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An overview of the ornamental and herbaceous plants in the central

ZED Park located in Al Sheikh Zayed City, Giza Governorate, Egypt

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Abstract

It is possible to achieve good plant utilization in public gardens by utilizing the right plant in the right location. In order to ascertain the purposes and landscaping values of the ornamental and herbaceous plants found in Al Sheikh Zayed City, Giza Governorate, Egypt, between 2020 and 2021, a survey of these plants was carried out. The current study established to determine the aesthetical values parameters as form beauty, ornamental foliage, ornamental fruit, ornamental flowers, and fragrance. While, the existing and potential uses of these plants were utilized to record the landscape uses. As a result of the study, totally 152 plant species belong to 49 families were recorded and they follow trees (33%), shrubs (19%), large shrubs (6%), palms (5%), succulents (6%), vines (6%) and ground covers (25%). From surveying work, it has been found that *Bougainvillea stans* X-Butiana, *Duranta plumieri, Lonicera japonica* and *Euphorbia miliiare* attractive for eight parameters of landscape use. *Albizia Lebbeck, Anisacanthus vulgar, Antigonon Leptopus, Azadirachta indica, Bombax Ceiba, Chorisia speciosa, Callistemon viminalis, Punica granatum, Vitex Agnus- castus* and *Gleditsia triacanthos* detected to be in three different aesthetical value.

Keywords: Ornamental plants, Landscape use, Aesthetical value, ZED Park.

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1. Introduction

All over the world, increasing population and growing urbanization raise the significance of public as well as private gardens, while the preservation of natural resources near the cities and the servicing of environmental balance become a major demand. It is possible to improve alternative solutions to eliminate different visual contaminations utilizing soft scape (ornamental plants), which is one of the serious landscape design elements especially in urban spaces [1].

In the realm of landscaping, ornamental plants (such as trees, palms, shrubs, climbers, herbaceous, succulents, cactus and lawns) and aromatic plants are regarded as essential plant components. Ornamental and landscape plants play a significant role in human existence [2].Ornamental plants are considered as non-traditional horticultural crops with outstanding economic return, where production is available throughout the year which allows that Egypt occupies a privileged position on the global map [3]. Ornamental and aromatic plants contribute to the urban environment in various ways, for example minimizing releasing moisture, air pollution, conserving energy through balancing temperatures and providing habitats for flora and fauna [4]. Plants also reduce the negative influences of dust, greenhouse gases and wind [5], as well as noise control [6] and decrease light reflection [7], in addition to positive functions such as conditioning waste areas, preventing soil erosion and soil amelioration in order to landscape restoration [8]. Also, plants and plantations are among the main areas of work in landscape architecture.

Ornamentals include woody (palms, trees, vines and shrubs), succulent and cactus plants, herbaceous (perennials, bi-annuals and annuals) and aquatic and semi-aquatic plants as well as lawns. These plants are estimate by their capability to satisfy the eye of consumers as pot or garden plants or when sold as cut flowers. For these purposes, ornamental and aromatic plants must achieve aesthetic criteria in demand. Furthermore, medicinal plants can be considered in several areas such as beverage, soap, medicine industry, perfume, toothpaste, cosmetic, spices, essence and tea. It utilized both for ornamental and for benefit in the traditional houses and gardens. These days, medicinal plants are included at many of thematic parks and they are concerned by the humanity [9].

The study area (ZED Park) is one of these expansions. In recent decades, urban expansion has drawn people from the valley and delta regions. New residential neighborhoods have emerged with their lovely designs and gardens. Determining the aesthetic value and landscape application of woody ornamentals surveyed in ZED Park located in Al Sheikh Zayed City, Giza Governorate, Egypt is the goal of this study.

2. Materials and Methods

Study groups included ornamental and herbaceous plants that grown in ZED Park (Fig. 1) located in Al Sheikh Zayed City, Giza Governorate, Egypt, during 2020 and 2021. The study location under review situated between latitude (30°02'40.0"N) and (30°59'44.6"E). The large park at the center of the project area, known as the ZED area, serves as the focal point and extends throughout the development in a network of connected courtyards, providing ample, private, and planted open spaces for all residents. The master plan incorporates mixed-use, retail, and entertainment purposes, transforming the area from a residential suburb into a new urban quarter.

