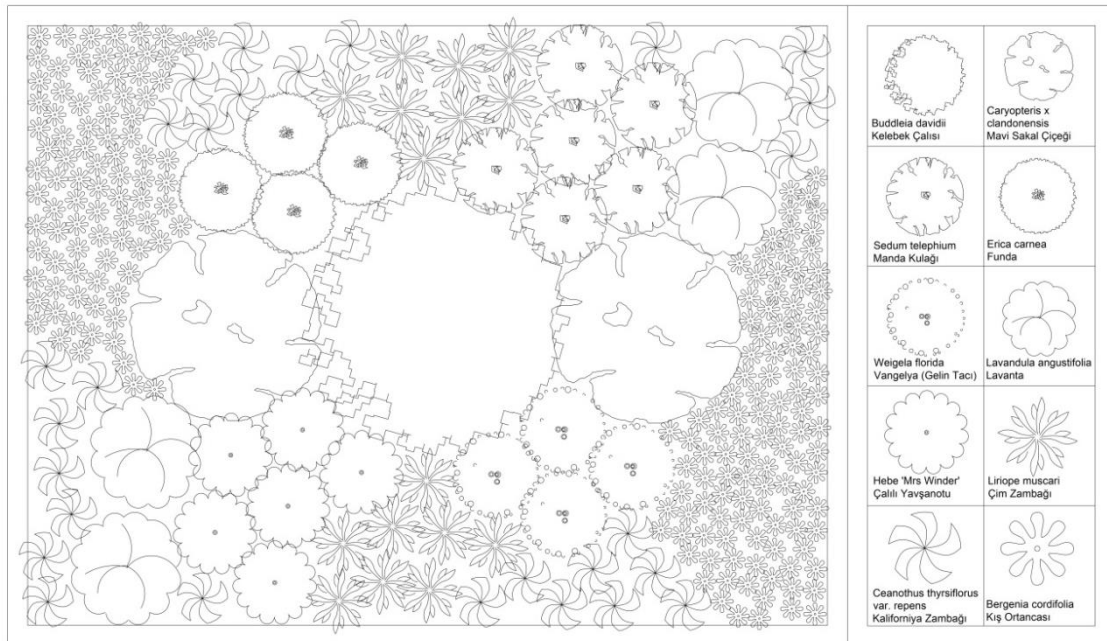


Fig. 3. Planting design plan with purple color effect (Scale: 1/40)

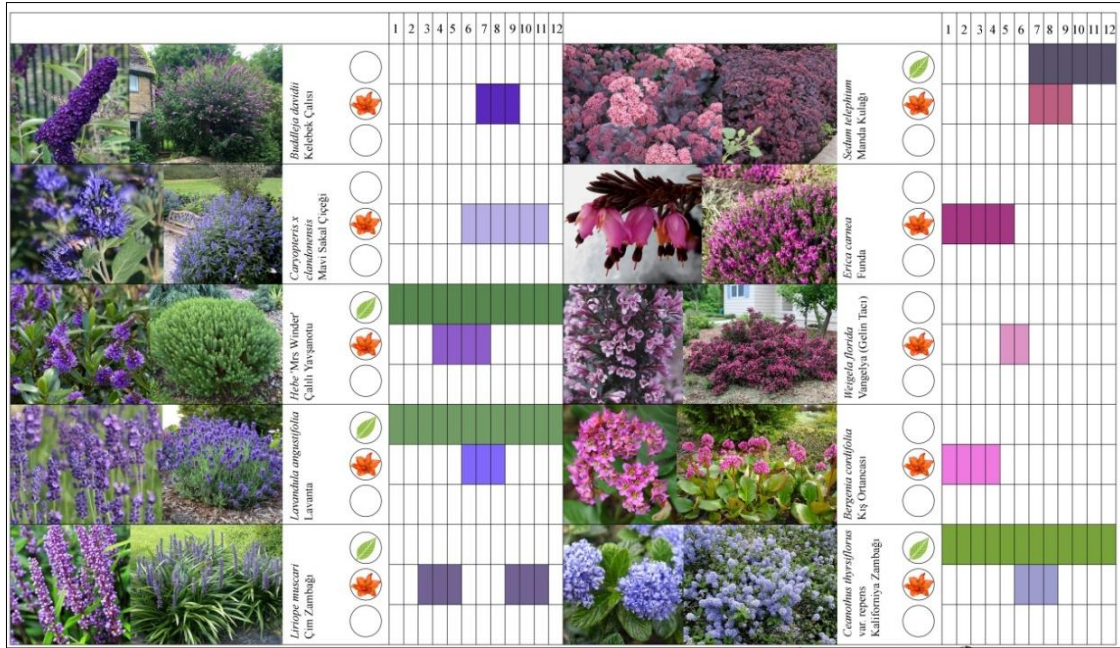


Fig. 4. The status of the color characteristics of the plants used in Figure 3 according to the months (leaves, flowers, fruits, respectively)

It is known as a symbol of refinement, dignity, wealth and self-confidence. It creates a desire to think and create in the audience, and increases tolerance. When it is dominant and watched for a long time, it can reveal the subconscious fears as well as creating a feeling of impatience. It should be preferred in psychologist clinics and gardens with a waiting function. Technology with commercial activities can be used in workplace gardens and eateries operating such as clothing and food [12,13,14].

