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EVALUATING THE LANDSCAPE VALUE AND USE OF ORNAMENTAL PLANTS GROWN IN MADINATY CITY, CAIRO GOVERNORATE, EGYPT

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ABSTRACT: In landscaping, ornamental plants (trees, palms, shrubs, climbers, herbaceous plants, succulents and cacti plants and ground covers) are regarded as essential plant resources. Ornamental and landscape plants play a significant role in human existence. They add beauty and shade to lengthy streets in city gardens, homes, workplaces, schools and marketplaces. This study location under review situated between latitude (30°08'44°N) and (31°63'77"E), it was built on an 8,000 feddan land area. This survey study was done throughout the period of 20th April of 2023 to 28th August 2024. As a result of the study, totally 21 trees species contained 7 vegetate growth types and 14 flowering types were recorded. *Ficus bengamina, Jacaranda mimosifolia, Cassia nodosa, Cassia fistula* and *Peltophorum africanum* had the highest landscape values and uses among different surveyed trees. A total of 10 palm species included 7 Pinnate-leafy types and 3 palmate-leafy types. *Phoenix dactylifera* palm had three landscape uses and five landscape values. The different specie types of shrubs in this study were 25 species. The flowering type was the highest one which reached 11 species. A total of 21 ground cover species surveyed in this study there were 11 of flowering type, 6 of colorful leaves type and 4 of green soil cover types were recorded. *Rosa hybrida* as ground cover had four landscape uses and eight landscape values. From this study, it was found that there is diversity in the use of ornamental plants in the landscape of Madinaty city.

Key words: Madinaty gardens, landscaping, ornamental plants, landscape use and value.

INTRODUCTION

Plants chosen for garden cultivation largely for their aesthetic qualities are known as ornamental plants. These plants are grown in a wide range of locations, and many of their parts -such as; their flowers, leaves, aroma, overall texture of the foliage, fruit stem and bark - are used for aesthetic purposes (**Osawaru *et al.*, 2014**). By using plants and space as its primary tools, ornamental horticulture aims to integrate people, buildings, and sites in a way that is both functional and aesthetically pleasing. According to **Baiyewu *et al.* (2005)**, it is essential to landscape architecture to positively govern the rapidly changing environment for the future. According to **Dilaver (2013)**, plant species may play significant roles in creating oxygen, storing carbon, managing rainfall, preventing floods, and influencing the local and global climate.

To provide an effective process of cost management of the facilities and systems, the ornamental plants chosen for landscape design should be of superior quality and able to respond to the environmental conditions in the area to be farmed (**Irmak, 2013**). Trees, palms, shrubs, climbers, bulbs, cacti, succulents, and ground covers are the most used soft cape elements. These plants are evaluated based on how well they appeal to customers as garden or potted plants or as cut material. Because of this, ornamental plants need to meet certain aesthetic standards (**Abdelnaby *et al.*, 2021**).

Different gardens may use different techniques for evaluating plants. The majority relies on a subjective evaluation system in which one or a small number of qualified horticulturists evaluate particular plants according to their knowledge (**Anderson, 2006**). Several researches have been

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conducted to estimate the aesthetic value and use in landscape gardening for ornamental plants (**Irmak and Yilmaz, 2008; Seyidoğlu, 2009; Dönmez, 2016; Surat and Eminağaoğlu, 2018; Abdelnaby *et al*., 2021; Abou Dahab *et al*., 2023**).

The main aim of this study was to survey and evaluate the landscape use and value of ornamental plants grown in the study area. Beside, to identify the ornamental plants had grown in Madinaty city region and determine the extent of plant diversity in it.

MATERIALS AND METHODS

The present study was conducted from 20th of April, 2023, to 28th of August, 2024, in Madinaty city (Fig. 1), which located in the Cairo Governorate, Egypt, to examine the use and value of ornamental plants. The study site under consideration is located between latitudes 30°08°44°N and 31°63'77"E. About thirty visits were made every ten days to survey the ornamental plant groups grown there in order to classify them according to their use and values for landscaping propose. Thus, the following data were collected.

