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Floristic Diversity of Trees in the Cities of Abomey and Bohicon in the Co-urbanization Zones of the Republic of Benin



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Abstract

Urban trees have a significant influence on the local climate by cooling it to provide a good life for the population, but today demographic pressure is contributing to its enormous destruction, which requires the carrying out of certain activities for the conservation of urban biodiversity. The main objective of this study is to determine the floristic diversity of vegetated spaces which are in the towns of Abomey and Bohicon in the Republic of Benin. Data was collected for public square trees, private trees and street plantings with a height of at least 1.30 m and a trunk diameter of 10 cm or more DBH (Diameter at Breast Height). A mobile survey method was used and the data was georeferenced using the Global Positioning System (GPS). The collected data was analyzed using MS Excel. Various species characterize the urban vegetation of the cities of Abomey and Bohicon. The floristic study carried out in these two cities reveals a specific richness of 51 species divided into 43 genera and 28 families. The city of Abomey alone has 49 species divided into 41 genera and 25 families, while that of Bohicon has 45 species divided into 37 genera and 23 families. The Shannon diversity index is 3.22 bits for Abomey and 2.61 bits for Bohicon, with a Jaccard similarity index (JI) of 84%. Overall, diversity is low in both cities and there is complete interdependence between these plant communities. The urbanization of these cities is therefore detrimental to local biodiversity, with the disappearance of natural forests. It is therefore essential to properly maintain public and private green spaces. This action can effectively contribute to solving the many ecological problems that our cities and their inhabitants face.

Keywords: Urban trees; Floral diversity; City of Abomey and Bohicon, Local Climate

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INTRODUCTION

Trees in urban environments serve several functions, as they contribute not only to the optimal functioning of ecosystems upon which ecosystem services depend (Roche et al. (2016), but are also very important, beneficial, and play a crucial role in Human health. Urban trees significantly contribute to enhancing the urban environment by sequestering CO₂ and producing oxygen, and stimulate leisure, relaxation, and personal development for city dwellers (Malard, 2002 ; Ngur-Ikone, 2010 ; Petit-Berghem, 2011). Trees are used in urban planning, providing habitats for diverse animal species and biological connections (Mollie, 2009 ; Marry & Delabarre, 2011). Their development helps preserve biodiversity and the natural heritage of cities (Sène, 2000). Urban forest contribute to the longevity of buildings and homes in urban areas, protect them from wind damage, and providing wind protection for houses in urban areas. Given the numerous benefits of Urban forest for life and the atmosphere, it is crucial to preserve and improve plant habitats, as they help maintain ecological balance and biodiversity (Leroy, 2013).

Despite the many benefits of urban forests, they face many threats and destruction due to population growth and other factors. Today, cities are densely populated and experiencing rapid urbanization due to the consequences of population growth in Africa. In most cities, natural green spaces are being replaced by impermeable surfaces that destroys existing habitats (Grimm et al., 2008). Plant biodiversity is affected by several factors of urbanization including; soil fertilization, disruption of natural cycles, habitat fragmentation and transformation, climate change, and human-induced disturbances (Beaujouan & Pain, 2017). The development of a country or city is strongly linked to industrial and commercial activities, requiring a significant increase in population and a considerable population boom. Rapid population growth and

industrialization have had a negative impact on the health and well-being of residents, as well as on the environment. Increased traffic and industrial activity could lead to increased pollution, harming tree health and impacting plant growth. During the 20th century, various reforms were implemented in North America and Europe to improve the socioeconomic conditions of urban dwellers (Mallet, 2012). However, this perception of modernity has evolved in response to population growth, infrastructure demands, technological, economic, and environmental advancements (Pincetl, 2010). Population growth represents the human process that generates the most altered landscapes, generally leading to irreversible land use (Seto et al., 2011). Given that the municipalities of Abomey and Bohicon are among the Beninese metropolises that have recently experienced rapid population growth, it is very important to examine the variety of urban vegetation that exists in these municipalities in order to anticipate its future sustainability and promote a more promising future.

Materials and Methods

Study location and Study design

This research work, carried out in the towns of Abomey and Bohicon, focuses on floristic diversity and covers the urban communes of the two cities: Djègbé, Vidolé and Agbokpa in the commune of Abomey, and Bohicon I, Bohicon II and Agongointo in the commune of Bohicon. Our study area has a transitional sub-equatorial climate, characterized by two rainy seasons (April to June and September to November) and two dry seasons (July to August and December to March). Average annual rainfall reaches 1,025 mm, with peak rainfall occurring between June and October. In the fourth general population and housing census, the population of the city of Abomey was 71,629 inhabitants, and that of Bohicon was 170,604 inhabitants ((RGPH 4 of 2015)

