

Identification and Description of Some Common Ornamental Plant Species at Ahmadu Bello University Zaria, Nigeria

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Submitted: 08 Nov 2016; Accepted: 18 Nov 2016; Published: 22 Nov 2016

Abstract

A survey was conducted in the year 2014 at the premises of Ahmadu Bello University (Main campus), Zaria, Nigeria (11° 11' N, 07° 38') ; located at an altitude of 586 m above sea level in the Northern Guinea Savanna of Nigeria with annual average rainfall of about 1060 mm. The area is characterized by distinct two seasons; the dry season, comprising of a cold dry period (harmattan) between November and December, and a hot dry period between April and June. The vital part of this work involved the collection, identification and description of some common ornamental plant species found within the premises of the Institute's environment and was presented in the form of original coloured photographs, identifying its scientific names, family names, English names and their common names. These ornamental plant species were then classified based on their characteristics, mode of propagation and usage (hedges, shading, indoor and lawns). During the survey, about 68 ornamental plant species comprising a total of 27 species of indoor plants, 16 of shading plants, 22 species of hedge plants and three species of lawns were identified, described and documented accordingly. It is hoped that this work would inspire floriculturist, botanist, gardeners, students and other researchers to contribute further into this interesting and attractive field of horticultural landscaping that is usually ignored or given less attention.

Keywords: Horticulture, Ornamentals, Landscaping, Species, Floriculture.

Introduction

Floriculture involves the production, distribution and marketing of ornamental plants, potted foliage, beddings and garden plants. These plants include trees, shrubs, ground covers, turf grass or sod, bulbs and planted stock; environmental horticulture which includes crops usually grown outdoors and used primarily for landscaping purposes [1].

Floriculture plants possess aesthetic properties that enhance quality of life [2]. These sectors have been developed in some African Countries such as Kenya which presently produced cut flowers and foliage for export annually. Other leading countries that produce flowers in the world are United States, Israel, India and the European countries, where floriculture sector contributes greatly to their income through export. Aker and Healy reported that development of floriculture in Nigeria is confronted with various problems which include low awareness of the importance of flowers (aesthetic, social-economic and medicinal uses) by majority of Nigeria populace; lack of coordinated scientific research programme focusing on floriculture growth, poor level of

investment both by public and private sectors [3].

According to Jessica (2013) reported that, an ornamental plant is grown for decoration, rather than food or other by-products. Ornamental plants may be grown in a flower bed, shaped into a hedge or placed in a sunny apartment window. They are most often intentionally planned for aesthetic appeal, but a plant that occurs naturally and enhances the landscape could also be considered ornamental. While the most apparent use of ornamental plant is their visual effect, they serve obvious purposes and are used in landscapes throughout the home to beautify the surrounding [4,5].

In fragrance, many ornamental plants are chosen because they appeal to the sense of smell, in addition to their visual appeals. Lavender is widely regarded for its pleasing fragrances although widely harvested for lavender oil, it is commonly planted in home landscapes for its scent and a walk through a rose garden is sure to entice visitors. Some fragment plants prove beneficial at repelling outdoor pests, such as anti-mosquitoes and flies [6].

In view of the fact that there is increasing awareness about the importance of growing ornamental plant species, however, no special care is given to appropriate selection as well as identifying

plants species that are used as ornamentals for different purposes, hence this survey was conducted to document and characterize the common ornamental plants in the premises of the University Campus.

Material and Methods

A survey was conducted around the Ahmadu Bello University (Main Campus) in April 2014. The work involved the collection, identification and description of various ornamental plant species commonly found in the University Campus. The ornamental plants were identified, captured and snapped using digital camera. A vital part of this work was presented in the form of original coloured photograph which were described through consultation with gardeners, books, encyclopedia, internet etc.