Location Soil and Water Analyses

To simulate soil analyses, 30 cm samples of surface soil were gathered from several locations at Madinaty Gardens, Cairo Governorate, Egypt. The collected soil samples were examined in a scientific agricultural analysis laboratory (Merwad LAB) in Zagazig City, Sharkia Governorate, Egypt, according to the method described by **Chapman and Pratt (1978)**. Additionally, the same facility was used to examine irrigation water. Table 1 displays the results of the soil analysis, both chemical and physical. Also, Table 2 shows the irrigation water analysis.

Landscape Value and Use

A different evaluation approaches are selected based on landscape and aesthetic value (derived from **Irmak (2013) and Dönmez (2016)** selected parameters are listed below:

1. Form beauty: the organic arrangement of branches and plant structure.
2. Ornamental foliage: the size, color, and shape of the leaves that is visually appealing during the growing season and in the fall.
3. Fruit trees: fruit that is appealing in terms of size, shape, and color.
4. Ornamental flowers: In terms of florescence number, structure, and sequence, these flowers can be used in landscape architecture.
5. Fragrance: Fruits, flowers, and leaves all concretely have a pleasant aroma.

Plant species that are already in use or have additional possible uses in the landscape were the basis for evaluation.

RESULTS AND DISCUSSION

Landscape Value and Use of Trees and Palm

For landscape value of surveyed trees and palms, form ornamental foliage, beauty, flowers and fruit and fragrance traits were taken into count. Plants revealing the parameters of aesthetical value are signed by [√] as shown in Tables 3 and 4, the lowest four aesthetical value and use traits observed for tree species (*Ficus elastica* and *Ficus maclellandii*) while four species attractive for ten traits (*Jacaranda mimosifolia, Cassia fistula, Cassia nodosa* and *Peltophorum africanum*) as well as nine species have nine parameters (*Ficus nitida, Ficus bengamina, Melia azedarach, Erythrina caffra, Delonix regia, Cassia gluca, Brachychiton acerifolius, Bombax ceiba and Chorisia speciosa*). Moreover, *Phoenix dactylifera* had eight aesthetical values and uses traits as the highest pinnate-leafy palm in comparison with the other palm species under survey in Madinaty city location. Three palm genus are attractive for seven traits of landscape values and uses (*Oreodoxa regia, Cocos plumose* and *Wodyetia sp*). All palmate-leafy palm genus (*Chemaeropus humils, Sabal palmetto* and *Washigtonia filifera*) had six landscape value and use traits.

The natural ecosystems hold important plant genetic resources of endemic and threatened wild trees and ornamental plant relatives (**George *et al*., 2011**). Moreover, **El-Shanhorey (2022)** reported that plant groups planted in the

Figure 1. Location map of Madinaty city, Cairo Governorate, Egypt

Table 1. Physical and chemical properties of experimental soil

Physical analysis			Soil texture
Clay (%)	Silt (%)	Sand (%)	Sandy
2.07	6.33	91.6	

Chemical analysis											
pH	E.C. dSm^{-1}	Organic matter (%)	$CaCO_3$ (%)	Soluble cations (meq./ L)				Soluble anions (meq. /L)			
				Ca^{++}	Mg^{++}	Na^{+}	K^{+}	CO_3^{--}	HCO_3^{-}	Cl^{-}	SO_4^{--}
8.02	1.0	0.19	2.75	5.72	4.91	3.40	0.97	0.00	5.62	5.75	3.63

Available nutrient (mg kg^{-1}soil)						
N	P	K	Fe	Zn	Cu	Mn
24.5	11.7	89.2	1.06	0.59	0.64	0.49

Table 2. Analysis of irrigation water

E.C. (dS/m)	E.C. (ppm)	pH	Salinity	Chloride classification
0.99	634	7.79	C3, medium	Low, Safe