2.1. Evaluation methods:

In the scope of the study, (trees, palms, shrubs, woody vines and aquatic plants) and herbaceous plants grown in ZED Park were listed depending on field visits. Data about the plant materials was obtained through observations and with the help of horticultural experts.

Herbaceous and ornamentals plants grown in ZED Park, including trees, palms, shrubs, woody vines aquatic and flowering plants, were included in the study's scope based on five visits. Through observations and with the assistance of horticulture specialists, information about the plant materials was gathered.

- A. The evaluation of plant species was focused on their current or projected usefulness in the landscape.
- B. An alternative approach to evaluation relied on aesthetic and landscape values, drawing inspiration from [10] and [9].
 - 1. Form beauty: natural plant shape and branches sequence.
 - 2. **Ornamental foliage:** leaf color, shape and size, its being attractive in vegetation period and in autumn.
 - 3. **Ornamental fruit:** its being attractive in terms of structure, size and color.
 - 4. **Ornamental flowers:** Suitable for using in landscape architecture in terms of florescence structure, number and sequence.
 - 5. Fragrance: Leaf, flower and fruits having a nice scent concretely.

3. Results and Discussion

3.1. Families and species count

It was recorded as a result of the current survey that totally 152 ornamental plant species belonging to 49 families are grown in ZED park gardens. The highest families in number of species were *Leguminosae* (28 *Awad et al.*, 2023 species), *Asteraceae* (14 species), *Aizoaceae* (6 species) and *Euphorbiaceae* (6 species). In addition, nineteen families had only one species for each, four families had two species for each, six families had three species for each, three families had four species for each, four families had five species for each and three families had six species for each (Table 1). In addition, Fig. 2 showed the distribution of surveyed species according to their plant groups as follows: trees (33%), shrubs (19%), large shrubs (6%), palms (5%), succulents (6%), vines (6%) and ground covers (25%).

3.2. Aesthetical/landscape value

For aesthetical value of surveyed species, form beauty, ornamental foliage, ornamental fruit and ornamental flowers and fragrance parameters were taken into consideration. Plants revealing the parameters of aesthetical value are signed by "+" as shown in Table 2. From surveying work, it has been found that *Bougainvillea stans* x-Butiana, *Duranta plumieri*, *Lonicera japonica* and *Euphorbia miliiare* attractive for eight parameters of landscape use. *Albizia Lebbeck, Anisacanthus vulgar, Antigonon Leptopus, Azadirachta indica, Bombax Ceiba, Chorisia speciosa, Callistemon viminalis, Punica granatum, Vitex Agnus-castus* and *Gleditsia triacanthos* detected to be in three different aesthetical values.

Moreover, the plants Spathiphyllum wallisii and Zantedeschia aethiopica remarkably contribute in the removal of pollutants in wastewater. Additionally, the use of ornamental plants, with commercial interest such as those evaluated, enables an added value to the Constructed Wetlands to be given, which can be used for flower production purposes on a larger scale and favor its acceptance within rural communities [11]. In addition, [1] indicated that, the importance of ornamental plant and their compositions in the solution of visual problems in urban environments in cold climatic conditions is emphasized. The potential of ornamental plants that can be used for this purpose in preventing visual pollution is given. In addition to the design group disciplines that are effective on planning or application basis in the city and its surroundings, the studies to be carried out in detail in terms of planting design as a discipline of Landscape Architecture can provide visual improvement. However, large and coniferous trees and shrubs are suitable plants for aesthetic and functional purposes in plant design studies for winter cities. Broadleaved trees; Acer campestre, Acer pseudoplatanus, Aesculus hippocastanum, are resistant to salt and are suitable for use as wind and snow curtains. From coniferous trees, Abies concolor and Picea pungens are suitable for creating snow and wind curtains. Fraxinus americana, Picea pungens, Symphoricarpus orbiculatus and Syringa vulgaris are suitable for use in winter cities because of their saltresistant plant species and their visual values.