Results and Discussion

General

From the survey conducted, the following ornamental plants were identified, these comprises the hedges plants, shading plants and lawns. The habit of using ornamental plants functionally for environmental improvident is yet to be cultivated meaningfully in developing nations including Nigeria. It was reported by Olayiwola, that most house owners believe in using spaces in their surrounding for building shop and hiring accommodations [7]. There is complete neglect of environmental beautification planning

across the nation; however, the presence of some ornamental plants in an environment makes it beautiful and a beautiful environment always cool and inviting. Plant flowering, shrubs around homes often add aesthetic values to our surrounding. Amusa also supported that to control these environmental problems, it was suggested that people should cultivate the habit of having ornamental plants, grasses as cover-mat and fruit trees in their surroundings [8]. Each group of the plant is being described, categorized accordingly and presented as follows:

Hedge plants

Table 1 show the most predominant hedge plant species which are also used as outdoor plants. Hedges plants were identified from Main Campus, Ahmadu Bello University, Zaria, these are plants grown purposely for demarcation of walkways, unscreen and boundary properties. Calvin reported that outdoor plants are plants grown in conjunction with non-plants element such as sculptures, walkways and fountains to create a view or environment that is aesthetically pleasing and nurturing human spirit [9]. The objectives of outdoor ornamental horticulture are the functional and aesthetic integration of people building and sit, using plants and space as its main tools. The necessity of it in landscape is for positive control of the fast changing landscape for the future. These outdoor ornamental plants can be used as cover mat on eroded areas, they help in eliminating dust and they reduce glare air pollution, heat buildup and noise pollution.

| Family Name | Scientific Name | English Name | Common Name | Mode of Propagation | Uses |
|--------------------------------|----------------------------------|------------------------------|--------------------------------------|---|--|
| Euphorbaceae | <i>Codiaeum variegatum</i> | Croton luganda | Rush foil | Stem Cutting | It serves as hedge and spot plant |
| Verbanaceae | <i>Duranta repens</i> | Golden dew drop, sky flowers | Yellow bush | It is propagated by stem cutting | Hedge, flowering plant |
| Casuarinaceae | <i>Casuarina eguisetifolia</i> | Perdester boom | Caserina, Australian pine, iron wood | Stem cutting | Hedge |
| Cuperessaceae | <i>Thuja occidentalis</i> | Thuja plicata | Red cedar | It is propagated by stem cutting | Hedge, spot, avenue plant |
| Euphorbaceae | <i>Acalypha wilkisiama</i> | India acalypha | Acalypha | By stem cuttings | Hedge plant |
| Apocynaceae | <i>Thevetia peniviana</i> | Milk bush | Milk bush | It is propagated by seed and stem cutting | Hedge, flowering shrub |
| Annonaceae (hedge, spot plant) | <i>Plyalthia longifolia</i> | Masquerade | Police, False ashoka tree | Propagated by seed | Multipurpose plant |
| Rubiaceae | <i>Ixora coccinea</i> | Ixora Jungle Flame | Ixora Nora, Grant (Single Ixora) | Stem cutting | Hedge plant |
| Verbanaceae | <i>Duranta erecta</i> | Golden dew drop, sky flower | Green bush | Stem cutting | Hedge, flowering plant |
| Nyctaginaceae | <i>Bougainvillea spectabilis</i> | Bougainvillea | Bougainvillea | Stem cutting | Hedge and flowering climbers for covering trellies, pergolas, fence and spot plant |
| Malvaceae | <i>Rosa Sinensis</i> | Hibiscus | Chinese hibiscus, rose of China | Stem cutting | Hedge plant |
| Cactaceae | <i>Sygrus grandifolia</i> | Queen of the night | Queen of the night | Through seeds | Hedge plant, bedding, fragrance |
| Moraceae | <i>Ficus aurea</i> | Ficus | Finger ficus | Stem cuttings | Hedge plant (Multipurpose) |
| Rutaceae | <i>Murraya exotica</i> | Orange Jessamine | Murraya paniculata | Stem cuttings | Hedge plant |
| Moraceae | <i>Ficus aurea</i> | Ficus | Green ficus, Togo ficus | Stem cutting | Hedge plant (Multipurpose) |