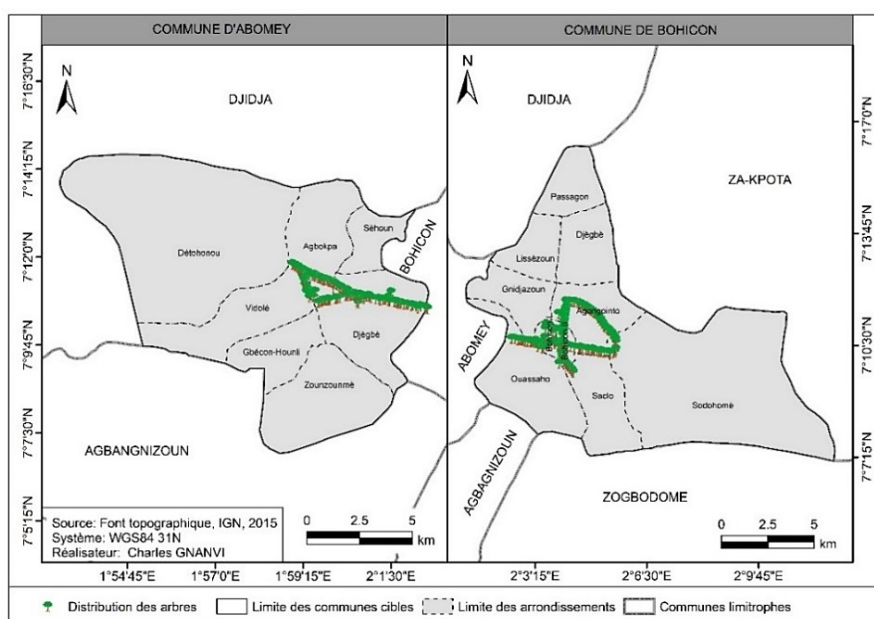


Figure 1 : Location of Surveyed Areas

Data Collection

Selection of Public and Private Green Spaces

The green spaces considered in this research are as follows:

- Roadside Plantings or Shade Rows: paved or asphalted roads planted with trees;
- Landscaped Public Squares (LPS) : public squares where trees are planted;
- Private Green Spaces : These are gardens on properties or houses, containing at least 3 trees or shrubs ;

To determine the floristic diversity of its cities, data was collected and georeferenced by GPS on trees located in roadside plantations, developed public squares and private green spaces (greenhouses) in the two cities, with a height of at least 1.30 m and a trunk diameter greater than or equal to 10 cm (DBH). Mobile survey method was used for roadside trees. The tree species were also identified on the basis of a botanical identification key (Akoegninou et al., 2006).

Table 1: Summary of the sample of green spaces studied

Study area	Linear public green spaces	Polygonal public green spaces	Private Green Space	Total
Abomey	13	5	22	40
Bohicon	16	7	29	52
Total	29	12	51	92

Data Processing

The inventoried woody species were classified according to the systematic scientific classification (family, genus and species) and the parameters below were calculated to characterize the different green spaces using MS Excel.

- ✓ Specific richness (in species): it represents the total number of species present in a given environment.
- ✓ The Shannon diversity index (H, in bits), defined by the following formula:

$$H = - \sum_{i=1}^s \frac{ni}{n} \log_2 \frac{ni}{n} \dots\dots 1$$

ni being the number of individuals of species i and, n the total number of individuals inventoried in the plots. H is between 0 and 5 bits.

- ✓ Pielou's equitability (Eq)
- It is a measure of stand stability and is equivalent to the ratio of H to the theoretical maximum index in the stand (Hmax). It is given by the following formula:
- Hmax). Elle est donnée par la formule suivante :

$$Eq = \frac{H}{H_{max}} \quad \text{Avec } H_{max} = \log_2 S \dots\dots 2$$

-Hmax represents the theoretical maximum Shannon diversity index in the stand. The Eq index can vary from 0 to 1; it is maximal when the species have identical abundances in the population and minimal when a single species or a small group of species dominates the entire population

✓ To understand the relationships between different plant formations, the Jaccard Similarity Index (JI) is calculated using the formula :

$Ij = \frac{c}{a + b - c}$; $100 \times \frac{c}{a + b - c}$; where a and b denote respectively the number of species in environments A and B, and c the number of species common to both environments. If $IJ > 50\%$, the environments are similar, and if $IJ < 50\%$, there is dissimilarity between the environments. In practice, when $IJ > 45\%$, it is assumed that there is similarity between the environments concerned.

Results

Floral richness : Plant species present in the green spaces of the cities of Abomey and Bohicon

The results of the data collected in public and private green spaces indicate that the cities of Abomey and Bohicon together boast 51 species, distributed across 43 genera and 28 families. Abomey alone has 49 species, distributed across 41 genera and 25 families, while Bohicon has 45 species, distributed across 37 genera and 23 families. The most represented species in our study are : Khaya senegalensis (33%), Mangifera indica (17%), Terminalia catapa (15%), Terminalia mantaly (10%), and Gmelina arborea (10%).

Floral Richness of Trees in Shade Rows in the Cities of Abomey and Bohicon

The results of the data collected on the shade rows reveal that the shade rows in these cities are home to a total of 33 species distributed among 27 genera and 17 families. The municipality of Abomey alone has 28 species distributed among 21 genera and 14 families, while the municipality of Bohicon has 22 species distributed among 18 genera and 13 families. The most dominant species are : Khaya senegalensis (45%), Terminalia catapa (28%), Terminalia mantaly (17%), and Gmelina arborea (12%).

Floral Richness of Green Public Squares

The results of the data collected on green public squares reveal that the green public squares of these municipalities boast a total of 28 species distributed across 22 genera and 15 families. The city of Abomey alone has all 28 species distributed across 22 genera and 15 families, while Bohicon has 26 species distributed across 20 genera and 13 families. The most dominant species are : Terminalia mantaly (28%), Azadirachta indica (12%), and Ficus umbellata (10%).