Soluble and Cations and Anions, mmole/L							
Ca^{++}	Mg^{++}	Na^{+}	K^{+}	Cl^{-}	CO_3^{--}	HCO_3^{-}	SO_4^{--}
4.09	4.60	0.67	0.54	1.30	0.0	4.90	3.70

Quality parameters of water									
B (mg L^{-1})	Fe, (mg L^{-1})	NO_3-N (mg L^{-1})	SSP (%)	SAR	SCAR	SAR/SCAR	RSC	RSBC	USDA Class
0.24, (Low, safe)	0.33, (Low, safe)	1.06, (Low, safe)	6.7	0.31 (S1, low)	0.32	0.95	22 (No hazard)	26	C3S1

Table 3. Landscape value and use of surveyed tree species at Madinaty Gardens, Cairo Governorate, Egypt during 2023/ 2024 years

Tree species	Landscape value										Landscape use									
	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Hedge	Shade	Specimen	Screening	Wind break	Avenue	For flowering	City street	Group planting	Topiary feature	Containers	Foundation	Barrier	Rock gardens	Houseplant
A. Vegetative leafy trees																				
Ficus nitida	√	√					√	√			√		√		√		√	√		
Ficus bengamina	√	√				√	√	√	√		√		√		√		√			
Ficus microcarpa(cv.hawaii)	√	√					√	√			√		√		√		√			
Ficus elastica	√	√						√							√					√
Ficus maclellandii	√	√						√							√					√
Ficus elstica	√	√						√							√		√			
Dalbergia sisso	√	√						√					√		√					
B. Flowering trees																				
Melia azedarach	√	√	√				√	√			√	√	√		√					
Erythrina caffra	√	√		√			√	√			√	√	√		√					
Callistemon viminalis	√	√		√				√				√	√		√		√			
Delonix regia	√	√		√			√	√			√	√	√		√					
Jacaranda mimosifolia	√	√		√			√	√			√	√	√		√		√			
Cassia nodosa	√	√		√			√	√			√	√	√		√		√			
Cassia fistula	√	√		√			√	√			√	√	√		√		√			
Cassia gluca	√	√		√			√	√			√	√	√		√					
Brachychiton acerifolius	√	√		√			√	√			√	√	√		√					
Bauhinia purpurea	√	√					√	√			√		√		√					
Peltophorum africanum	√	√		√			√	√			√	√	√		√		√			
Bombax ceiba	√	√		√			√	√			√	√	√		√					
Chorisia speciosa	√	√		√			√	√			√	√	√		√					
Olea europaea	√	√			√			√							√					

Table 4. Landscape value and use of surveyed palm species at Madinaty Gardens, Cairo Governorate, Egypt during 2023/ 2024 years

Palm species	Landscape value										Landscape use									
	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Hedge	Shade	Specimen	Screening	Wind break	Avenue	For flowering	City street	Group planting	Topiary feature	Containers	Foundation	Barrier	Rock gardens	Houseplant
A. Pinnate-leafy palm																				
Phoenix dactylifera	√	√	√					√			√		√		√		√			
Areca lutescens	√	√						√					√		√		√			
Caruota mitis	√	√						√							√		√			
Chamaedorea elegans	√	√						√					√		√		√			
Phoenix dactylifera	√	√	√					√			√		√		√		√			
Oreodoxa regia	√	√						√			√		√		√		√			
Cocos plumosa	√	√						√			√		√		√		√			
Wodyetia palm	√	√						√			√		√		√		√			
B. Palmate-leafy Palm																				
Chamaerops humilis	√	√						√			√		√		√					
Sabal palmetto	√	√						√			√		√		√					
Washingtonia filifera	√	√						√			√		√		√					

Antoniadis garden are of high landscape value due to the high age and the few numbers in Alexandria city, for example, *Syzygium cumini, Ficus religiosa, Ficus macrophylla,* and *Ficus benghalensis*.