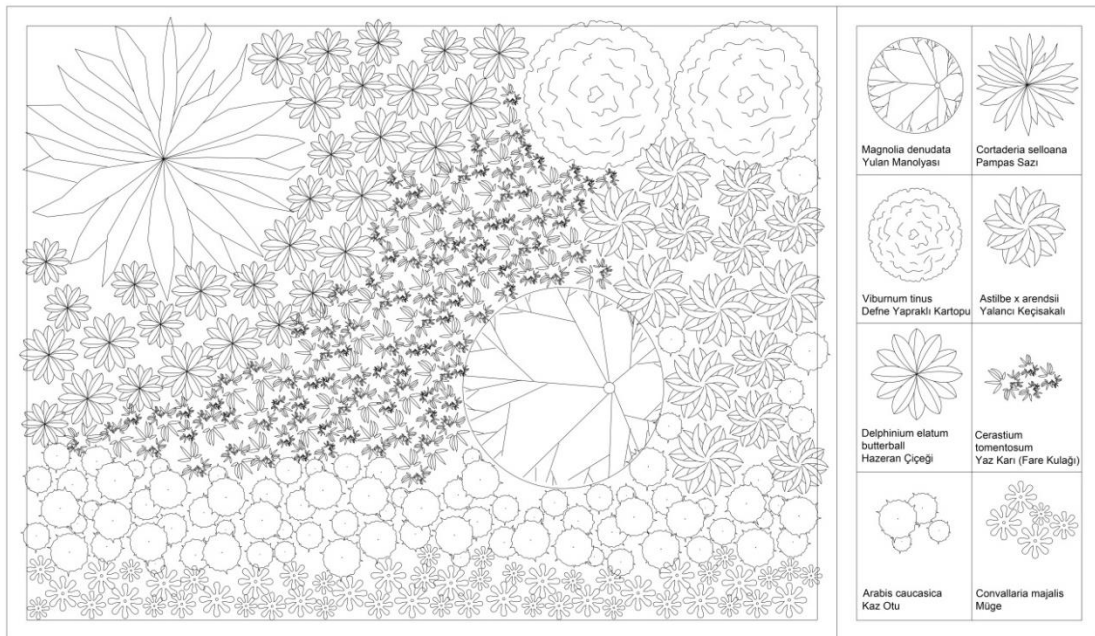


Fig. 5. Planting design plan with white color effect (Scale: 1/40)

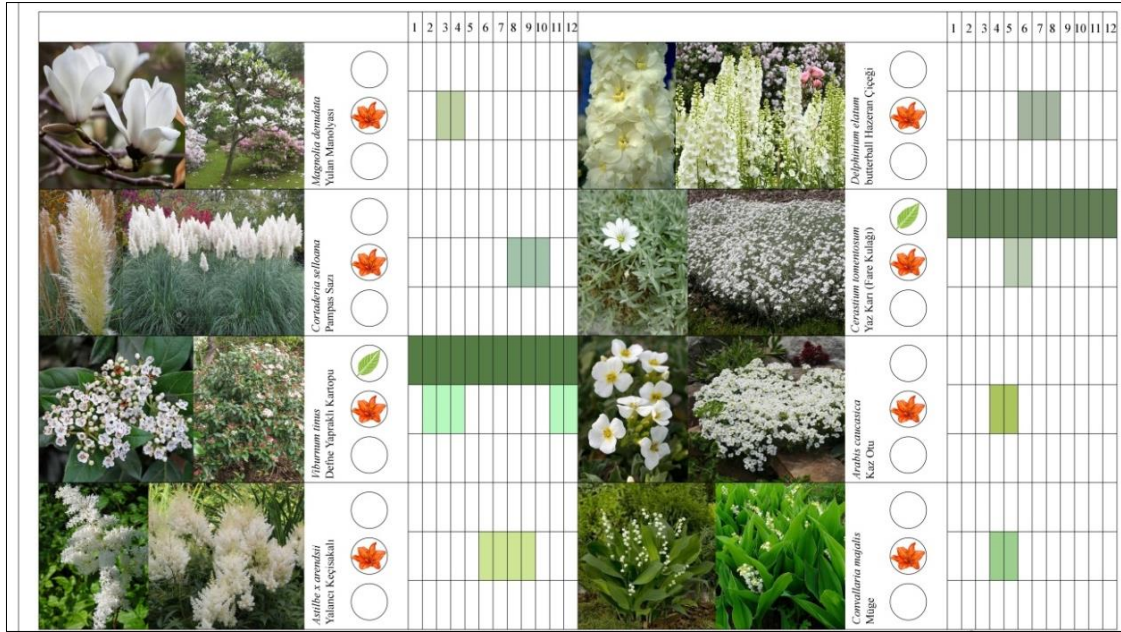


Fig. 6. The status of the color characteristics of the plants used in Figure 5 according to the months (leaves, flowers, fruits, respectively)

It is the symbol of cleanliness, purity, honesty and continuity. It creates a positive and positive impact. It should be preferred in the designs where the air temperature is high, as it scatters the light. It can be used in hotels, hospitals, religious buildings, mass housing and office gardens [12,13,14].

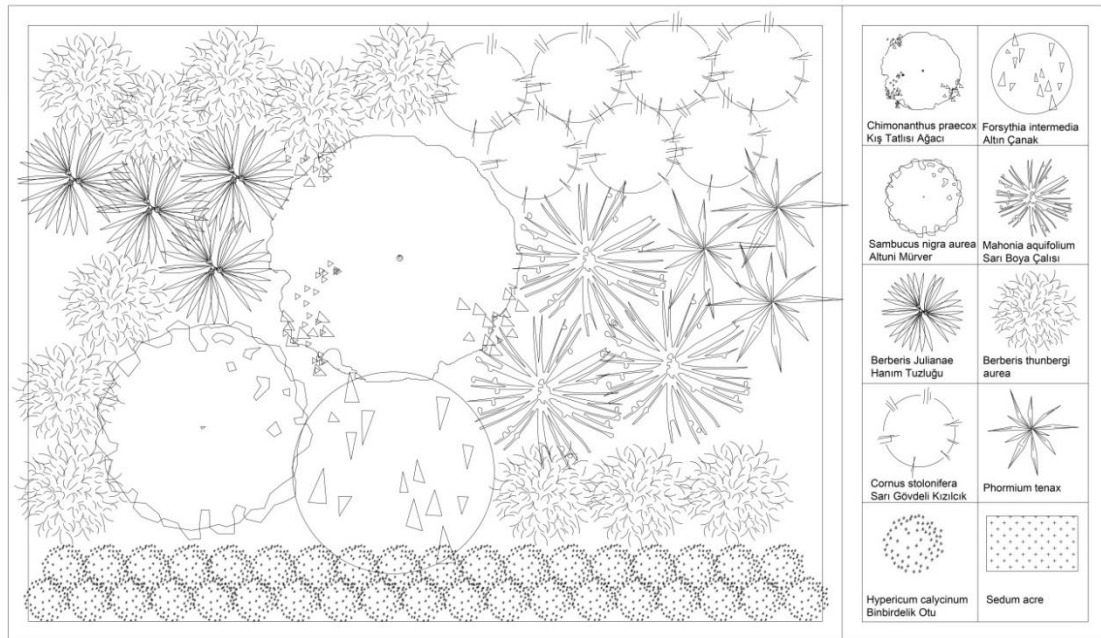


Fig. 7. Planting design plan with yellow color effect (Scale: 1/40)