Floral Richness of Private Green Spaces

This study reveals that data collected on green homes indicates that these municipalities boast a total of 21 species, distributed across 17 genera and 11 families. The most prevalent species are : Mangifera indica (18%), Citrus sinensis (13%), and Cocos nucifera (9%).

Table 6 : Floral diversity of urban spaces studied

Cities	S (species)	H' (bits)	E
Abomey	49	3,22	0,67
Bohicon	45	2,61	0,53

Table 7 : Jaccard Similarity Index (JI)

Number of species in Abomey	Number of species in Bohicon	Number of species in common	Jaccard Similarity Index (JI)
49	45	41	84%

JI = 84% ; which is greater than 50%, which reflects a total dependence between these plant formations.

Biological Types

Spectrum of Biological Types by City

The analysis of biological types in our study area reveals that mesophanerophytes, microphanerophytes, and nanophanerophytes have the following percentages, respectively: 59%, 22%, and 12%, and are more prevalent in the city of Bohicon than in the city of Abomey. However, the opposite is true for megaphanerophytes. Megaphanerophytes are more prevalent in the city of Abomey (28%) than in Bohicon.

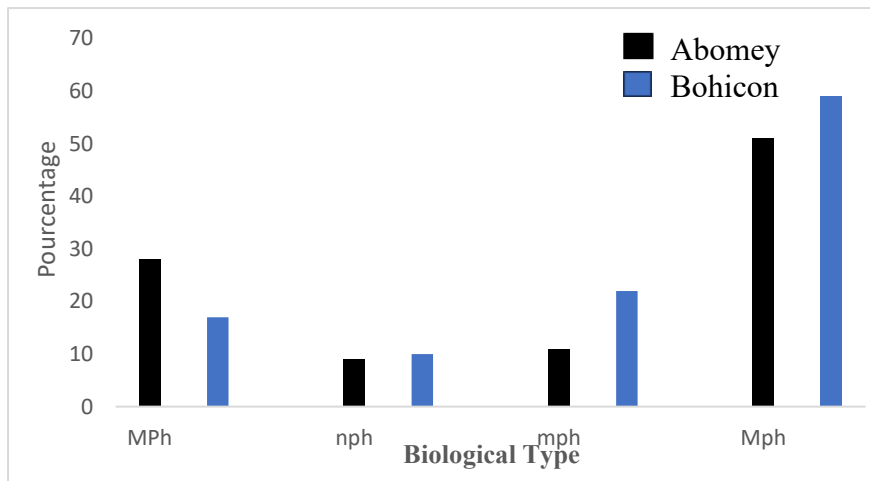


Figure 2 : Raw spectra of biological types by city. Mph: Mesophanerophytes; mph: Microphanerophytes; MPh: Megaphanerophytes; nph: Nanophanerophytes

Spectrum of biological types by type of plant formation

The analysis of this study shows that mesophanerophytes (49%), microphanerophytes (51%) and megaphanerophytes (18%) are more represented respectively in the plant formation types, Public Green Space; Green House and Shade Rows

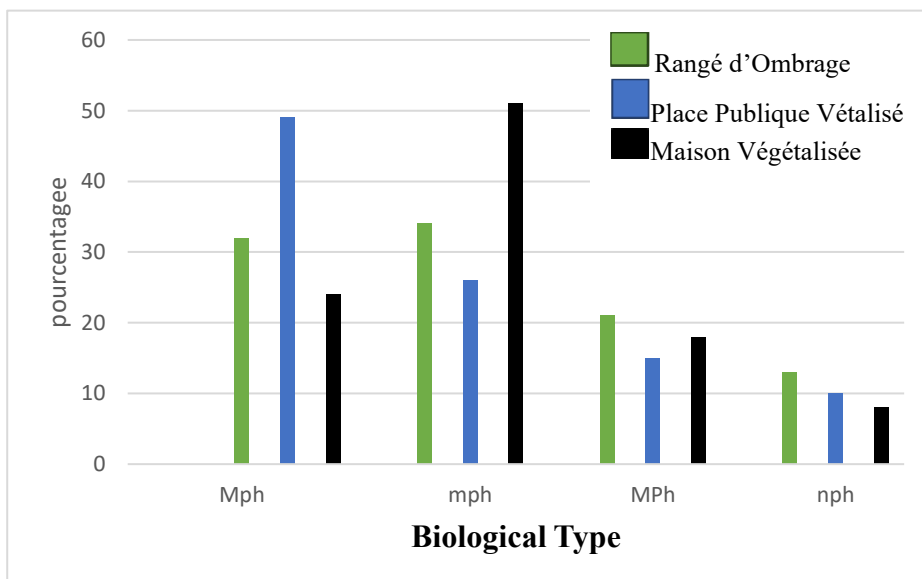


Figure 3 : Biological types by plant formation type. Mph : Mesophanerophytes ; mph : Microphanerophytes ; MPh : Megaphanerophytes ; nph : Nanophanerophytes