Landscape Value and Use of Shrubs and Climbers

As shown in Tables 5 and 6, the surveyed shrubs were classified into four groups (flowering shrubs, shrubs with white+yellow + green mottled leaves, shrubs with red mottled leaves and shrubs with green leaves). The highest landscape uses of flowering shrubs (eight uses) were noticed for *Clerodendron inerme* plant. While, the lowest uses number (five uses) were detected with *Hibiscus mutabilis, Hibiscus rosa-sinensis* and *Hibiscus schizopetaus* species. All shrubs with white or yellow/green mottled leaves (*Pittosporum tobira* var. *variegata, Duranta plumeri* var. *variegata, Schefflera arboricola* and *Acalypha wilkesiana*) had two landscape values only (form beauty and ornamental foliage). *Acokanthera spectabilis* and *Vitex agnus-castus* shrubs recorded eight landscape values and uses as the highest number compared to the other ones under study (Table 5). *Cestrum nocturnum* found to has three landscape values and four landscape uses. Total climbers number in the study location was five species only (*Bougainvillea glabra, Jasminum humile, Jasminum grandiflorum, Dolichos lablab and Clerodendrum splendens*). *Bougainvillea glabra* had three landscape values and nine uses. The lowest landscape use of climbers wasobserved with *Dolichos lablab* and *Clerodendrum splendens* which had six uses compared to the other climbers under survey study during 2023 and 2024 years (Table 6). **Pravina *et al.* (2022)** indicated the flowers of most plants have the most attractive potential, although some species also have beautiful fruits and leaves.

Landscape Value and Use of Cactus and Succulent Plants

A total of nine cacti and succulent genera were observed throughout this survey at Madinaty city, Cairo Governorate, Egypt. *Euphorbia milii* had the highest landscape values (three values) and landscape use (six uses) compared to the other species under study. This means that this plant has a high landscaping value in landscaping buildings and public parks in the study location (Table 6). *Agave americana marginata, Agave sisalana, Aloe vera, Aloe saponaria, Echeveria elegans* and *Echinocactus grusonii* had three landscape uses and three landscape values. **Osawaru *et al.* (2014)** pointed out that in town gardens landscape designers use herbaceous succulent as habit and bedding plants.

Landscape Value and Use of Ground Cover Plants

A total of 21 ground cover species included 11 flowering types, 6 colorful leaf types and 4 green soil cover types were recorded. *Rosa hybrida* as ground covers had four landscape uses and eight landscape values (Table 7). Also, *Verbena venosa* had three landscape uses and eight landscape values. Whenever, *Petunia hybrida, Tagetes erecta, Zinnia elegans, Lantana camera, Pelargonium sp., Vinca rosea* and *Gazania splendens* had four landscape value and six landscape use (specimen, for flowering, group planting, topiary feature, containers fill, foundation planting). All colorful leaves of ground covers had three landscape values (form beauty, ornamental foliage and ornamental flowers). *Alternanthera sp* and *Duranata erecta* had higher landscape use numbers compared to the other colorful leaves of ground covers under study. *Portulaca gradiflora* as green ground covers had four landscape values and six landscape uses. On the other hand, *Sesuvium portulacastrum* had the lowest landscape value (form beauty and ornamental foliage only) and six landscape uses (specimen, group planting, topiary feature, containers fill, foundation planting and house plant). Ornamental plants can also be utilized as cover mat on eroded areas, they reduce heat buildup and noise pollution, glare and air pollution as well as they help in eliminating dust (**Baiyewu *et al*., 2005**).

In addition, **Duong and Vuong (2020)** Surveyed and analyzed of flowers and ornamental plants at some nurseries in Ho Chi Minh City, they found 7 important ornamental plant groups such as the shape of the tree, tree trunks, leaves and flower groups, the bonsai pots for interior display, with large leaves, dark green to light green colors, large flowers, no fragrance is common and height from 0.1 to 1 m.