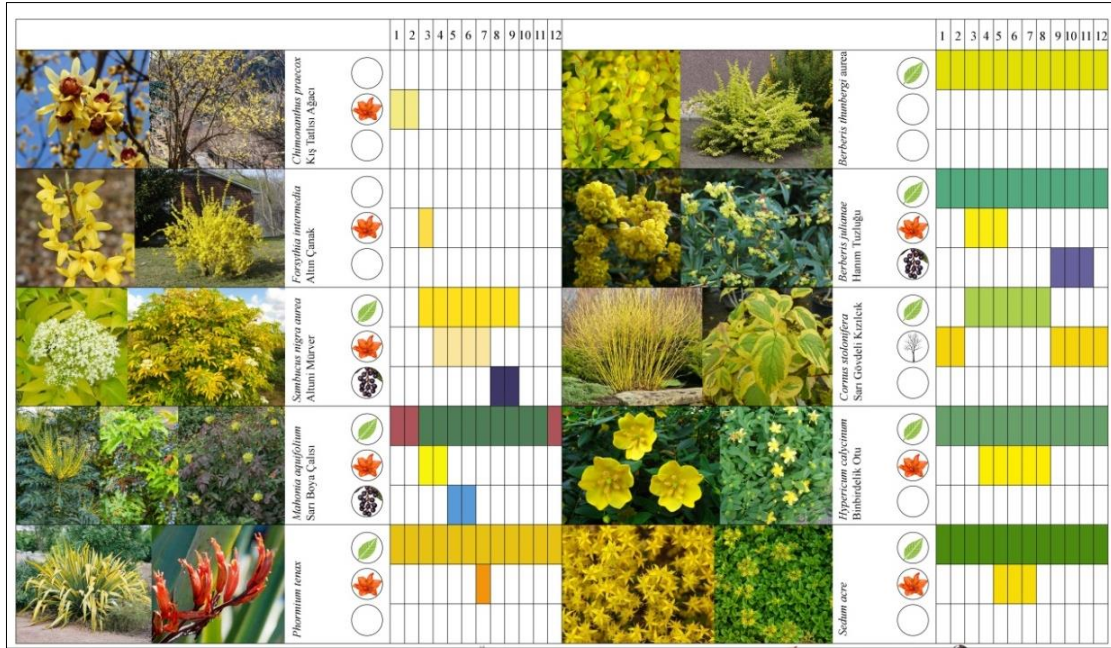


Fig. 8. The status of the color characteristics of the plants used in Figure 7 according to the months (leaves, flowers, fruits, respectively)

Yellow is described as a cheerful, lively and relaxing color. It also has a positive effect on generating ideas. It is also said to have a meaning that reflects social life and working together. It is stated that yellow, when watched for a long time, positively affects the nervous and circulatory systems. Yellow is the first color noticed by the human eye [4]. It can be used at the entrances of the places that want to be emphasized. It can be used in educational institutions and library gardens from kindergarten to university. It is also suitable for use in gardens such as nursing homes [12,13,14].

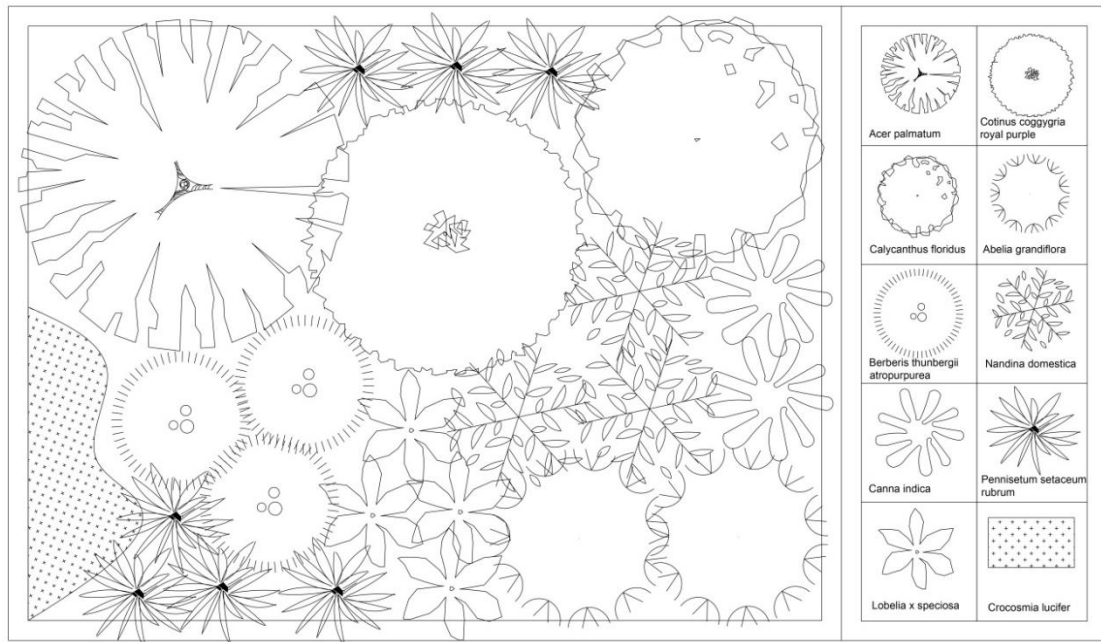


Fig. 9. Planting design plan with red color effect (Scale: 1/40)