Discussion

Different species characterize the green spaces in the cities of Abomey and Bohicon. The floristic study conducted in the two cities reveals a species richness of 51 species distributed across 43 genera and 28 families. Abomey alone is home to 49 species distributed across 41 genera and 25 families, while Bohicon has 45 species distributed across 37 genera and 23 families. This specific richness obtained in the two cities is low compared to natural environments (Osséni et al. 2014). This difference can be explained by the fact that this research considered trees with a diameter greater than or exceeding 10 cm (dbh greater than 10 cm) and a minimum height of 1.30 m. This criterion automatically eliminates all trees that fall outside this range and can significantly reduce the species richness of a study. By considering a smaller diameter, the number of species analyzed in an environment can be optimized (Aimé et al., 2010). The low plant diversity present in the study area also reflects the extent of uncontrolled human activities that can strongly affect diversity, reduce the number of individuals per species, and increase density. The floristic inventory reveals that the species *Khaya senegalensis* is more prevalent than others. This could be due to its resilience, rapid growth, low maintenance requirements, and especially its medicinal properties; it is used in the treatment of 41 diseases (Ouinsavi and Sokpon, 2000). Furthermore, it should be noted that the majority of the trees inventoried in these two cities are not those best suited for urban afforestation in Benin. The twelve species best suited for afforestation in Benin are *Azadirachta indica*, *Averrhoa carambola*, *Cola nitida*, *Dialium guineense*, *Garcinia kola*, *Khaya senegalensis*, *Spathodea campanulata*, *Synsepalum dulcificum*, *Tamarindus indica*, *Terminalia superba*, *Cordia sebestena*, and *Guaiacum officinale* (Tchiboze et al., 2024). These species are valued for their ability to provide persistent shade, creating havens of coolness in tropical climates. Furthermore, their dense foliage plays a crucial role in natural air filtration by trapping suspended particles, thus contributing to the reduction of local air pollution. In this study, street plantings are the most diverse green spaces in our study area. This could be explained by the fact that political and administrative authorities are investing more in this type of green space through events like National Tree Day, because they are aesthetically pleasing and enhance urban landscapes. Street plantings create meeting places and relaxation areas for residents, strengthening the social fabric of neighborhoods and playing a vital role in creating sustainable, healthy, and pleasant cities. Furthermore, the Shannon diversity index obtained from our study in the municipalities of Abomey and Bohicon is 3.22 bits and 2.61 bits, respectively. These results indicate that diversity is not high in any of the studied municipalities, which could also be explained by the fact that rapid urban population growth has led to a significant loss of biodiversity in green spaces (Godonou et al., 2024). However, the diversity index does not provide sufficient information on species abundance within a given area. Therefore, it is more appropriate to consider Piérou's Evenness, as it is a ratio between observed diversity and

the theoretical maximum diversity, and thus provides a better assessment of the structure. Regarding our results, the evenness for the cities of Abomey and Bohicon is 0.67 and 0.53, respectively. We therefore conclude that there is an uneven distribution of tree species. These results are similar to those of Teka et al. (2017), who studied plant diversity and carbon storage in street trees in Cotonou. The unequal distribution of trees recorded in the cities of Abomey and Bohicon can be explained by natural conditions and human activities that negatively influence the normal development of trees. However, it should be noted that human actions on these species are less high, which promotes the more or less normal development of these trees. Regarding biological types, our study results show that Mesophanerophyte species are more prevalent, while Microphanerophyte species are second most common. These results are consistent with those of Osseni et al. (2015), who observed a greater presence of phanerophyte species in urban habitats. This preference may be due to the fact that these phanerophyte species are better adapted to climatic conditions and require less maintenance. This demonstrates that biological type categories represent not only the structural characteristics of a plant but also the various variations in environmental conditions (Schmidt et al., 2005). In summary, it follows from these results that it is imperative to consider improving planning strategies and sustainable management of the flora of these cities for a healthy and sustainable life of these inhabitants, to minimize the effects of climate change observed in the cities. Also, the maintenance of public and private green spaces helps to reduce the many ecological problems that cities face (Sehoun et al., 2021).

Conclusion

In summary, we can conclude that this study was conducted on 92 public and private green spaces located in the cities of Abomey and Bohicon. These two cities together boast 51 species distributed across 43 genera and 28 families. The city of Abomey alone has 49 species distributed across 41 genera and 25 families, while Bohicon has 45 species distributed across 37 genera and 23 families. Across all strata, diversity is generally low, with forests being the shade-providing areas exhibiting high diversity compared to green public squares and green roofs. Cities are thus urbanized at the expense of local biodiversity due to the disappearance of natural forests. Maintaining good upkeep of public and private green spaces is therefore essential. This initiative can play a vital role in addressing the numerous environmental challenges facing our cities and their residents.

Conflict of interest

The authors have no conflicts of interest to declare.