| | | | | | |
|---------------|----------------------------------|--------------------------|--------------------------|--------------------------|--|
| Rosaceae | <i>Rosa</i> | Rose | Rose | Stem cutting | Hedge plant |
| Cactaceae | <i>Cerus spp</i> | Cactus | Cactus | By means of stem cutting | Hedge, spot plant and demarcation of boundaries (Poisonous) |
| Nyctaginaceae | <i>Bougainvillea spectabilis</i> | Bougainvillea | Variegated Bougainvillea | Stem cutting | Hedge and flowering climbers for covering trellies, pergolas, fence and spot plant |
| Rubiaceae | <i>Hussanada</i> | Queen of the Philippines | Queen of the Philippines | Stem cutting | Hedge plant |
| Ranunculaceae | <i>Actaea pachypoda</i> | Eyes plant | Dolls eyes | Stem cutting | Hedge plant |
| Pinaceae | <i>Pinus densiflora</i> | Pinus | Japanese red pine | Stem cutting | Hedge, spot plant |
| Rubiaceae | <i>Ixora coccinea</i> | Ixora Jungle Flame | Double Ixora | Stem cutting | Hedge plant |

Table 1: Predominant hedge plant species identified at Ahmadu Bello University, main campus, Samaru Zaria Nigeria.

Shading (tree) ornamental plants

Table 2 present the shading ornamental tree plant species in Ahmadu Bello University, main campus, Zaria Nigeria. Most of the shading ornamental plants identified provide shade for resting during hot sun. Anonymous reported that certain trees may be called ornamental trees this term is used on garden or landscape settings [5]. For instance, for their flowers their texture form and shape and other aesthetic characteristics.

The beautiful trees along the road provide unquantifiable shade and comfort for pedestrians, while keeping the road intact from solar radiation and other indecent climate conditions trees are used as part of a garden or landscape settings and play a vital role in our environment, they adorn our streets, parks and garden, make our landscape much more interesting. Baiyewu on their research and training programme was conducted on the role of ornamental plant in environmental plant in environmental protection in two areas viz: the ancient and modern communities in Ibadan, Oyo

state, Nigeria which is the largest city in West Africa [10]. The study identified awareness of the inhabitants of these communities to the importance of ornamental plants in their environments from the ancient communities paid no recognition to the importance to ornamental plants. The ancient communities claimed that ornamental plants arrest dust, supplies oxygen and help as wind break.

Trees in the landscape may be classified as narrow leaf or broad leaf, and evergreen or deciduous, long lived trees are large plants in their adult stages. Narrow leaf evergreen are particular in landscape. The trees must be selected and located with care, in selecting tress for the landscape, numerous factors should be considered. Some factors are critical because they determine the success and survival of the plant at the site depending on site and space, adaption, plant size and characteristics at maturity, maintenance, aesthetics, costs, seasonal enjoyment, fruiting, use and rooting characteristics.

| Family Name | Scientific Name | English Name | Common Name | Mode of Propagation | Uses |
|--------------|--------------------------------|---------------------|----------------------------|--------------------------|---|
| Combretaceae | <i>Terminalia catappa</i> | Umbrella tree | India almond | Seed | Shade tree in landscaping |
| Arecaceae | <i>Antiaris toxicana</i> | Antiaris Africana | Satellite, Bark cloth tree | Through seed | Shade tree in landscaping and avenue tree |
| Fabaceae | <i>Delonix regia</i> | Flame of the forest | Poinciana, Bark cloth tree | It is propagated by seed | Shade in landscaping, flowering tree |
| Palmae | <i>Roystonea regia</i> | Royal palm | Cuban royal palm | Propagated by seed | Spot plant, avenue plant |
| Aracariaceae | <i>Aracaria araucana</i> | Alcaria | Alcaria, monkey puzzle | Propagated by seed | Spot plant in landscaping |
| Moraceae | <i>Ficus elastic</i> | Rubber plant | Rubber plant | It is propagated by seed | Shade, spot plant |
| Palmae | <i>Syagnis romanzoffiana</i> | Kings palm | Cocos palm | By seed | Shade, avenue plant |
| Palmae | <i>Dypsis decaryi</i> | Triangle palm | Palm | By seed | Shade, avenue plant |
| Fabaceae | <i>Caesalpinia pulcherrima</i> | Pride of Barbados | Ponciana | It is propagated by seed | Shade in landscaping, fragrant flowers |
| Combretaceae | <i>Plumeria acutifolia</i> | Frangipanii | Frangipanii | Stem cutting | Spot, shade tree in landscaping |
| Leguminosae | <i>Cassia fistula</i> | Golden flower | Golden flower | Seed | Shade, tree in landscaping |
| Leguminosae | <i>Samanea saman</i> | Rain tree | Rain tree | Stem cutting | Shade, tree in landscaping |