3.3. Landscape use

Table 2 and Fig. 3 revealed that *Bougainvillea stans x-Butiana* (pink or white or yellow colors), *Duranta plumieri, Euphorbia milii, Lonicera japonica* are detected to be in eight different landscape uses, while, *Ficus benjamina* only is noticed in nine position for landscape uses, whereas *Antigonon Leptopus, Bougainvillea glabra, Ixora coccinea* (Pink Color), *Ixora coccinea* (white Color), *Lantana camara, Lantana montevidensis, Pittosporum tobira*,



Figure 1. Location of ZED Park, Al Sheikh Zayed City, Giza Governorate, Egypt

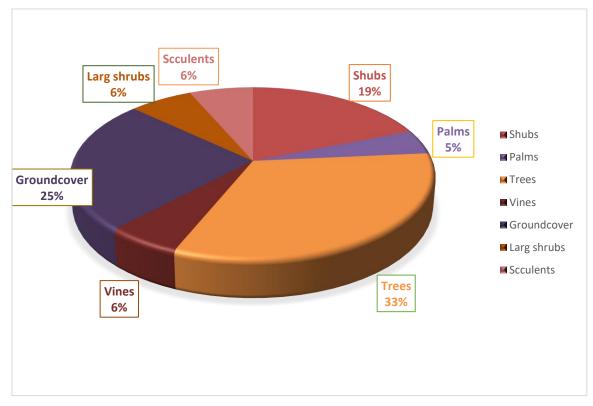


Figure 2. Percentage of surveyed species according their groups

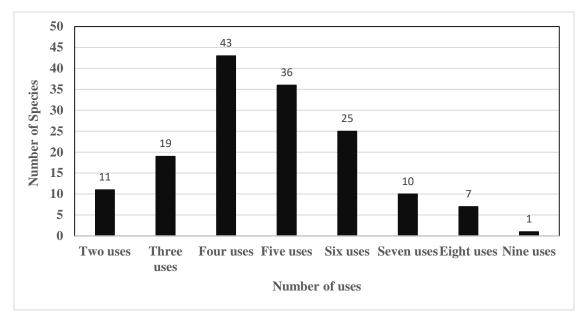


Figure 3. Relationship between number of species and the number of landscape uses

Families	Number of species	Families	Number of species	Families	Number of species	Families	Number of species	Families	Number of species
Asteraceae	14	Bignoniaceae	3	Geraniaceae	4	Phyllanthaceae	1	Scrophulariaceae	1
Acanthaceae	3	Bombacaceae	2	Leguminosae	28	Pittosporaceae	1	Solanaceae	1
Aizoaceae	6	Boraginaceae	1	Lamiaceae	5	Plumbaginaceae	1	Strelitziaceae	1
Amaranthaceae	2	Cactaceae	2	Lythraceae	4	Poaceae	3	Verbenaceae	6
Anacardiaceae	4	Caprifoliaceae	1	Malvaceae	1	Polygonaceae	1	Yuccaceae	1
Apocynaceae	3	Combretaceae	1	Meliaceae	3	Portulacaceae	1		
Araliaceae	1	Commelinaceae	1	Moraceae	5	Punicaceae	1		
Arecaceae	7	Convolvulaceae	1	Myrtaceae	3	Rubiaceae	5		
Asparagaceae	7	Crassulaceae	1	Nyctaginaceae	5	Rutaceae	1		
Asphodelaceae	1	Euphorbiaceae	6	Oleaceae	3	Sapindaceae	2		

Table 1: Distribution of evaluated species located in ZED Park gardens based on families