Acknowledgements

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References

- Aimé, V. B. T., Yves, A. Y. C., Djaha, K., & Edouard, N. G. K. (2010). Floristic and structural diversity on the site of a voluntary nature reserve in Azaguié, southeastern Côte d'Ivoire. *European Journal of Scientific Research*, 45(3), 411-421.
- Cochard, A., Pithon, J., Jagaille, M., Beaujouan, V., Pain, G., & Daniel, H. (2017). Plant species in meadows along extensively developed roadsides are filtered by urban environments. *Plant ecology & diversity*, 10 (2-3), 217-229.
- Djogo, J. G. M. (2006). Phytosociology of understory vegetation and ecological impact of forest plantations on floristic diversity in southern and central Benin.
- Etienne, RAG, Gbesso, GHF, Yevide, SIA, Gbaguidi, AHF and Lougbegnon, OT (2024). Floristic composition and conservation of biodiversity in urban green spaces in Porto-Novo, Benin - Implications for sustainable urban planning. *Bio-Recherche*, 22 (2), 2383-2395.
- Leroy, M., Derroire, G., Vendé, J., & Leménager, T. (2013). Sustainable management of tropical forests From critical analysis of the concept to environmental assessment of management systems.
- Grimm, NB, Faeth, SH, Golubiewski, NE, Redman, CL, Wu, J., Bai, X., & Briggs, JM (2008). Global change and urban ecology. *Science*, 319 (5864), 756-760.
- MALARD, V. (2002). Taking nature into account in urban planning. Evaluation of the green network of the municipality of Saint-Pierre-des-Corps, Master's thesis in Urban Planning, University of Tours.
- Mallet, J. (2012). Green cities: analysis of their achievements and proposal of recommendations for their development.
- Marry, S., & Delabarre, M. (2011). Urban naturalness: the impact of vegetation on sound perception in public spaces. *VertigO*, 11(1).
- Mollie, C. (2009). Trees in the city : urban greening. Arles : Actes sud.
- Ngur-Ikone, J. K. (2010). The public policy of the management of green spaces by the Kinshasa city hall. *Africa Development*, 35(3), 13-46.
- Aziz, O. A., Brice, S., & Ismaïla, T. I. (2014). Analysis of the constraints on the viability of urban vegetation: the case of street trees in the city of Porto-Novo in Benin. *European Scientific Journal*, 10(32).
- Osseni, A. A., Toko, M., Tohozin, B., & Sinsin, B. (2015). GIS and management of green spaces in the town of PortoNovo in Benin. *Tropicicultura*, 33(2), 146-156.
- Paradis, G. (2009). Akoègninou A., van der Burg WJ, van der Maesen LJG (editors-in-chief), 2006–Analytical Flora of Benin. Backhuys Publishers. XXII. The Journal of Botany, 45(1), 81-82.
- Pincetl, S. (2010). From the sanitary city to the sustainable city : challenges related to the institutionalization of biogenic infrastructures (natural services). *Local Environment*, 15 (1), 43-58.
- Maris, V., Roche, P., Levrel, H., & Geijzendorffer, I. (2016). Biodiversity values and ecosystem services : Interdisciplinary perspectives. *Quae*.
- Schmidt, M., Kreft, H., Thiombiano, A., & Zizka, G. (2005). Herbarium collections and field data-based plant diversity maps for Burkina Faso. *Diversity and Distributions*, 11(6), 509-516.
- SEHOUN, L. C., OSSENI, A. A., OROUNLADJI, M., LOUGBEGNON, T. O., & CODJIA, J. C. T. (2021). Floristic diversity of urban plant formations in southern Benin (West Africa). *Moroccan Journal of Agronomic and Veterinary Sciences*, 9(2).
- Sène, EH (2000). Forests and food security in Africa: the place of forestry in the FAO Special Programme for Food Security.
- Seto, KC, Fragkias, M., Güneralp, B., & Reilly, MK (2011). A meta-analysis of global urban expansion. *PloS one*, 6 (8), e23777.
- okpon, N. and Ouinsavi, C. (2004). Management of Khaya senegalensis plantations in Benin. *Bois & Forêts des Tropiques*, 279, 37-46.
- Petit-Berghem, Y. (2011). Forest and biodiversity of wetlands in France : What relationships? What prospects for the future ? *VertigO-the electronic journal in environmental sciences*.
- Tchiboze-Kekele, C., Gbedomon, R. C., Todome, L., & Thoto, S. F. (2024). Trees in urban areas of the municipality of Abomey-Calavi, Benin : analysis of expected ecosystem services and feared nuisances. Research report. Abomey-Calavi, Benin.
- Teka, O., Togbe, CE, Djikpo, R., Chabi, R. and Djossa, B. (2017). Effects of urban forestry on the local climate in Cotonou, Republic of Benin. *Agriculture, forestry and fisheries*, 6 (4), 123.
- Raunkiaer, C. (1934). The life forms of plants and the statistical geography of plants ; collection of the works of C. Raunkiaer.

List of Tables

Table 2 : List of plant species present in the green spaces of the cities of Abomey and Bohicon