Table 5. Landscape value and use of surveyed shrub species at Madinaty Gardens, Cairo Governorate, Egypt during 2023/ 2024 years

Shrub species	Landscape value							Landscape use												
	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Hedge	Shade	Specimen	Screening	Wind break	Avenue	For flowering	City street	Group planting	Topiary feature	Containers	Foundation	Barrier	Rock gardens	Houseplant
A. Flowering Shrubs																				
Jatropha curcas	√	√		√	√			√			√	√	√		√		√			
Nerium oleander	√	√		√				√			√	√	√		√		√			
Hibiscus mutabilis	√	√		√							√	√		√	√		√			
Hibiscus rosa-sinensis	√	√		√							√	√		√	√		√			
Hibiscus schizopetaus	√	√		√							√	√		√	√		√			
Plumbago capensis	√	√		√				√			√		√		√		√			
Clerodendron inerme	√	√						√	√		√	√		√	√	√	√			
Lagerstroemia indica	√	√		√	√			√			√	√	√		√		√			
Tecoma stans	√	√		√	√			√			√	√	√		√		√			
Tecomaria capensis	√	√		√	√						√	√		√	√	√	√			
Plumeria alba	√	√		√	√			√			√	√	√		√		√			
B. Shrubs with mottled leaves (white-yellow-green)																				
Pittosporum tobira variegata	√	√						√						√	√	√				√
Duranta plumeri variegata	√	√												√	√	√	√			
Schefflera arboricola	√	√						√						√	√	√				√
Acalypha wilkesiana	√	√												√	√	√	√			
C. Shrubs with red mottled leaves																				
Acokanthera spectabilis	√	√						√				√		√	√	√	√			
Acalypha wikesiana	√	√						√				√			√		√			
Phyllanthus nivosus	√	√						√							√		√			
Codiaeum variegatum	√	√						√						√	√	√	√			
Vitex agnus-castus	√	√						√			√		√	√	√		√			
D. Shrubs with green leaves																				
Pittosporum tobira	√	√						√							√	√				√
Duranta plumeri	√	√												√	√		√			
Schefflera actinophylla	√	√						√							√	√				√
Myoporum sorratum	√	√							√					√	√		√			
Cestrum nocturnum	√	√			√			√							√	√	√			

Table 6. Landscape value and use of surveyed climbers and cactus and succulent plant species at Madinaty Gardens, Cairo Governorate, Egypt during 2023/ 2024 years

Plant species	Landscape value							Landscape use												
	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Hedge	Shade	Specimen	Screening	Wind break	Avenue	For flowering	City street	Group planting	Topiary feature	Containers	Foundation	Barrier	Rock gardens	Houseplant
Climbers																				
Bougainvillea glabra	√	√		√		√	√	√	√	√		√			√		√	√		
Jasminum humile	√	√		√	√	√		√	√			√		√	√		√			
Jasminum grandiflorum	√	√		√	√	√		√	√			√		√	√		√			
Dolichos lablab	√	√	√			√		√	√					√	√		√			
Clerodendrum splendens	√	√		√		√		√	√			√			√		√			
Cactus and Succulent Plants																				
Agave Americana marginata	√	√						√							√	√			√	
Agave sisalana	√	√						√							√	√			√	
Aloe vera	√	√						√							√	√			√	
Aloe saponaria	√	√						√							√	√			√	
Echeveria elegans	√	√						√							√	√				√
Echinocactus grusonii	√	√						√							√	√			√	
Sansevieria trifasciata	√	√						√							√	√	√			√
Euphorbia milii	√	√		√				√				√			√	√	√		√	
Aloe barbadensis	√	√						√							√	√			√	√

Table 7. Landscape value and use of surveyed ground cover species at Madinaty Gardens, Cairo Governorate, Egypt during 2023/ 2024 years