IJCBS, 24(11) (2023): 204-212

			Aest	hetical v			
Scientific Name	Family	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Landscape use
Acacia arabica	Fabaceae		+		+		7, 9, 18, 19,
Acacia farnesiana	Fabaceae				+	+	7, 9, 18, 19,
Acacia nilotica	Fabaceae		+		+		7, 9, 18, 19,
Acacia saligna	Fabaceae		+		+		1, 7, 9, 18, 19, 23,
Acalypha wilkesiana	Euphorbiaceae	+	+				11, 13, 14, 15, 17,
Agave americana	Asparagaceae	+	+				13, 16, 20,
Agave victoriae-reginae	Asparagaceae	+	+				16, 20,
Ageratum houstonianum (pink color)	Asteraceae	+			+		3, 9, 12, 15, 16, 20,
Ageratum houstonianum (Purple color)	Asteraceae	+			+		3, 9, 12, 15, 16, 20,
Albizia julibrissim	Fabaceae	+			+		9, 18, 19
Albizia lebbeck	Fabaceae	_	+		+	+	9, 18, 19
Alternanthera versicolor	Amaranthaceae	+	+				3, 6, 12, 22,
Anisacanthus vulgar	Acanthaceae	+	+		+		3, 9, 12,
Antigonon leptopus	Polygonaceae	+	+		+		2, 5, 8, 9, 10, 14, 20,
Aptenia cordifolia	Aizoaceae	_	+		+		6, 7, 9, 12, 20,
Asparagus Sprengeri	Asparagaceae	+	+				12, 20,
Atriplex Narrow	Amaranthaceae		+				2, 16
Azadirachta indica	Meliaceae	+	+		+		4, 18, 19,
Bauhinia variegata	Fabaceae		+		+		4, 9, 18,
Bombax ceiba	Bombacaceae	+	+		+		4, 9, 13, 19
<i>Bougainvillea stans x-Butiana</i> (Pink color)	Nyctaginaceae				+		2, 5, 9, 10, 14, 17, 19, 21
Bougainvillea stans x-Butiana (white color)	Nyctaginaceae				+		2, 5, 9, 10, 14, 17, 19, 21
Bougainvillea stans x-Butiana (Yellow color)	Nyctaginaceae				+		2, 5, 9, 10, 14, 17, 19, 21
Bougainvillea glabra	Nyctaginaceae				+		2, 5, 9, 10, 14, 17, 21
Bougainvillea stans X-Butiana (Orange color)	Nyctaginaceae				+		2, 5, 9, 10, 14, 17, 19, 21
Brahea armata	Arecaceae	+	+				13, 19,
Caesalpinia gilliesii	Fabaceae		+		+		2, 9, 13, 14, 19
Caesalpinia pulcherrima	Fabaceae		+		+		2, 9, 13, 14, 19
Calliandra haematocephala	Fabaceae		+		+		9, 13, 14, 17, 19
Callistemon viminalis	Myrtaceae	+	+		+		9, 11, 13, 16, 17, 19
Carissa grandiflora	Apocynaceae		+		+	+	2, 3, 9, 13, 14
Carpobrotus edulis	Aizoaceae		+		+		6, 7, 9, 12, 16,
Cassia Didymobotrya	Fabaceae		+		+		2, 9, 13, 22
Cassia fistula	Fabaceae		+		+		4, 9, 18, 19
Cassia Glauca	Fabaceae		+		+		1, 4, 9, 13, 18, 19,
Cassia nodosa	Fabaceae	+	+		+		1, 4, 9, 18, 19,
Cassia Spectabilis	Fabaceae		+		+		1, 4, 9, 18, 19,
Cassia tomentosa	Fabaceae		+		+		9, 13,
Cestrum aurantiacum	Solanaceae				+	+	9, 13, 14, 17, 19, 21
Chamaerops humilis	Arecaceae	+	+				17, 19
Chorisia speciosa	Bombacaceae		+		+	+	1,3 ,9 , 18,19,
Chrysanthemum Species	Asteraceae		+		+		9, 12, 15, 20,
Citrus sinensis	Rutaceae		+		+	+	9, 18, 19,
Codiaeum variegatum	Euphorbiaceae	+	+				12, 15, 20, 22,

Table 2: Distribution of evaluated species located in ZED Park gardens based on families