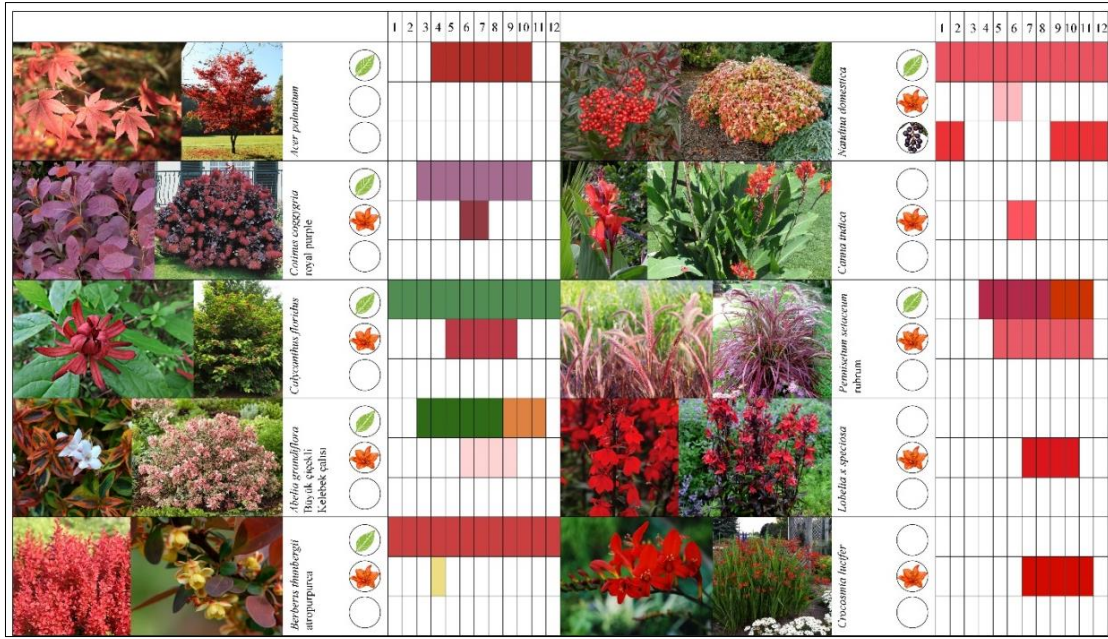


Fig. 10. The status of the color characteristics of the plants used in Figure 9 according to the months (leaves, flowers, fruits, respectively)

Red creates agility and determination in people with its lively, strong and dynamic feature. It is an exciting color. It represents struggle and vitality. When used excessively and for a long time, it increases tension and accelerates blood flow. Red, which has a remarkable and dynamic structure, can be used in technology products, commercial workplace gardens belonging to the automotive sector, company gardens that require design or creativity, and in food and beverage areas due to its appetizing feature. It can also be used in sports and activity areas and in gardens designed for entertainment [12,13,14].

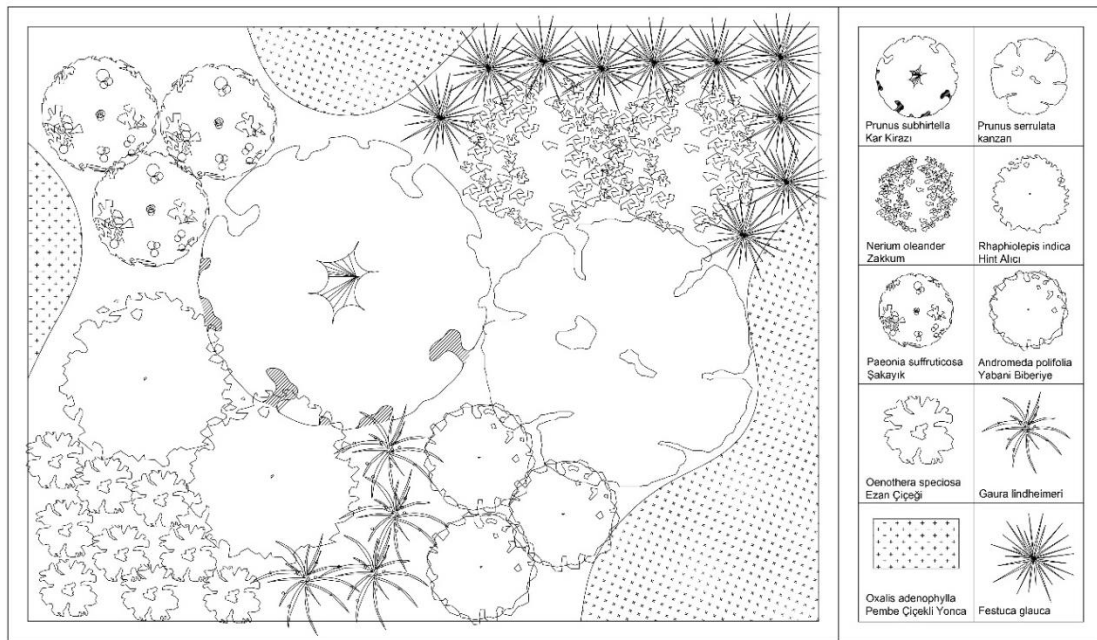


Fig. 11. Planting design plan with pink color effect (Scale: 1/40)

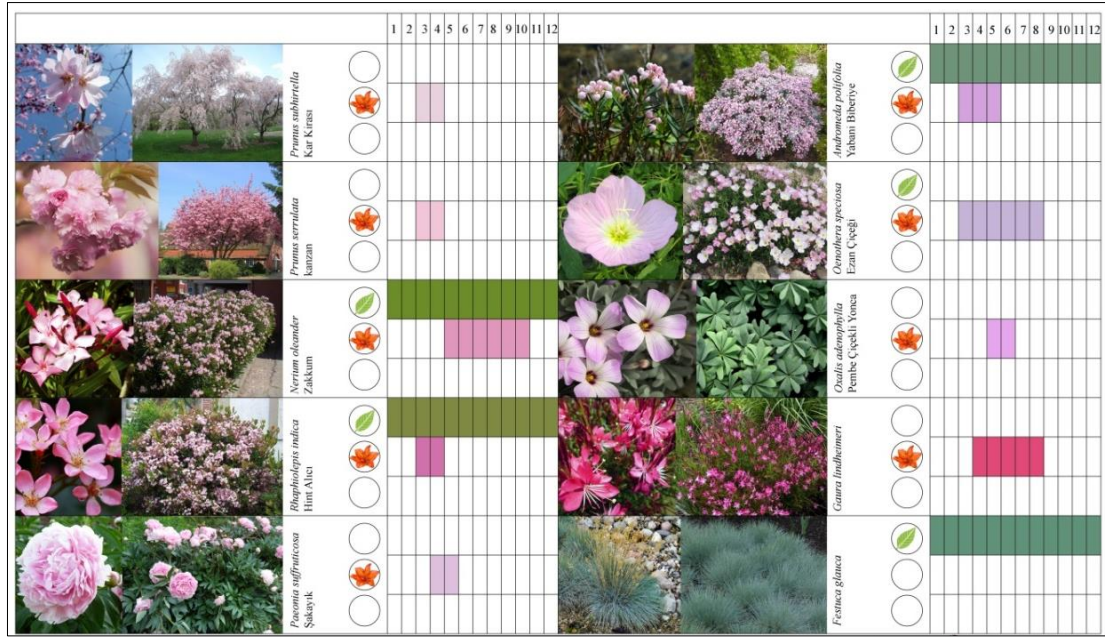


Fig. 12. The status of the color characteristics of the plants used in Figure 11 according to the months (leaves, flowers, fruits, respectively)

It is known as a symbol of compatibility, cuteness, calmness, joy and love. It creates calmness, clarity and peace in the viewer. The stabilizer color is green. It has a positive effect on relaxation. It can be used in prison and hospital gardens [12,13,14].