Scientific Names,	Families,	Genera	Cities	
			Abomey	Bohicon
<i>Khaya senegalensis</i>	Meliaceae	Khaya	+	+
<i>Azadirachta indica</i>	Meliaceae	Azadirachta	+	+
<i>Antiaris toxicaria</i>	Moraceae	Antiaris	+	-
<i>Ficus umbellata</i>	Moraceae	Ficus	+	+
<i>Milicia excelsa</i>	Moraceae	Milicia	+	-
<i>Ficus polita Vahl</i>	Moraceae	Ficus	+	+
<i>Treculia africana Decne</i>	Moraceae	Treculia	+	-
<i>Moringa oleifera</i>	Moringaceae	Moringa	+	+
<i>Eucalyptus cinerea</i>	Myrtaceae	Eucalyptus	+	+
<i>Psidium guajava</i>	Myrtaceae	Psidium	+	-
<i>Albizia zygia</i>	Mimosaceae	Albizia	+	+
<i>Musa ssp</i>	Musaceae	Musa	+	-
<i>Holarrhena floribunda</i>	Apocynaceae	Holarrhena	+	+
<i>Thevetia neriifolia</i>	Apocynaceae	Thevetia	+	+
<i>Thevetia peruviana</i>	Apocynaceae	Thevetia	+	+
<i>Mangifera indica</i>	Anacardiaceae	Mangifera	+	+
<i>Anacardium occidentale</i>	Anacardiaceae	Anacardium	+	+
<i>Cocos nucifera</i>	Arecaceae	Cocos	+	+
<i>Elaeis guineensis</i>	Arecaceae	Elaeis	+	+
<i>Borassus aethiopus</i>	Arecaceae	Borassus	+	+
<i>Roystonea regia</i>	Asparagaceae	Roystonea	+	-
<i>Calotropis procera</i>	Asclepiadaceae	Calotropis	+	+
<i>Polyalthia longifolia</i>	Annonaceae	Polyalthia	+	+
<i>Annona muricata</i>	Annonaceae	Annona	+	+
<i>Newbouldia laevis</i>	Bignoniaceae	Newbouldia	+	+
<i>Terminalia mantaly</i>	Combretaceae	Terminalia	+	+
<i>Terminalia superba</i>	Combretaceae	Terminalia	+	+
<i>Terminalia catappa</i>	Combretaceae	Terminalia	+	+
<i>Haemaoxylum campechianum</i>	Caesalpiniaceae	Haemaoxylum	+	+
<i>Senna siamea</i>	Caesalpiniaceae	Senna	+	+
<i>Carica papaya L</i>	Caryophyllaceae	Carica	+	+
<i>Cassia sieberiana</i>	Fabaceae	Cassia	+	+
<i>Delonix regia</i>	Fabaceae	Delonix	+	+
<i>Acacia auriculiformis</i>	Fabaceae	Acacia	+	+
<i>Azizelia africana</i>	Fabaceae	Azizelia	+	+
<i>Jatropha integerrima</i>	Euphorbiaceae	Jatropha	+	+
<i>Croton zambezicus</i>	Euphorbiaceae	Croton	+	+
<i>Tectona grandis</i>	Lamiacées	Tectona	+	+
<i>Persea americana</i>	Lauriers	Persea	+	+
<i>Erythrophleum suaveolens</i>	Leguminosae	Erythrophleum	+	+
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	+	+
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	+	+
<i>Citrus aurantium</i>	Rutaceae	Citrus	+	+
<i>Citrus sinensis</i>	Rutaceae	Citrus	+	+
<i>Citrus limon</i>	Rutaceae	Citrus	+	+
<i>Chrysophyllum albidum</i>	Sapotaceae	Chrysophyllum	+	+
<i>Blighia sapida</i>	Sapindaceae	Blighia	+	-
<i>Ravenala madagascariensis</i>	Strelitziaceae	Ravenala	+	+
<i>Irvingia gabonensis</i>	Irvingiaceae	Irvingia	+	-
<i>Gmelina arborea</i>	Verbenaceae	Gmelina	+	+

+ Means presence ; - Means Absence

Table 3 : List of plant species present in the shade rows in the cities of Abomey and Bohicon