Awad et al., 2023

		T	Aest	hetical v			
		ty		_			
Scientific Name	Family	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Landscape use
Cuphea cyanea(Pink Color)	Lythraceae		+		+		9, 12, 15, 20,
Cuphea cyanea(Purple Color)	Lythraceae		+		+		9, 12, 15, 20,
delonix regia	Fabaceae	+		+	+		4, 9, 18, 19
Dimorphotheca Fruticosa(pink color)	Asteraceae		+		+		9, 12, 20,
Dimorphotheca Fruticosa(white color)	Asteraceae		+		+		9, 12, 20,
Dodonaea Viscosa	Sapindaceae		+				2, 3, 7, 14, 21,
Duranta plumieri	Verbenaceae		+				3, 9, 13, 14, 17, 19, 20, 21
Echinocactus grusonii	Cactaceae	+					13, 20,
Enterolobium cyclocarpum	Fabaceae		+				4, 9, 18, 19
Erythrina indica	Fabaceae		+		+		4, 9, 18, 19
Erythrina Lysistemon	Fabaceae		+		+		4, 9, 18, 19
Eugenia myrtifolia	Myrtaceae		+		+		2, 12, 14, 17, 20, 21,
Euphorbia candelabrum	Euphorbiaceae	+					2, 13, 15, 19, 20,
Euphorbia Lactea	Euphorbiaceae	+					2, 13, 16, 20,
Euphorbia milii	Euphorbiaceae		+		+		2, 3, 6, 9, 12, 16, 20, 22,
Euphorbia tirucalli	Euphorbiaceae	+					6, 12, 16, 20,
Euryops pectinatus	Asteraceae		+		+		2,3, 9, 12, 20, 22,
Festuca cinerea	Poaceae	+	+				6, 12, 20, 22,
Ficus benjamina	Moraceae	+	+				1, 4, 13, 14, 15, 17, 19, 20, 21
Ficus Infectoria	Moraceae		+				1, 4, 7, 18, 19,
Ficus maclellandii	Moraceae	+	+				13, 14, 15, 19, 20,
Ficus microcarpa	Moraceae		+				1, 7, 15, 18, 19, 20,
Ficus Religiosa	Moraceae		+				1, 4, 7, 18, 19,
Furcraea gigantea	Asparagaceae	+					13, 16, 20,
Gaillardia Pulchella	Asteraceae				+		13, 19
Gazania silver	Asteraceae		+		+		9, 12, 22,
Gazania splendens(white Color)	Asteraceae		+		+		9, 12, 22,
Gazania splendens(Yellow Color)	Asteraceae		+	-	+		9, 12, 22,
Gleditsia triacanthos	Fabaceae	+	+		+		1, 9, 18, 19,
Haematoxylum campechianum	Fabaceae	<u> </u>			+		1, 4, 18, 19, 23,
Harpephyllum caffrum	Anacardiaceae	+	+				1, 4, 17, 18, 19,
Hemerocallis aurantiaca	Asphodelaceae		+		+		9, 12, 20, 22,
Hibiscus rosa- sinensis	Malvaceae		+		+		9, 11, 13, 14, 17, 19, 20
Inga Edulis	Fabaceae		+				1, 4, 9, 17, 18, 19,
Ipomea tricolor	Convolvulaceae		+		+		5, 6, 7, 9, 10, 12,
Ixora Coccinea(Pink Color)	Rubiaceae		+		+		3, 9, 12, 14, 15, 20, 22,
Ixora Coccinea(white Color)	Rubiaceae	1	+		+		3, 9, 12, 14, 15, 20, 22,
Jacaranda ovalifolia	Bignoniaceae				+	+	1, 4, 9, 17, 19
Jasminum grandiflorum	Oleaceae	<u> </u>			+	+	5, 8, 9, 10, 14, 17
Jasminum humile	Oleaceae	<u> </u>			+	+	5, 8, 9, 10, 14, 17
Justicia adhatoda	Acanthaceae	 	+		+		3, 9, 12, 20,
Justicia Spicigera	Acanthaceae		+		+		3, 9, 12, 20,
Kalanchoe marmorata	Crassulaceae		+		+		12, 15, 17, 20,
Khaya senegalensis	Meliaceae		+				4, 18
Koelreuteria paniculata	Sapindaceae	1	+		+		4, 13, 18, 19