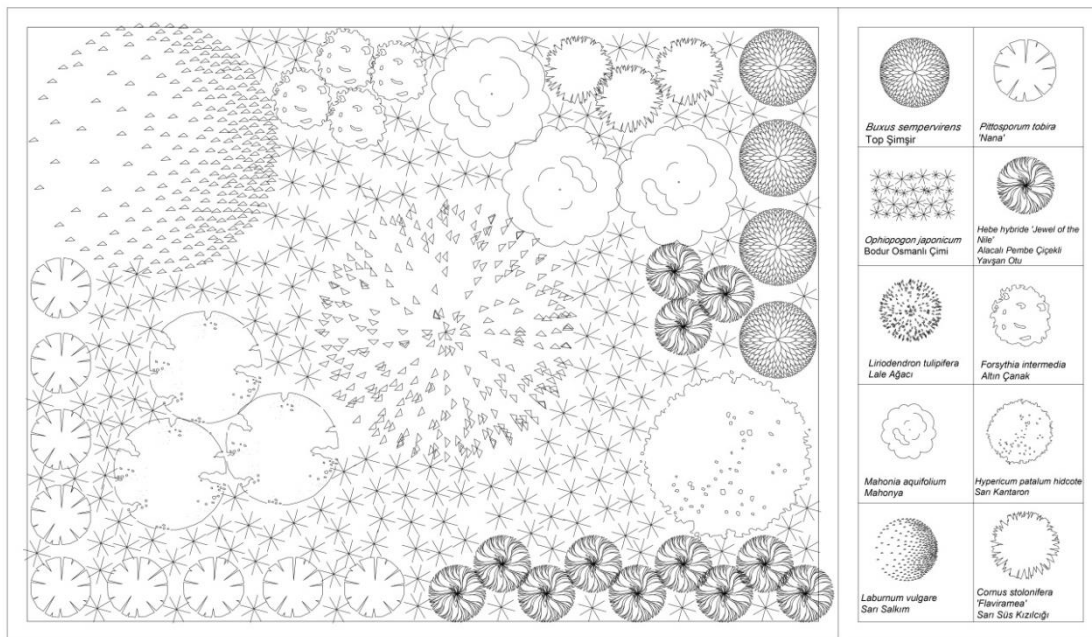


Fig. 13. Planting design plan with polychrome color effect (Scale: 1/40)

		1	2	3	4	5	6	7	8	9	10	11	12			1	2	3	4	5	6	7	8	9	10	11	12
	<i>Bacus sempervirens</i> Simsgr	●	●	●	●	●	●	●	●	●	●	●	●		<i>Pittosporum tobira nana</i>	●	●	●	●	●	●	●	●	●	●	●	●
	<i>Ophiopogon japonicum</i> Bedar Omamli Çimi	●	●	●	●	●	●	●	●	●	●	●	●		<i>Hypericum calycinum</i> Bintirdelik Otu	●	●	●	●	●	●	●	●	●	●	●	●
	<i>Forsythia intermedia</i> Ahn Çanak	●	●	●	●	●	●	●	●	●	●	●	●		<i>Liriodendron tulipifera</i> Lale Ağacı	●	●	●	●	●	●	●	●	●	●	●	●
	<i>Hebe hybride</i> Alacalı Pembe Çiçekli Yavşan Otu	●	●	●	●	●	●	●	●	●	●	●	●		<i>Laburnum angustifolium</i> Ağaç Sarı Salkım	●	●	●	●	●	●	●	●	●	●	●	●
	<i>Mahonia aquifolium</i> Sarı Boya Çalı	●	●	●	●	●	●	●	●	●	●	●	●		<i>Cornus stolonifera</i> Sarı Gerdelli Kızılcık	●	●	●	●	●	●	●	●	●	●	●	●

Fig. 14. The status of the color characteristics of the plants used in Figure 13 according to the months (leaves, flowers, fruits, respectively)

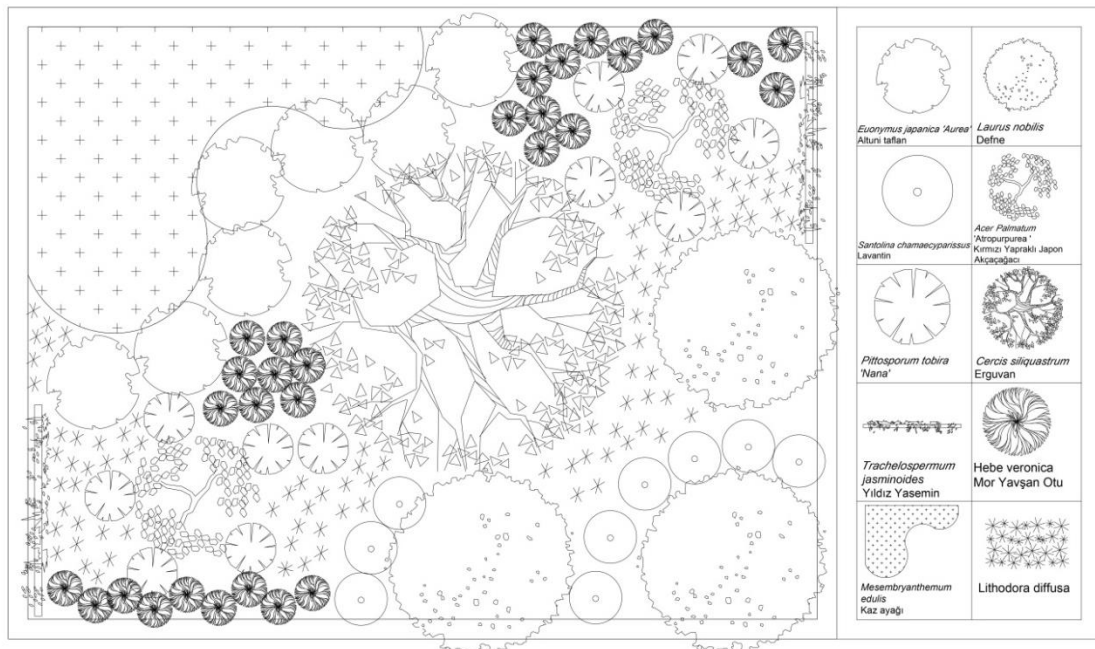


Fig. 15. Planting design plan with polychrome color effect (Scale: 1/40)