Ground covers species	Landscape value										Landscape use									
	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Hedge	Shade	Specimen	Screening	Wind break	Avenue	For flowering	City street	Group planting	Topiary feature	Containers	Foundation	Barrier	Rock gardens	Houseplant
A. Flowering ground covers																				
Petunia hybrida	√	√		√	√			√				√		√	√	√	√			
Tagetes erecta	√	√		√	√			√				√		√	√	√	√			
Zinnia elegans	√	√		√	√			√				√		√	√	√	√			
Lantana camara	√	√		√	√			√				√		√	√	√	√			
Pelargoniam sp.	√	√		√	√			√				√		√	√	√	√			
Vinca rosea	√	√		√	√			√				√		√	√	√	√			
Gazania splendens	√	√		√	√			√				√		√	√	√	√			
Chrysanthemum morifolium	√	√		√				√				√		√	√	√	√			
Verbena venosa	√	√		√			√	√	√			√	√	√		√	√			
Rosa bybrida	√	√		√	√		√	√	√			√	√	√		√	√			
Euryops pectinatus	√	√		√			√	√	√			√		√		√	√			
B. Colorful leaves ground covers																				
Centaurea cineraria	√	√		√				√						√	√	√	√			
Tradescantia spathacea	√	√		√				√						√	√	√	√			
Santolina chamaecyparissus	√	√		√				√						√	√	√	√			
Alternanthera sp.	√	√		√				√	√					√	√	√	√			
Duranta erecta	√	√		√				√	√					√	√	√	√			
Chlorophytum comosum	√	√		√				√						√	√	√	√			
C. Green ground covers																				
Portulaca gradiflora	√	√		√	√			√				√		√	√	√	√			
Mesembryanthemum sp.	√	√		√				√				√		√	√	√	√			
Carissa sp.	√	√		√				√	√			√		√	√	√	√			
Sesuvium portulacastrum	√	√						√						√	√	√	√			√

Conclusion

Finally, soil of experimental location has low fertility, so ornamental plants need a good balanced fertilization program (mineral, organic, biological fertilizers) according to the type of plant group. Also, irrigated water (as found from water analysis) is suitable for irrigating all surveyed ornamental plants, as its salinity is low and the percentage of sodium and chloride is low and did not cause any problems to the experimental soil. As well as there is a necessity to conduct such studies to identify the plant diversity in Egyptian gardens and how to improve their coordination uses.

REFERENCES

Abdelnaby, A.S.I., A.A. Mewead, A.S.H. Gendy and M. A. I. Abdelkader (2021). Landscape use and aesthetical value of surveyed woody ornamental plants in Cairo Festival City – Cairo, Egypt in landscape gardening. Plant Archives, 21 (1): 116-122.

Abou Dahab, T.A.M., H.A. Ashour, M.A.I. Abdelkader and K.S.E.A. Awad (2023). An overview of the ornamental and herbaceous plants in the central ZED Park located in Al Sheikh Zayed City, Giza Governorate, Egypt. Int. J. Chem. and Biochem. Sci., 24 (11): 204 - 212.

Anderson, O.N. (2006). Flower Breeding and Genetics: Issues, Challenges and Opportunities for the 21st Century. Springer Science and Business Media, 822.

Baiyewu, R.A., N.A. Amusa and O. Olayiwola (2005). Survey on the use of ornamental plants for environmental management in Southwestern Nigeria. Res. J. Agric. and Biol. Sci., 1(3): 237-240.

Chapman, H. and P. Pratt (1978). Methods of Analysis for Soils, Plants and Waters. Div. Agric., Sci. Univ. Calif. USA, 16-38.

Dilaver, Z. (2013). Conservation of natural plants and their use in landscape architecture. In: Advances in Landscape Architecture, M. Ozyavuz (ed), IntechOpen, 885-904.

Dönmez,, Ş. (2016). Uses of some medicinal and aromatic plants in the landscape architecture grown in the lakes district. Int. J. Advanced Res., 4 (8): 30-36.

Duong, T.T.M. and T.T. Vuong (2020). Survey and analysis of flowers and ornamental plants at some nurseries in Ho Chi Minh City according to criteria for garden design. J. Agric. and Dev., 19 (2): 59-68.

El-Shanhorey, N.A. (2022). Surveying and documenting of the cultivated plants and evaluation of air pollution in historical gardens in Alexandria, Egypt (B) Antoniadis garden. Scientific J. Flowers and Ornamental Plants, 9 (2):133-151.