Scientific NameFamily \overline{Panily}				Aest	thetical v	[
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Scientific Name	Family	Form beauty			7	Fragrance	Landscape use	
Lampranthus roscus (Red Color) Aizoaccae + + + 6 7 9 2 2 2 2 1 1 6 7 9 2 1 1 2 2 1 1 2 1 1 1 2 1	Lagerstroemia indica	Lythraceae		+		+	+	4, 9, 13, 14, 17, 19	
Lampranthus spectabilisAizoaceae++6, 7, 9, 12, 20, 22,Lantana camaraVerbenaceae+++22Lantana camara nanaVerbenaceae+++22Lantana camara nanaVerbenaceae+++22Lantana montevidensisVerbenaceae+++22Lantana montevidensisVerbenaceae+++20Lawsonia albaLythraccaa++++20Lawsonia albaLythraccaa++++1,18,23,Leucophyllum fruescensScrophulariaceae+-2,9,10,12,14,16,20,Livistona chinensisArecaceae++1,13,19,lonicera japonicaCaprifoliaceae++2,6,9,10,12,14,1Melaleuca lacadendraMyrtaceae++1,4,18,19,23,Melaleuca lacadendraMyrtaceae++1,4,18,19,23,Mesembryanthemum EduleAizoaceae++1,2,9,18,19,23,Ocicnum basilicumLumiaccue++1,2,9,18,19,23,Parkinsonia aculeataFabaceae++9,12,15,20,22,Pelargonium relatum (Pirk color)Geraniaceae++9,12,20,22,Pelargonium relatum (Pirk color)Geraniaceae++9,12,20,22,Pelargonium relatum (Pirk color)Geraniaceae++9,12,20,22,Pelargonium relatum (Pirk color)Geraniaceae++9,12,20,22,<	Lampranthus roseus(Pink Color)	Aizoaceae		+		+		6, 7, 9, 12, 20, 22,	
Lantana camara Verbenaceae $+$ $+$ 22 Lantana camara nana Verbenaceae $+$ $+$ 22 Lantana montevidensis Verbenaceae $+$ $+$ 22 Lantana montevidensis Verbenaceae $+$ $+$ 22 Lawsonia alba Lythraceae $+$ $+$ 20 Lawcaona leucocephala Fabaceac $+$ $+$ $2,$ $1,$	Lampranthus roseus(Red Color)	Aizoaceae		+		+		6, 7, 9, 12, 20, 22,	
Lantana camara nana Verbenaceae $+$ $+$ $+$ 22 Lantana montevidensis Verbenaceae $+$ $+$ 22 Lantana montevidensis Verbenaceae $+$ $+$ 20 Lawsonia alba Lythraceae $+$ $+$ 2 , 9 , 10 , 12 , 16 , 20 , 2 Lawsonia alba Lythraceae $+$ $+$ 2 , 9 , 10 , 12 , 14 , 16 , 20 , 2 Leucaphulum fratescens Scrophulariaceae $+$ $ 2$, 9 , 9 , 0 , 12 , 14 , 16 , 18 , 23 , 10 Liviston chinensis Arecaceae $+$ $ 2$, 9 , 0 , 0 , 12 , 14 , 16 , 10 Ionicera japonica Caprifoliaceae $+$ $+$ 2 , 0 , 9 , 0 , 12 , 14 , 16 Mammillaria geminispina Cactaceae $+$ $+$ 2 , 0 , 9 , 10 , 12 , 14 , 16 Melaleuca leucadendra Mytraceae $+$ $+$ 2 , 9 , 10 , 12 , 14 , 16 Ocimum basilicum Lamiaceae $+$ $+$ 4 , 18 , 19 , 23 Mesembryanihemum Edue Aizoaceae $+$ $+$	Lampranthus spectabilis	Aizoaceae		+		+			
Lantana comura nanaVerbenaceae $+$ $+$ $+$ 22 Lantana montevidensisVerbenaceae $+$ $+$ $+$ $6, 7, 9, 10, 12, 16, 20, 12, 16, 20, 20, 12, 14, 17, 18, 23, 24, 20, 14, 17, 18, 23, 24, 20, 14, 17, 18, 23, 24, 20, 14, 17, 18, 23, 24, 20, 14, 17, 18, 23, 24, 20, 14, 17, 18, 23, 24, 20, 14, 16, 11, 13, 19, 10, 10, 10, 10, 10, 10, 10, 11, 13, 19, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10$	Lantana camara	Verbenaceae				+	+		
Lanitan monevianis Verbenaccae + + 20 Lawsonia alba Lythraceae + + 4, 13, 14, 17, 19 Leucaena leucocephala Fabaccae + 2, 9, 14, 17, 18, 23, Leucaphyllum frutescens Scrophulariaceae + 2, 9, 12, 17, 18, 23, Livistona chinensis Arecaccae + + 2, 6, 9, 10, 12, 14, 16, Lonicera japonica Caprifoliaceae + + 2, 6, 9, 10, 12, 14, 1 Mammillaria geminispina Cactaceae + + 2, 13, 17, 19, 23, Melia Azedarach Melfaceae + + + 6, 7, 9, 12, 15, 20, 2 Ocimum basilicum Lamiaceae + + + 4, 18, 19, 23, Mela Azedarach Melfaceae + + + 1, 2, 9, 18, 19, 23, Melain basilicum Lamiaceae + + + 4, 18, 19, 21 Parkinsonia aculeata Fabaccae + + 4, 18, 19, 21 Parkinsonia aculeata Fabaccae Pelaryonium Peltatum(Red Color)	Lantana camara nana	Verbenaceae				+	+	22	
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Awad et al., 2023