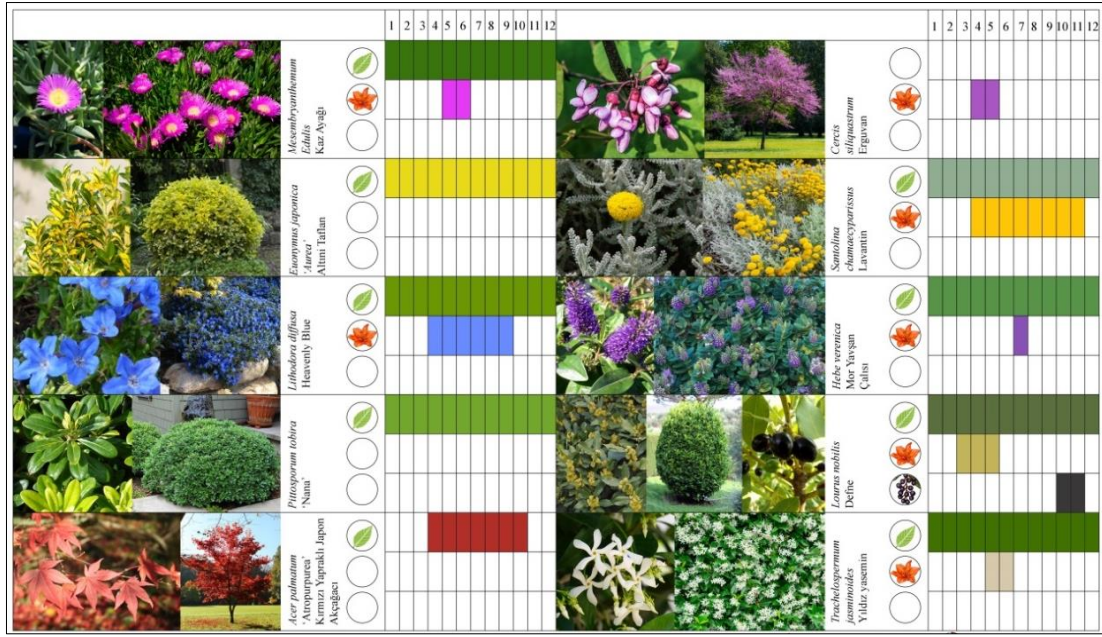


Fig. 16. The status of the color characteristics of the plants used in Figure 15 according to the months (leaves, flowers, fruits, respectively)

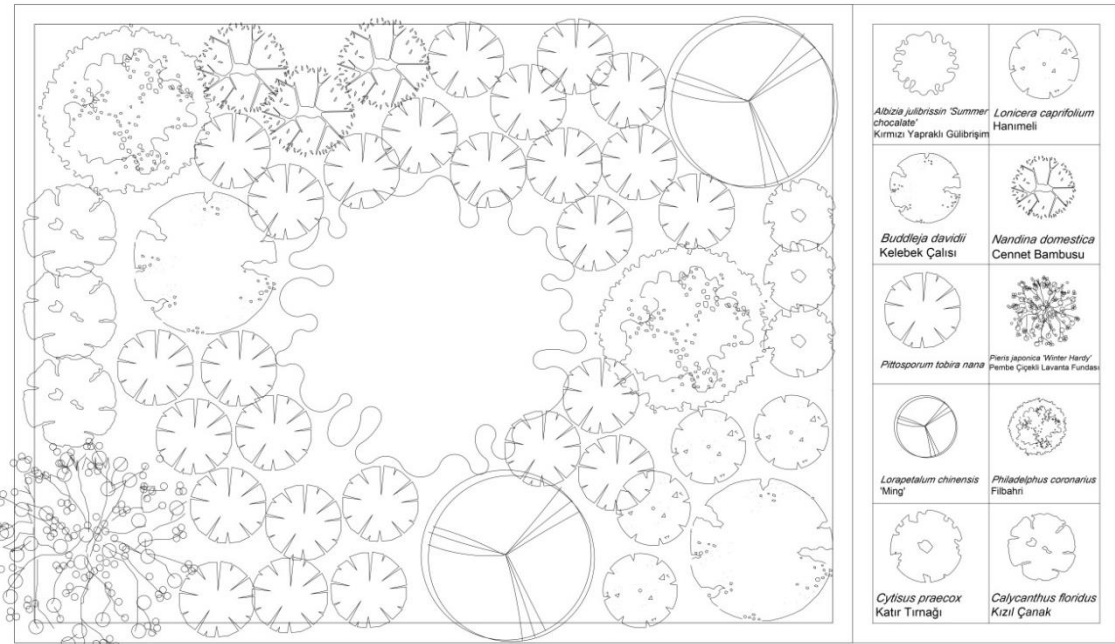


Fig. 17. Planting design plan with polychrome color effect (Scale: 1/40)