Scientific Names,	Families,	Genera	Cities	
			Abomey	Bohicon
<i>Khaya senegalensis</i>	Meliaceae	Khaya	+	+
<i>Azadirachta indica</i>	Meliaceae	Azadirachta	+	+
<i>Antiaris toxicaria</i>	Moraceae	Antiaris	-	-
<i>Ficus umbellata</i>	Moraceae	Ficus	+	+
<i>Milicia excelsa</i>	Moraceae	Milicia	-	-
<i>Ficus polita Vahl</i>	Moraceae	Ficus	+	+
<i>Treculia africana Decne</i>	Moraceae	Treculia	-	-
<i>Moringa oleifera</i>	Moringaceae	Moringa	-	-
<i>Eucalyptus cinerea</i>	Myrtaceae	Eucalyptus	+	+
<i>Psidium guajava</i>	Myrtaceae	Psidium	-	-
<i>Albizia zygia</i>	Mimosaceae	Albizia	-	-
<i>Musa ssp</i>	Musaceae	Musa	-	-
<i>Holarrhena floribunda</i>	Apocynaceae	Holarrhena	+	+
<i>Thevetia nerifolia</i>	Apocynaceae	Thevetia	+	+
<i>Thevetia peruviana</i>	Apocynaceae	Thevetia	+	+
<i>Mangifera indica</i>	Anacardiaceae	Mangifera	+	+
<i>Anacardium occidentale</i>	Anacardiaceae	Anacardium	+	+
<i>Cocos nucifera</i>	Arecaceae	Cocos	+	+
<i>Elaeis guineensis</i>	Arecaceae	Elaeis	+	+
<i>Borassus aethiopum</i>	Arecaceae	Borassus	+	+
<i>Roystonea regia</i>	Asparagaceae	Roystonea	-	-
<i>Calotropis procera</i>	Asclepiadaceae	Calotropis	+	+
<i>Polyalthia longifolia</i>	Annonaceae	Polyalthia	+	+
<i>Annona muricata</i>	Annonaceae	Annona	-	-
<i>Newbouldia laevis</i>	Bignoniaceae	Newbouldia	-	-
<i>Terminalia mantaly</i>	Combretaceae	Terminalia	+	+
<i>Terminalia superba</i>	Combretaceae	Terminalia	+	+
<i>Terminalia catappa</i>	Combretaceae	Terminalia	+	+
<i>Haemaoxylum campechianum</i>	Caesalpiniaceae	Haemaoxylum	+	+
<i>Senna siamea</i>	Caesalpiniaceae	Senna	+	+
<i>Carica papaya L</i>	Caryophyllaceae	Carica	+	+
<i>Cassia sieberiana</i>	Fabaceae	Cassia	+	+
<i>Delonix regia</i>	Fabaceae	Delonix	+	+
<i>Acacia auriculiformis</i>	Fabaceae	Acacia	+	+
<i>Afzelia africana</i>	Fabaceae	Afzelia	+	+
<i>Jatropha integerrima</i>	Euphorbiaceae	Jatropha	+	+
<i>Croton zambezicus</i>	Euphorbiaceae	Croton	+	+
<i>Tectona grandis</i>	Lamiacées	Tectona	-	-
<i>Persea americana</i>	Lauriers	Persea	+	+
<i>Erythrophleum suaveolens</i>	Leguminosae	Erythrophleum	+	+
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	+	+
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	-	-
<i>Citrus aurantium</i>	Rutaceae	Citrus	+	+
<i>Citrus sinensis</i>	Rutaceae	Citrus	-	-
<i>Citrus limon</i>	Rutaceae	Citrus	-	-
<i>Chrysophyllum albidum</i>	Sapotaceae	Chrysophyllum	+	+
<i>Blighia sapida</i>	Sapindaceae	Blighia	-	-
<i>Ravenala madagascariensis</i>	Strelitziaceae	Ravenala	-	-
<i>Irvingia gabonnesis</i>	Irvingiaceae	Irvingia	-	-
<i>Gmelina arborea</i>	Verbenaceae	Gmelina	+	+

+ Means presence ; - Means Absence

Table 4 : List of plant species present in the green public squares of the cities of Abomey and Bohicon

Scientific Names,	Families,	Genera	Cities	
			Abomey	Bohicon
<i>Khaya senegalensis</i>	Meliaceae	Khaya	+	+
<i>Azadirachta indica</i>	Meliaceae	Azadirachta	+	+
<i>Antiaris toxicaria</i>	Moraceae	Antiaris	-	-
<i>Ficus umbellata</i>	Moraceae	Ficus	+	+
<i>Milicia excelsa</i>	Moraceae	Milicia	-	-
<i>Ficus polita Vahl</i>	Moraceae	Ficus	+	+
<i>Treculia africana Decne</i>	Moraceae	Treculia	-	-
<i>Moringa oleifera</i>	Moringaceae	Moringa	-	-
<i>Eucalyptus cinerea</i>	Myrtaceae	Eucalyptus	+	+
<i>Psidium guajava</i>	Myrtaceae	Psidium	-	-
<i>Albizia zygia</i>	Mimosaceae	Albizia	-	-
<i>Musa ssp</i>	Musaceae	Musa	-	-
<i>Holarrhena floribunda</i>	Apocynaceae	Holarrhena	-	-
<i>Thevetia nerifolia</i>	Apocynaceae	Thevetia	-	-
<i>Thevetia peruviana</i>	Apocynaceae	Thevetia	-	-
<i>Mangifera indica</i>	Anacardiaceae	Mangifera	+	+
<i>Anacardium occidentale</i>	Anacardiaceae	Anacardium	+	+
<i>Cocos nucifera</i>	Arecaceae	Cocos	+	+
<i>Elaeis guineensis</i>	Arecaceae	Elaeis	+	+
<i>Borassus aethiopus</i>	Arecaceae	Borassus	-	-
<i>Roystonea regia</i>	Asparagaceae	Roystonea	-	-
<i>Calotropis procera</i>	Asclepiadaceae	Calotropis	+	+
<i>Polyalthia longifolia</i>	Annonaceae	Polyalthia	+	+
<i>Annona muricata</i>	Annonaceae	Annona	-	-
<i>Newbouldia laevis</i>	Bignoniaceae	Newbouldia	-	-
<i>Terminalia mantaly</i>	Combretaceae	Terminalia	+	+
<i>Terminalia superba</i>	Combretaceae	Terminalia	+	+
<i>Terminalia catappa</i>	Combretaceae	Terminalia	+	+
<i>Haemaoxylum campechianum</i>	Caesalpiniaceae	Haemaoxylum	-	-
<i>Senna siamea</i>	Caesalpiniaceae	Senna	+	+
<i>Carica papaya L</i>	Caryophyllaceae	Carica	+	+
<i>Cassia sieberiana</i>	Fabaceae	Cassia	+	+
<i>Delonix regia</i>	Fabaceae	Delonix	+	+
<i>Acacia auriculiformis</i>	Fabaceae	Acacia	+	+
<i>Afzelia africana</i>	Fabaceae	Afzelia	+	+
<i>Jatropha integerrima</i>	Euphorbiaceae	Jatropha	-	-
<i>Croton zambezicus</i>	Euphorbiaceae	Croton	+	+
<i>Tectona grandis</i>	Lamiacées	Tectona	-	-
<i>Persea americana</i>	Lauriers	Persea	+	+
<i>Erythrophleum suaveolens</i>	Leguminosae	Erythrophleum	-	-
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	+	+
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	-	-
<i>Citrus aurantium</i>	Rutaceae	Citrus	+	+
<i>Citrus sinensis</i>	Rutaceae	Citrus	-	-
<i>Citrus limon</i>	Rutaceae	Citrus	-	-
<i>Chrysophyllum albidum</i>	Sapotaceae	Chrysophyllum	-	-
<i>Blighia sapida</i>	Sapindaceae	Blighia	-	-
<i>Ravenala madagascariensis</i>	Strelitziaceae	Ravenala	-	-
<i>Irvingia gabonensis</i>	Irvingiaceae	Irvingia	-	-
<i>Gmelina arborea</i>	Verbenaceae	Gmelina	+	+