Schinus molle Anacardiaceae $+$ $+$ $+$ $+$ $2, 17, 19, 23$

			Aest	thetical v			
Scientific Name	Family	Form beauty	Ornamental foliage	Ornamental fruit	Ornamental flowers	Fragrance	Landscape use
Schinus terebinthifolius	Anacardiaceae	+	+	+		+	1, 4, 18, 19,
Senecio cineraria	Asteraceae		+		+		3, 12,
Solenostemon scutellarioides	Lamiaceae	+	+				6, 12, 20, 22,
Strelitzia reginae	Strelitziaceae		+		+		9, 13, 16, 20
Tagetes Erecta	Asteraceae				+		4, 9, 13, 14, 17, 19,
Tecoma Stans	Bignoniaceae				+		4, 9, 13, 14, 17, 19,
Tecomaria capensis	Bignoniaceae				+		4, 9, 13, 14, 17, 19,
Thevetia neriifolia	Apocynaceae		+		+	+	9, 11, 17, 19, 20
Tipuana tipu	Fabaceae		+		+		4, 9, 18, 19
Tradescantia pallida(purpurea)	Commelinaceae		+				6, 7, 12, 22,
Verbena hybrida	Verbenaceae				+		6, 7, 9, 12, 22,
Vitex Agnus- castus	Lamiaceae		+		+	+	9 14, 19, 20
Wedelia trilobata	Asteraceae				+		6, 7, 9, 12, 22,
Wigandia Caracasana	Boraginaceae				+		9, 19,
Wodyetia Bifurcata	Arecaceae	+	+				1, 4, 13, 19
Yucca aloifolia	Asparagaceae	+	+				11, 15, 16, 19, 20
Yucca Filamentosa	Yuccaceae	+	+				11, 15, 16, 19, 20

Avenue (1), Barrier (2), Borders (3), Street (4), Covering buildings (5), Covering slopes (6), Erosion control (7), Arbour/pergolas (8), Flowering (9), Trellis/pillar/wall (10), Foundation (11), Ground covers (12), Group planting (13), Hedge (14), House planting (15), Rock gardens (16), Screening (17), Shade (18), Specimen (19), Containers (20), Topiary (21), Under trees (22), Wind break (23).

Quisqualis indica, are detected to be in seven position in landscape. Moreover, among identified species 9 species [Ageratum houstonianum (pink or purple colors), Alternanthera versicolor, Anisacanthus vulgar, Duranta plumieri, Euphorbia milii, Euryops pectinatus, Ixora coccinea, Justicia adhatoda, Lantana camara nana, Ocimum basilicum,....etc.) are used as borders, 87 species farnesiana, Acacia (Acacia saligna, Ageratum Houstonianum, Bauhinia variegata, Bombax ceiba, Cassia fistula, Chorisia speciosa, Chrysanthemum Species,....etc.) are used for flowering and 23 species (Acacia farnesiana, grandiflora. Albizia Lebbeck, Carissa Cestrum aurantiacum, Citrus sinensis, Jasminum grandiflorum, Jasminum humile, Lagerstroemia indica, Lawsonia alba,....etc.) are used in fragrance while the minimum utilizes were wind break (Leucaena leucocephala, Melaleuca leucadendra, Melia Azedarach, Parkinsonia aculeate and Schinus molle) and covering arbour/ pergolas (Antigonon leptopus, Jasminum grandiflorum, Jasminum humile and Quisqualis indica).

Furthermore, [12] evaluated 401 taxa for utilization in landscape architecture design, the majority of these plants *Awad et al.*, 2023

were suitable for aesthetic use (water gardens, rock and dry wall, urban design, roof and terrace gardens, special designs, roadside plantation, road median planting, border fronts, fences, hiding unwanted views....etc.) and others were suitable for ecological and functional landscape use (ground cover, erosion, slope stabilization, avalanche and landslide protection, landscape restoration and preservation, sound and wind prevention).

4. Conclusions

From above mentioned findings, it is preferable to survey ornamental and herbaceous plants of different to know their landscape value and use as well as to evaluate of plant species was focused on their current or projected usefulness in the landscape.

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