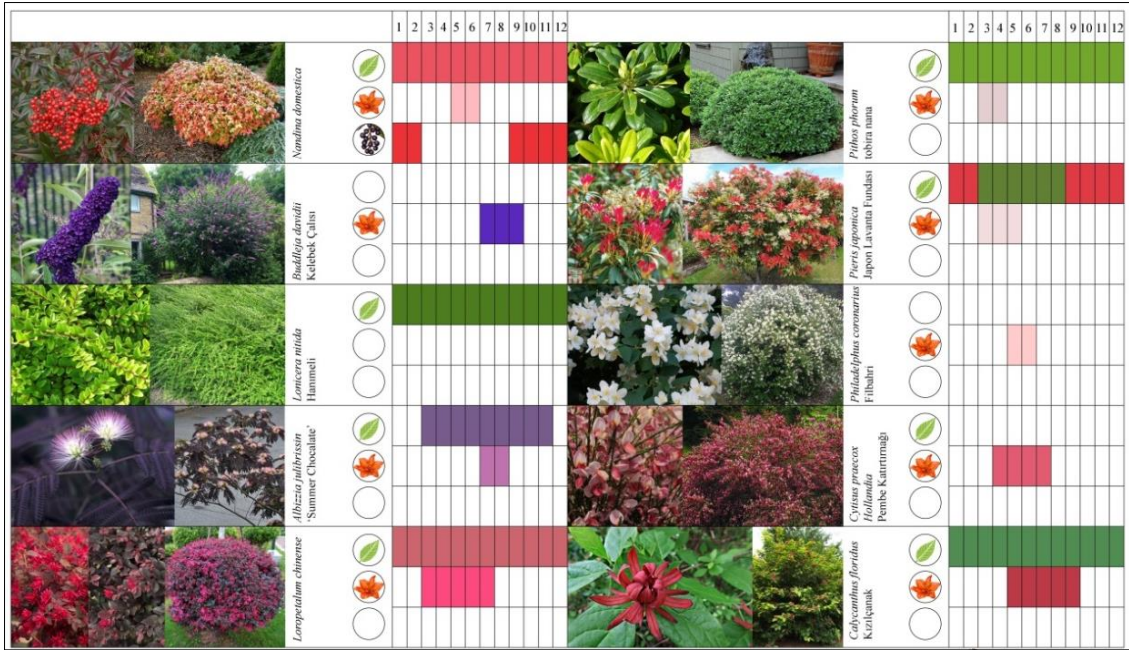


Fig. 18. The status of the color characteristics of the plants used in Figure 17 according to the months (leaves, flowers, fruits, respectively)

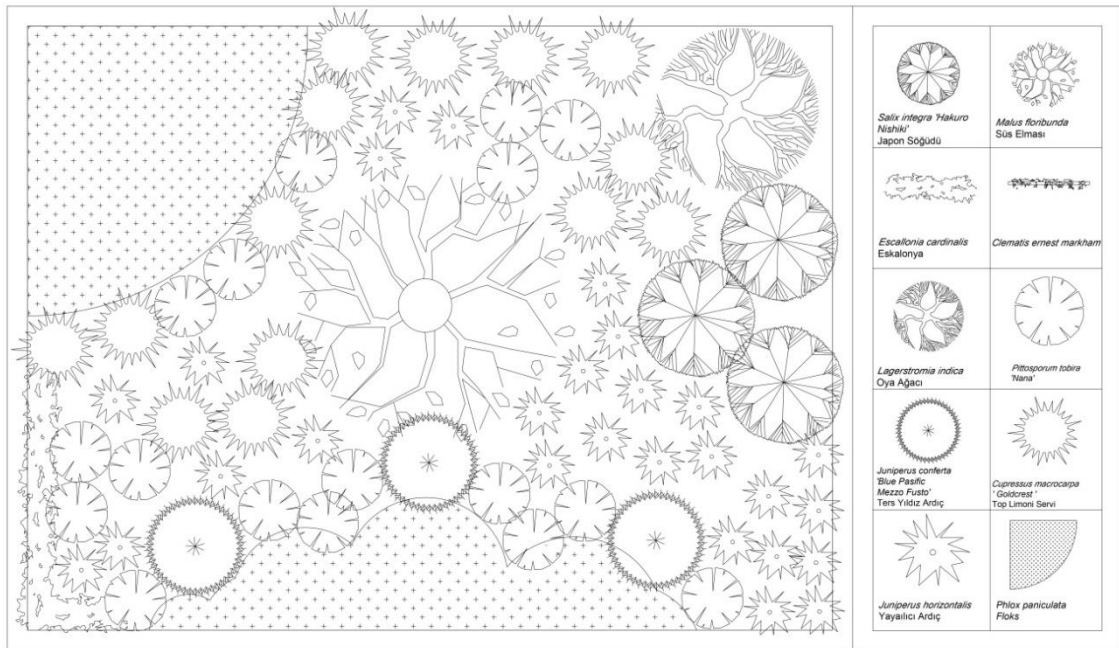


Fig. 19. Planting design plan with polychrome color effect (Scale: 1/40)

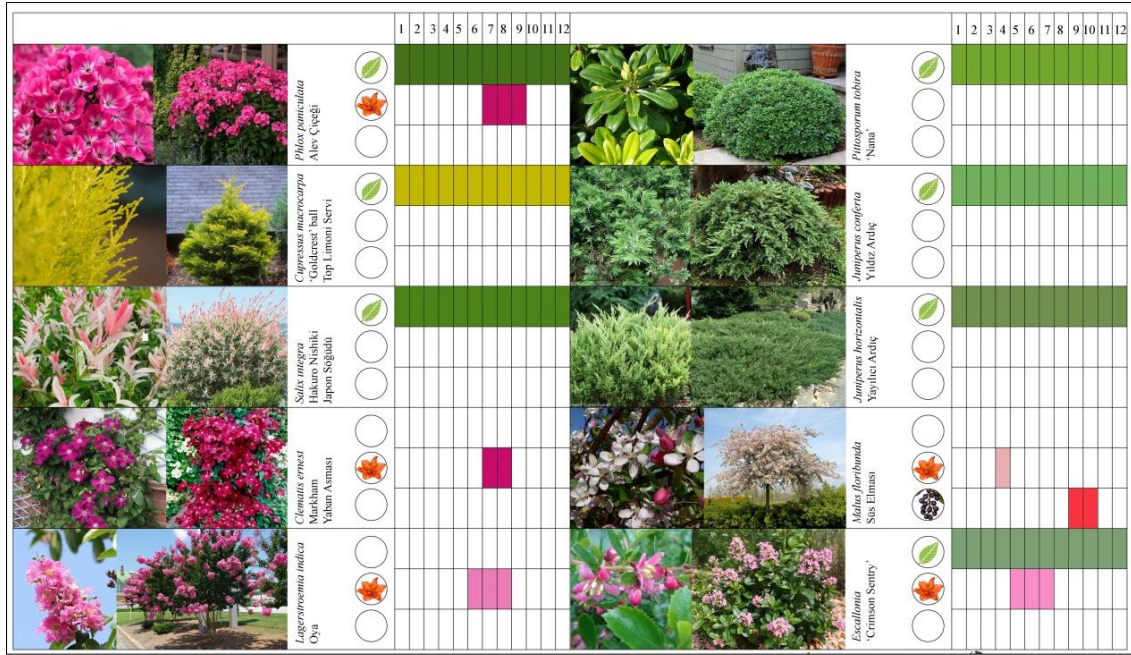


Fig. 20. The status of the color characteristics of the plants used in Figure 19 according to the months (leaves, flowers, fruits, respectively)

Green color is used intensely in planting designs with polychrome color effect. Green is the dominant color of nature and spring. It creates a sense of calmness, peace and confidence. It emphasizes life, vitality and creativity. It is the first item that appears in memory in memories of places and spaces lived in the past. With the effect of creating a healthy and peaceful feeling in the area where it is used, it is suitable for use in hotels, workplace gardens, eating and drinking and sports areas [12,13,14].