+ Means presence ; - Means Absence

Table 5 : List of species present in private green spaces in the cities of Abomey and Bohicon

Scientific Names,	Families,	Genera	Cities	
			Abomey	Bohicon
<i>Khaya senegalensis</i>	Meliaceae	Khaya	+	+
<i>Azadirachta indica</i>	Meliaceae	Azadirachta	-	-
<i>Antiaris toxicaria</i>	Moraceae	Antiaris	-	-
<i>Ficus umbellata</i>	Moraceae	Ficus	+	+
<i>Milicia excelsa</i>	Moraceae	Milicia	-	-
<i>Ficus polita Vahl</i>	Moraceae	Ficus	+	+
<i>Treculia africana Decne</i>	Moraceae	Treculia	-	-
<i>Moringa oleifera</i>	Moringaceae	Moringa	-	-
<i>Eucalyptus cinerea</i>	Myrtaceae	Eucalyptus	+	+
<i>Psidium guajava</i>	Myrtaceae	Psidium	-	-
<i>Albizia zygia</i>	Mimosaceae	Albizia	-	-
<i>Musa ssp</i>	Musaceae	Musa	-	-
<i>Holarrhena floribunda</i>	Apocynaceae	Holarrhena	-	-
<i>Thevetia nerifolia</i>	Apocynaceae	Thevetia	-	-
<i>Thevetia peruviana</i>	Apocynaceae	Thevetia	-	-
<i>Mangifera indica</i>	Anacardiaceae	Mangifera	+	+
<i>Anacardium occidentale</i>	Anacardiaceae	Anacardium	+	+
<i>Cocos nucifera</i>	Arecaceae	Cocos	+	+
<i>Elaeis guineensis</i>	Arecaceae	Elaeis	+	+
<i>Borassus aethiopum</i>	Arecaceae	Borassus	-	-
<i>Roystonea regia</i>	Asparagaceae	Roystonea	-	-
<i>Calotropis procera</i>	Asclepiadaceae	Calotropis	+	+
<i>Polyalthia longifolia</i>	Annonaceae	Polyalthia	+	+
<i>Annona muricata</i>	Annonaceae	Annona	-	-
<i>Newbouldia laevis</i>	Bignoniaceae	Newbouldia	-	-
<i>Terminalia mantaly</i>	Combretaceae	Terminalia	+	+
<i>Terminalia superba</i>	Combretaceae	Terminalia	+	+
<i>Terminalia catappa</i>	Combretaceae	Terminalia	+	+
<i>Haemaoxylum campechianum</i>	Caesalpiniaceae	Haemaoxylum	-	-
<i>Senna siamea</i>	Caesalpiniaceae	Senna	+	+
<i>Carica papaya L</i>	Caryophyllaceae	Carica	+	+
<i>Cassia sieberiana</i>	Fabaceae	Cassia	+	+
<i>Delonix regia</i>	Fabaceae	Delonix	+	+
<i>Acacia auriculiformis</i>	Fabaceae	Acacia	+	+
<i>Afzelia africana</i>	Fabaceae	Afzelia	+	+
<i>Jatropha integerrima</i>	Euphorbiaceae	Jatropha	-	-
<i>Croton zambezicus</i>	Euphorbiaceae	Croton	+	+
<i>Tectona grandis</i>	Lamiacées	Tectona	-	-
<i>Persea americana</i>	Lauriers	Persea	+	-
<i>Erythrophleum suaveolens</i>	Leguminosae	Erythrophleum	-	-
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	+	+
<i>Pterocarpus erinaceus</i>	Leguminosae	Pterocarpus	-	-
<i>Citrus aurantium</i>	Rutaceae	Citrus	+	+
<i>Citrus sinensis</i>	Rutaceae	Citrus	-	-
<i>Citrus limon</i>	Rutaceae	Citrus	-	-
<i>Chrysophyllum albidum</i>	Sapotaceae	Chrysophyllum	-	+
<i>Blighia sapida</i>	Sapindaceae	Blighia	-	-
<i>Ravenala madagascariensis</i>	Strelitziaceae	Ravenala	-	-
<i>Irvingia gabonensis</i>	Irvingiaceae	Irvingia	+	-
<i>Gmelina arborea</i>	Verbenaceae	Gmelina	+	+

+ Means presence ; - Means Absence