George, P., C. Arekar and D. Subhashini (2011). Biodiversity survey of trees and ornamental plants in Karunya University, Coimbatore, India. Int. J. Biodiv. and Conserv., 3 (9): 431 – 443.

Irmak, M.A. (2013). Use of native woody plants in urban landscapes. J. Food, Agric. and Environ., 11 (2): 1305-1309.

Irmak, M.A. and H. Yilmaz (2008). Determination of the usability of woody plant species in Tortum-Creek Watershed for functional and aesthetical uses in the respect of landscape architecture. Biol. Divers. and Conserv., 1 (1): 1-12.

Osawaru, M.E., M.C. Ogwu and D. Aigbefue (2014). Survey of ornamental gardens in five local government areas of Southern Edo State Nigeria. The Bioscientist, 2 (1): 87- 102.

Pravina, M.J., E. Santhiya, D.C. Anushiya, B. Parthipan, R. Mahesh, K. Petchimuthu and A.M. Rashida Banu (2022). A survey on ornamental plants of Karungal region, Kanyakumari district, Tamil Nadu, India. Int. J. Food and Nutr. Sci., 11 (8): 6609-668.

Seyidoğlu, N. (2009). Researches on the usage and production of some geophytes in landscape regulations. Ph. D. Thesis, Istanbul Univ., Inst. Sci. and Technol., Istanbul.

Surat, H. and Ö. Eminağaoğlu (2018). Determination of the aesthetical and functional use of certain natural plants in Hatila valley national park in landscape architecture. Int. J. Ecosystems and Ecol. Sci., 8 (1): 113-134.

تقييم استخدام وقيمة نباتات الزينة التنسيقية في مدينة مدينتي، محافظة القاهرة، مصر

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تعتبر نباتات الزينة (الأشجار، النخيل، الشجيرات، النباتات المتسلقة، النباتات العشبية، النباتات الشوكية والعصارية ومغطيات التربة) من العناصر النباتية الأساسية، في مجال تنسيق الحدائق. تلعب نباتات الزينة في تنسيق الحدائق دورًا مهمًا في حياة الإنسان. فهي تضيف الجمال والظل إلى الشوارع الطويلة في حدائق المدن والمنازل وأماكن العمل والمدارس والأسواق. يوجد الموقع قيد الدراسة بين خط العرض (30°08°44° شمال) و (31°63'77" غرب)، وقد اقيم على مساحة 8000 فدان. أجريت دراسات المسح هذه خلال الفترة من 20 أبريل عام 2023 إلى 28 أغسطس عام 2024. ونتيجة للدراسة، تم تسجيل 21 نوعًا من الأشجار تتضمن 7 أنواع من الأشجار ذات النمو الخضري و 14 نوعًا من الأشجار المزهرة. كان لأشجار الفيكس بينجامينا والجاكرندا ميموسيفوليا والكاسيا نيدوزا والخيار شمبر والبلتوفورم افريكانوم أعلى قيمة واستخدام في تنسيق الحدائق في منطقة الدراسة. أيضاً، من بين 10 أنواع من النخيل تم حصر 7 أنواع من ذات أوراق ريشية و 3 أنواع من النخيل ذات أوراق مروحية. كان لنخيل البلح ثلاثة استخدامات للتنسيق وخمس قيم تنسيقية في الحدائق. كان عدد الأنواع المختلفة من الشجيرات 25 نوع وكانت الأنواع المزهرة هى الأكثر حيث وصلت إلى 11 نوعًا. احتوت المدينة على 21 نوعًا من مغطيات التربة منها 11 نوعًا من مغطيات التربة المزهرة، تم تسجيل 6 أنواع من المغطيات ذات الأوراق الملونة و4 أنواع من مغطيات التربة خضراء الأوراق، أما نباتات الورد كمغطي للتربة فكان لها 4 استخدامات في تنسيق الحدائق و8 قيم لتنسيقيه، ومن خلال هذه الدراسة تبين أن هناك تنوع في استخدام نباتات الزينة في التنسيق بحائق مدينة مدينتي.

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