The views of the planting design plans are given in Figure 21.

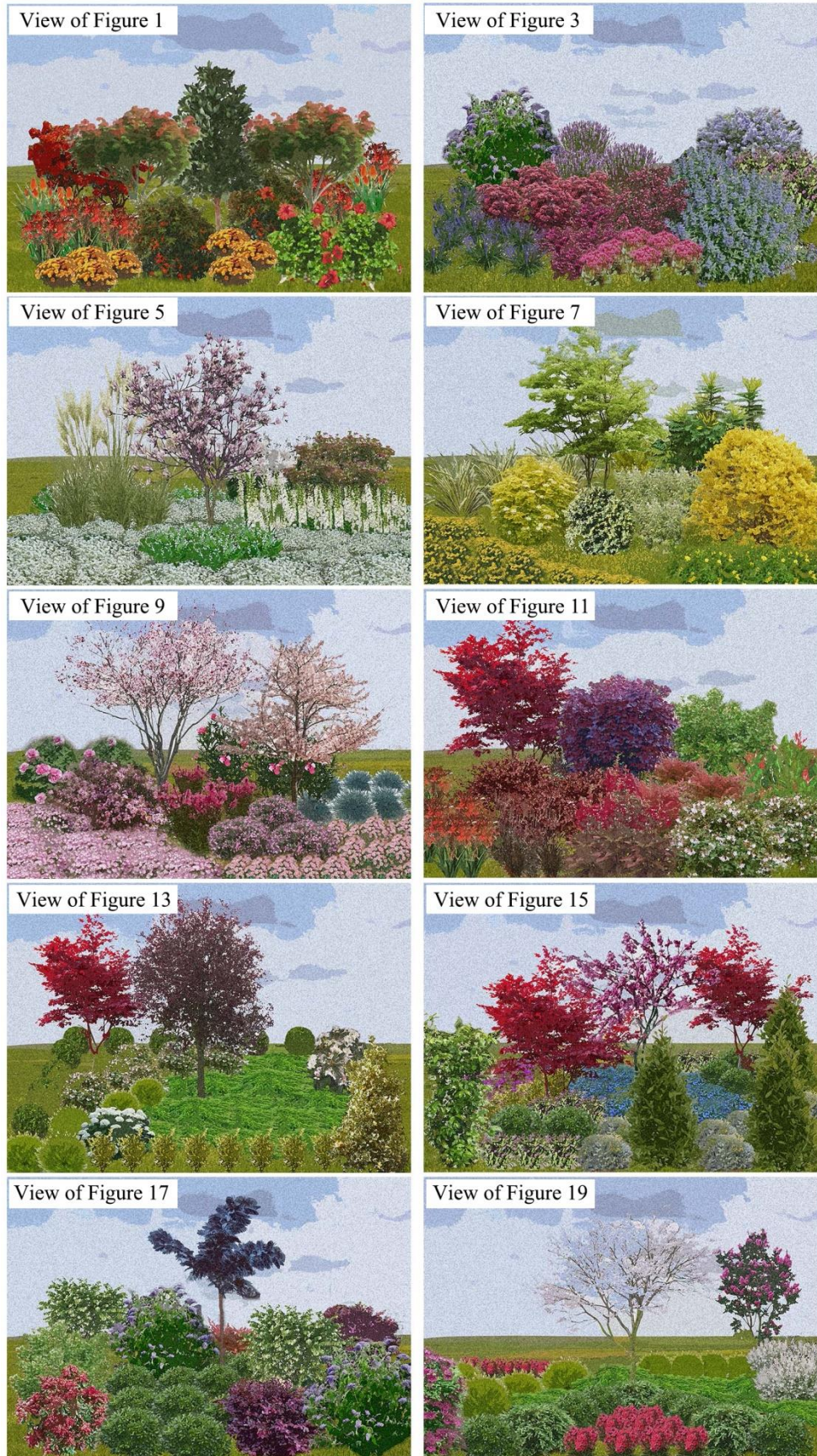


Fig. 21. Views of the planting design plans

CONCLUSION

This study emphasized the importance of color in design by addressing the phenomenon of color in planting design studies. Because color and its effects can directly affect the soul. While choosing the plant, besides the temporary flower characteristics, the permanent characteristics of leaves, branches and bark should also be taken into account. There are plants with leaves of all shades of green, golden yellow, bronze, silver, red and purple, as well as plants with branches and stems in yellow, green, red and brown tones. Plants with various colors should be used throughout the year to create a visual effect. Although the spaces chosen for the planting design consist of a balcony with a few flower pots or a few plant beds, the proposed plants can be used to form integrity with the environment. A composition using interrelated colors in a small space will be able to show the space more orderly [10].

It should be known in which periods the flowering or leaf-fruit coloration of the selected flowering plants occur, and in which periods the stem characteristics emerge by being leafless, and these situations should be paid attention to in the compositions created. Conditions such as flowering, leaf and fruit coloration, and the emergence of stem characteristics in plants can directly affect the users and the use of the space. By paying attention to the dimensions and effects of colors in planting design, colors that are suitable for the function and characteristics of the space should be chosen.

In this study, the coloration phenomenon in planting design studies was handled and examples of planting design plans suitable for the climate of Bursa were made. By taking these designs as examples, designs with different color effects can be made throughout the year. Considering the effects of colors on the viewer, attention should be paid to color selection. These design examples can be reproduced according to the function and feature of the space or the request of the audience.

It has been concluded that designs with different color characteristics gain importance according to the different situations of individuals in spaces used for long periods or recreation [7].

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