Table 2: Predominant shading plant species identified at Ahmadu Bello University main campus, Samaru Zaria Nigeria.

Indoor plants

During the survey the most common indoor plant species found and identified is presented in table 3. Indoor plants (house plants) are plants adapted to indoor conditions, Briggs reported that indoor plants are grown in containers, they are usually slow growing plants and may be flowering or foliage plants, plants can be successfully grown indoors in a controlled environment in which all of the required plant growth factors are supplied in appropriate amounts [11]. Choice of proper growth medium is critical to the success of growing potted plants and choice of plant species is essential in growing indoor plants. Indoor plants are enjoyed by home owners all-round the year.

They are popular houseplant and ornamental plants for offices and shopping malls because they are among the easiest house plant to grow. Numerous cultivars have been selected including plant with variegated leaves. They tolerate a wide range of light, as well as neglect and are relatively resistant to pest. Jack and Jessica suggested that being around plants help people concentrate

better in the home and workplace, Jack reported that keeping ornamental plants in the home and workplace increase memory retention and concentration [12,13]. The calming influence of a natural environment is conducive to positive work environments by increasing a person's ability to concentrate on the task at hand. A recent study of Michigan showed the effect of nature in the home and in the work place serves to stimulate both senses and the mind improving mental cognition and performance. Jack reported that keeping ornamental plants in the home and in the work place increases memory retention and concentration.

Lawns

Lawns were identified in the Main Campus of Ahmadu Bello University, Zaria (Table 4) with mostly carpet grass (*Axonopus compressus*) as the main species. George reported that a lawn is often the least one can provide by way of landscaping at home environment [14]. Several methods are used for establishing new lawns, each with advantages and disadvantages, the most common methods are the use of seed and sods, others are plugging and

| Family Name | Scientific Name | English Name | Common Name | Mode of Propagation | Uses |
|-----------------|----------------------------------|--------------------|-----------------------------------|--|---|
| Agavaceae | <i>Cordyline terminalis</i> | T1 - plant | T1 - plant | Stem cutting | Potted plant |
| Palmae | <i>Cycas circinalis</i> | Cycad palm | Sago palm/cycad (male) | Plantlet/sucker | Potted and indoor spot plant |
| Arecaceae | <i>Caladium bicolor</i> | Elephant ear | bicolor | Tubers | Potted plant |
| Arecaceae | <i>Dieffenbachia amoena</i> | Tropic snow | Dumb cane | Cane/stem cutting | Potted plant (Poisonous) |
| Moraceae | <i>Ficus benjamina</i> | Ficus (Variegated) | Weeping fig | Stem, pole cutting | Potted plant |
| Agavaceae | <i>Dracaena fragrans</i> | Draceana | Corn plant | Stem cutting | Potted plant |
| Euphorbiaceae | <i>Euphorbia tirucali</i> | Milk bush | Milk bush | | Potted plant |
| Palmae | <i>Chrysalido carpus</i> | Palm | Kings palm | Seeds | Potted plant |
| Palmae | <i>Caryota urens</i> | Palm | Fish tail palm | By seeds | Potted plant |
| | <i>Aglaonema modestum</i> | Aglaonema | Chinese evergreen | Plantlets/suckers | Potted plant |
| Arecaceae | <i>Aloe vera</i> | Aloe vera | Aloe vera | Leaves, stem cutting | Potted plant |
| Araceae | <i>Hyphorbe lagericanlis</i> | Palm | Bottle palm | By seed | Potted plant |
| Verbanaceae | <i>Lantana camara</i> | Lantana | Lantana | Stem cuttings | Potted plant |
| Grossulariaceae | <i>Ribes nigrum</i> | Black currant | Black currant | By seed | Potted plant |
| Agavaceae | <i>Elephantipes regia</i> | Yucca | Spineless yucca | Tip or cane cutting, seed offsets, rhizomes or root cuttings | Potted plant |
| Palmae | <i>Cycas circinalis</i> | Cycad palm | Sago palm/cycad (female) | Plantlet/sucker | Potted and indoor spot plant |
| Commelinaceae | <i>Tradescantia zebrine</i> | Zebrina pendula | Inch plant, wondering jew | Stem cutting | Trailing plant for hanging baskets |
| Plumbaginaceae | <i>Plumbago</i> | Plumbago | Plumbago | Stem cutting | Potted plant |
| Asteraceae | <i>Dimorphotheca auriantica</i> | African daisy | Capa marigold | Is by seed | Bedding flowering plants |
| Euphorbiaceae | <i>Euphorbia splendens</i> | Euphorbia | Crown of thorns | Stem cutting | Potted plant |
| Balsaminaceae | <i>Patient Lucy</i> | Impatience | Bedding impatiens, patience plant | Stem cutting | Potted plant |
| Liliaceae | <i>Sansevieria trifasciata</i> | Snake plant | Mother-in-law tongue | Plantlets/sucker | Potted plant (Poisonous) |
| Hydrangeaceae | <i>Hydrangea paniculata sieb</i> | Hydrangea | Hydrangea | Stem cutting | Flowering plant, cut flower and garden ornamental |
| Euphorbiaceae | <i>Cordiaum variegatum</i> | Croton | Cordka atum | Stem cutting | Potted plant |

Table 3: Predominant indoor plant species identified at Ahmadu Bello University main campus, Samaru Zaria Nigeria.

springing. This might be turf grass are the most durable ground covers, the base of the grasses is critical to its survival and should be well protected from damage in terms of growth habit, grass may be described as bunching or creeping. Bunching grasses grow upright in churns; they spread by means of new growth called tillers which arise from the crown. Grass adapted to cool climates, they spread by means of modified stems which could be stolen or rhizomes.

In this capacity, turf has a decorative value and enhances the homes or sites where it is installed. Turf is found not only in the home landscape but also in public parks and commercial building sites, turf functions in the landscape-ornamental spots and recreational and utility. A healthy lawn is obtained through good installation and effective management practices. It starts with the proper turf grass species and is followed by good management practices including mowing, irrigating, and fertilizing and pest control.

Generally, grass differs in texture, some being fine with narrow blades, as in the blue grass and tall fescue; they are in on golf course. These grasses also make excellent lawns.

| Family Name | Scientific Name | English Name | Common Name | Mode of Propagation | Uses |
|-------------|---------------------------|--------------|----------------|------------------------------|-------|
| Poaceae | <i>Poa spp</i> | Grasses | Blue grass | Stem cutting, plugs | Lawns |
| Poaceae | <i>Axonopus compresus</i> | Grasses | Carpet grasses | Seeds, springs, plugs, sods | Lawns |
| Poaceae | <i>Festuca spp</i> | Fescues | Turf grass | Stem cutting, plugs and seed | Lawns |

Table 4: Predominant turf grass identified at Ahmadu Bello University main campus, Samaru Zaria Nigeria.

Conclusion

The research was conducted at Ahmadu Bello University (Main campus) Zaria, Nigeria. The identification and description of the various ornamental plant species were carried out based on their usage as hedges, indoor, shading plant species and lawns.

During the survey, twenty two (22) species of hedges plants, sixteen (16) species of shading plant, twenty four (27) species of indoor plant and three (3) species of lawns making a total of seventy (70) ornamental plants were identified, described and documented accordingly.

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